

ECONOMICS – HERE’S MY TAKE

A Survey of Economics

by a Puzzled Outsider

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210 S. Yellowstone Drive
Apt. 210
Madison, Wisconsin

mkienitz@sbcglobal.net

“Economists set themselves too easy, too useless a task if in tempestuous times they can only tell us that when the storm has long passed the ocean is flat again.”

- John Maynard Keynes

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PREFACE

When I retired from my career in physics and engineering in 2006 I began to look into economics. It has always intrigued me since it seemed to underlie almost everything in our modern society. Our everyday lives are dominated by economic forces and behaviors. Politicians speak of how wonderful or how awful the economy is. We are totally dependent on other people for our daily bread and other necessities of life. There is nothing new in that; we've provided for each other since caveman days. But today it's different. We support each other at great, impersonal distances. We don't know our helpers, we will never meet them, and there's no need to. All of us, however, near and far, must do our jobs or grass will grow in the streets.

So when I retired from engineering I decided to look into economics. It was a slow-burning thing that grew upon me over years of little puzzles that accumulated in my mind. They were nothing to worry about, but strange.

The complicated arrangements we've made to provide for each other are amazing. Today, just to put food on the table it's necessary to drill for oil and refine it, build railroads and highways, produce electricity, operate giant farms, processing plants, warehouses, and grocery stores. When I stepped back for a moment I could realize how bizarre this is – how far from the kitchen garden and the potato patch. But if this huge network did not exist hundreds of millions of people would not be alive today. And, all of this is just for our food. How we get clothing and shelter are equally astounding. Then there are the services we take for granted like

schools and health care plus the thousands of non-essential items which are nice, convenient, fun, or gotta-have. Every one of these has its own complex supply chain with its associated jobs, financing, transportation, etc., all criss-crossing with others, making up what we call 'the economy.'

The economy, I could see, was our *name* for the widest scope of our social arrangements. Literally everyone was included in some way, whether they knew it or not, liked it or not. The man supporting his family and the welfare bum were both in it. The wife at home raising the kids without pay was thought to be outside the economy, but not so. Without the work of millions like her society would fall apart.

It was plain to me that many people didn't think about the economy in such a broad way. They thought it was all about money: how it came and went, how it was made, how much there was, was there enough, etc. That was complicated enough.

I was not totally ignorant about the economy when I began this project, or so I believed..I knew that the government and the Federal Reserve Bank somehow controlled money. I knew that the Gross Domestic Product measured the economy's health and that the S&P 500 did the same for the stock market. I knew that households, businesses, financial markets and governments interacted in complicated ways. And, that raw materials, goods and money flowed everywhere around the world. That wasn't too bad a start, was it? Little did I know.

I didn't begin by studying economics textbooks. I wanted a broader view. I started

with J. K. Galbraith's *American Capitalism*, Thorstein Veblen's *The Theory of the Leisure Class*, and *The Economist* magazine. These led me to others, and then many others. I got interesting-looking books from the library and used book stores. I got a University of Wisconsin library card. This wasn't college-course learning. It was like picking up pebbles at the seashore; a sample here, a bit there, like learning science by skipping from Newton to Carl Sagan; from Galileo to Einstein.

I'm still no economist, but after a few years of such patchwork study I've learned enough to better realize the outlines of my ignorance. I can make out the big picture as seen by economists. At first, my training in physics and engineering made me very impatient with what I was reading. So much hand-waving! So many just-so stories! Idiot-simple theories fancied up with higher mathematics! But there were real men and women of genius who had worked out valuable insights and first steps. I learned a lot from them. It was strange that other economists seemed not to do so. I think I could now enroll in an Econ 101 course and not be put off by it.

INTRODUCTION

We all know that the economy has problems. Politicians continually talk about how wonderful or how terrible it is. Production, employment, national debt, the Dow Jones and so on. Pleasing or alarming, the talk goes on. Our personal problems are more important but money and its security are never far from our minds. Can I make the mortgage payment? Am I going to get laid off? Can my business meet payroll? Few can live without such thoughts pressing upon them. Maybe Henry Thoreau was an exception. He lived alone at Walden Pond but he didn't do it for long.

So, when I looked into economics I thought I would study how it worked; the nuts and bolts, the gears and levers. Perhaps I could understand why it was the way it was and how it came about. Was it supposed to be like that? Had anyone really figured it out? Was it a free-for-all or did the movers and shakers actually run things? These questions had grown upon me over the years; slow-burning puzzles that had accumulated in my mind. They were curiosities, nothing more. Here are a few that got me to thinking:

I saw that people's politics usually decided their views on economics. It was quite noticeable. At neighborhood picnics my dad, a New Deal Democrat, and a friendly Republican economics professor would josh each other about politics and the economy. They were always miles apart. There was never a meeting of minds. It was true of Republican and Democratic politicians too. It seemed to be an inner, personal thing like left- and right-handedness. They saw things from opposite ends of the proverbial ten-foot

pole. "Wealth creation" vs. "trickle down." "Higher wages mean higher prices" vs. "higher wages mean more customers."

Many of the business people I came to know were instinctively against all taxes, in the gut. It seemed to hit them where it hurt. True, their profits and incomes were not predictable like salaried employees, but business taxes moved up and down with profits. Their taxes were not under their control but neither were strikes, supplier prices, or customer demand. Why did they have such a visceral reaction against taxes, not just their own but everyone's?

I found more annoying tidbits: I could never find a description of the economy-as-a-whole. Instead I learned of several theories, each espoused by a leading (or famous dead) economist. There was the invisible-hand, laissez-faire, free market theory. There were the supply side, demand-side, and ever-popular trickle-down ideas; then the Marxist, Keynesian and New-Deal stimulus theories; there were the Chicago, Austrian and Ayn Rand schools, leaving aside the National Socialist economies of Europe. Each of them had a hand on the elephant, so to speak, insisting that their part was the whole. Worse yet, some of them had no grip on the elephant at all but claimed their description was the way the elephant *ought to be*. They talked past each other and formed 'schools of thought.' They were like branches of natural philosophy or alchemy as medicine once was with its black humours and leeches. Also, politicians were always good for laughs: when the Iraq war began, President G. W. Bush was asked how the American people could support the war effort. He might have

said, "Iraq has oil which will pay for it" or "buy U.S. Treasury bonds." Instead he said, "go shopping."

There were other dissonances: advertising supported television, sports events, and retail sales. But advertising only went after people's wants and desires: "You have bread; here, try cake -- no, no, this cake!" "Ask (rather tell) your doctor about this new pill!" At the same time many needs were not being provided for. Businesses always wanted to be the fastest-growing not necessarily the biggest in wealth, revenue or return on investment. Why was that? Although their stated aim was to maximize profit and shareholder return they did not go in for cheating, fraud, or deception on any significant scale. There were evidently more parts to the capitalist creed. Why were these left unstated, in the background?

Economics has been called the dismal science because of its heartlessness. In a society of rational self-seeking individuals, the capable and talented people would supposedly rise to the top by hard work while the ignorant and afflicted would remain at the bottom in spite of their best efforts. Those who didn't make an attempt were 'lazy', and lumped in with the afflicted. This uncannily resembled the Calvinist doctrine of predestination, where the few are chosen by God as the Elect while the many are not. Economic theorists seemed not to have noticed this parallel. Was it unfair to foist this unpleasant doctrine onto them because theology isn't their field? Or is the dismal science actually founded on religion?

I found even more incongruities as I dug into things. Adam Smith, the 18th century hero of today's conservatives, proclaimed the market as the source of economic prosperity and stability. But he also wrote that the government should build highways, harbors

and other public works because the market would not. The staffers in Reagan's white house who proudly wore their Adam Smith ties didn't get that last part of the message. Lots of conservatives still don't. Smith's books are very long. Not many people read them all the way through.

In spite of all these obvious problems, economists were called into the councils of business and government. Their expertise was needed. Important decisions had to be made. Often things didn't work out but, after all, the world is complicated. President Harry Truman joked about one-handed economists: "On the one hand, but on the other hand . . ." Every economic forecaster and columnist had a different approach. The dismal science might be dismal, but it was certainly no science! There is a story from the heyday of the Soviet Union: on May Day the latest weapons were paraded in front of the Kremlin. Tanks were followed by tractors pulling missiles. Behind these were pickup trucks carrying men in suits. The Party boss asked the Defense Minister about the men in suits. He explained that they were economists, and "their destructive capacity is incredible."

As the picture filled in I saw that economists, after a fruitful beginning, had become stuck in a rut for a very long time. What was the problem here? They had fallen in love with the theory of a free market, a timeless ideal, and didn't know how to break off the affair. A few had doubts but the theory was oh, so beautiful. It had become familiar and then became 'received wisdom.' They appeared a bit like antique car enthusiasts, talking up their favorite models and polishing the hubcaps. Careers had come to depend upon it. This situation lasted well into the 20th Century. Some changes began in the 1940s but were neglected because they didn't fit the reigning theory. Some green shoots have

recently appeared. Hopefully they will grow into small bushes and someday shade out the noxious weed of laissez faire.

I have arranged the following sections in a way that makes sense to me:

Humankind started with nothing and stayed that way for a very long time. What we now call the Economy is a relatively new thing. It is a great success but it also has troubles. Early theories about the economy were plausible, even beautiful, and were hard to give up. They were based on scarcity as the basic concept and equilibrium as a necessary assumption. Many variations of equilibrium models were developed but they all ran up against the 'real world' which didn't behave as they predicted. Well, the world is complicated. Today's economic theories have difficulty in describing how money and credit operate; what they are and how they drive the economy. Similarly, theory doesn't seem to have a good handle on capital, economic growth, the distribution of wealth, and how all of them develop over time. Maybe that's asking too much. It seems to me that economics is based on an ideology or world view that prevents an open-minded approach to its subject.

I am still a poor, puzzled student of economics but I believe I can see the big picture. A real economist can show up flaws in my thinking but I can now see that the emperor has no clothes, and I can point to the places where I think economists fear to tread.

1 – THE LONG SLOG

We didn't get rich and comfortable very quickly or easily. The world's peoples have been very gradually, from caveman days onward, oh-so-slowly, pulling themselves out of poverty. We are lucky to be living now, not back then. These are very different times. Europe and America began the economic development parade and then more countries joined in. Japan and South Korea are now close behind with Brazil, Russia, China and India pushing in. Average wealth per person, world-wide, is now rising exponentially by 1.5 to 2 percent each year, which means that per-capita wealth is doubling every generation or two. The obvious question is: why didn't everyone get wealthy a long time ago with this rate of growth compounding on itself? What took us so long?

One reason is that the human race started with nothing, not even the clothes on their backs. Things happened *very* slowly during prehistoric times. It took many centuries to climb up from nothing. Double, or even a thousand times nothing is still nearly nothing. The main reason for the long, long, time was that economic growth was so low for millennia – far below 1 percent – more like 0.0001 percent per year. At that rate, it would take 7000 years to double the average wealth of the human race. Another reason that per-capita wealth did not grow over time was because population increased along with total wealth. When agriculture was invented the growth rate jumped to a much higher number than before. Wealth per person began to accumulate faster than before, yet was still tiny by today's standards.

Then a big break happened in 17th century Europe. There was an intellectual renaissance: the printing press was invented; a religious reformation and an industrial revolution occurred. Capitalism was born although it didn't yet have a name. The aristocracy's influence lessened. Agricultural production increased even further. Peasants were displaced but they found work in factories. Commerce and trade increased. Usury laws were dropped. England became a strong trading nation and other countries joined in. Once begun, the growth rates of the industrialized nations rose to about 3 percent per year and wealth grew on an exponential curve. Wars, depressions and natural disasters were merely blips on this rising curve. Incomes and living standards improved as capital accumulated and was reinvested. Innovations like the steam engine raised productivity by great leaps, keeping growth going. Compared to the previous centuries, growth rates of 2 to 3 percent per year were incredibly, unbelievably high. Because England started earliest she got well ahead of others and became the richest country in the entire world.

Conditions improved and increasing wealth was spread over more people. Even though the population was growing the economic growth rate was about 2 percent per person each year, a fantastic number, which meant that an average person's income would double in 34 years, about a lifetime. For the first time in history people could believe that their children's lives would be better than their own; a revolution in expectations. Work gradually changed from a means to stay alive to a way to get ahead. As the Protestant ethic

took hold, work could even become a “calling” pleasing to God.

If the history of GDP for the advanced countries for the past 300 years or so were plotted on a graph, it would show steady growth. But population also increased rapidly over this time. When adjusted for population growth, a similar graph of per-capita GDP would still show a steady increase of lesser slope. Tables and charts have been published [1] [2] which show extremely slow per capita growth rate for thousands of years, then the great transition, followed by a remarkably steady growth rate thereafter. Prior to the 17th century the graph is a flat, horizontal line with very low growth but in the 1600s it bends abruptly upward. Economists call it the “hockey stick graph.” This unprecedented change seems to occur with the invention of capitalism. Another graph [3] of per capita growth in the United States economy for the past 200 years shows that deviations from a constant rate are minor. Big events like the depressions of the 1870s and 1930s are visible, but not much else is significant.

It appears that humanity passed a real turning point when capitalism took off in Europe. There was a cultural shift. A new state of mind had formed among those who financed world exploration, inquiry, innovation and capital accumulation. The high and mighty of earlier times and other countries did not have these attitudes. Remarkably, this transformation in economic growth, expectations and living standards has continued and persisted for centuries. Per capita growth in the developed countries kept going at about 2 percent per year.

Locally, wealth is most often accumulated not by steady and patient accumulation but by great leaps. In the early 1500s floods of gold and silver came into

Spain from South America. These fortunes went to the Spanish aristocracy who spent it on castles, courtiers and servants. Prices in Spain rose rapidly. But when Sir Francis Drake captured shiploads of Spanish gold and took them to England the booty went into commerce, and earned large profits through trade. There were surges in real wealth in England, not inflation. In the following century both the English and French economies generated tremendous new wealth while the Spanish did not. England became the wealthiest country in the world through imperialism and trade. It built a powerful navy to protect its trading ships, conquered huge areas of the world, built up immense trade surpluses, and became the world’s center of commerce, finance, and power. Its navy literally ruled the waves. The new wealth spread beyond the aristocracy. Merchants and traders got rich. The lower classes still had a hard time but the increase in national wealth was real. John Maynard Keynes, an English economist, suggested that it laid the foundation for the Elizabethan age that followed, a time of stability and wide prosperity in England.

Keynes believed that two factors had produced our present high rate of growth: capital accumulation and technical innovation. Both of them are now proceeding faster than ever and stimulating each other to new heights. Technical progress creates new conditions which change society. Inventions like steam power, automobiles, television and the internet create new jobs which grow the economy. They also change how people think and live their lives. Growth provides new kinds of goods and improves the quality of goods offered. Car engines once needed hand cranks. TV replaced radio. Color TV superseded black & white. Incredible innovations like mobile phones seem to come

out of nowhere, unexpected new pathways to growth that change the whole world. A product may cost no more than a few years before, even after inflation, but gives more value per dollar. New goods are created that were never imagined before. The importance of these additions to the standard of living cannot be pinned down. Such improvements increase economic growth but not in measurable ways. Economists invented the awkward term “hedonic” growth in attempting to describe these effects.

The world has now lived with capitalism for over 300 years. Rapid change has been the rule compared to previous centuries. More people have been liberated from poverty, worldwide, than in any comparable period in history. Even the ‘backward’ countries have benefited via imperialism and colonization. The world’s economy has grown faster than its population for many years. Such long-term growth accumulated great wealth. The advancing countries became extremely rich by any previous standard. Keynes, who had become an advisor to the British government, was a wealthy man. He knew that he was living like a king. He wrote in 1920: [4]

“ . . . life offered, at a low cost and with the least trouble, conveniences, comforts, and amenities beyond the compass of the richest and most powerful monarch of other ages. The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantities as he might see fit, and reasonably expect their early delivery at his doorstep. But most important of all, he regarded this state of affairs as normal, certain, and permanent, except in the direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable.”

Since then, millions can enjoy such privileges because the world’s economy has grown by at least eight times and its wealth, per capita, by six-fold. Keynes was aware of the great transformation and what it portended. In his famous essay *Economic Prospects for our Grandchildren*, he wrote of what such economic growth could bring about in another hundred years. He essentially said that the power of compounded growth would overtake everything else and that the world could become wealthy enough to solve mankind’s “economic problem,” the burden of toiling for mere subsistence, thus freeing most people in the advanced countries from want and opening their lives to leisure. Today’s economists are amazed that Keynes’ predictions on Gross Domestic Product were so accurate, but they note that people still work, work, work, and don’t choose leisure. They miss his point that they no longer toil for a living by the sweat of their brow. Their economic problem has been solved. They have food and shelter and need not store up supplies for the winter. They can choose how to live their lives, and appear to choose work over leisure.

2 – TROUBLE, WE GOT TROUBLE

It is impossible for those who profess to understand economics and government to escape the charge of knowing nothing whatever of these subjects so long as poverty and unemployment exist in an age of brilliant scientific achievement.

– Frederick Soddy [1]

I once read that no one is actually responsible for the Wall Street meltdown of 2007-2008. Some Wall Streeters may have been especially greedy but most of those in banking and finance were just doing their jobs, trying to get ahead, looking for the best deal and trying to make a living in difficult times. How could you blame them?

Homebuyers were offered terrific financing deals and jumped at the chance. Now they could own instead of rent and stop pouring money down a rat hole. Brokers who sold the adjustable-rate mortgages made their quotas, commissions, and bonuses for the month. Bankers couldn't get enough of those liar-loan mortgages. They sold them for good profits to New York, who was always screaming for more of them. The big money-center banks took thousands of little mortgages, good and bad, sliced them up, and packed them into mortgage-backed bonds. These were sold at a markup to other big banks, investors, pension funds and foreign governments wanting sizeable returns with low risk, safe as houses. All of this was to everyone's advantage. They were getting what they wanted. It was win-win, up and down the line. It was a textbook case of the free market at work. The self-interest of each participant was focused on concluding the sale. Once done, it was "I've got mine, Jack," and the hot potato was passed onward. What could possibly go wrong?

The story of capitalism is not just one of climbing up a mountain in triumph. Remember those little blips on the ever rising

curve? They were not so little to those that lived through them. There were really big headaches every generation or so. The depressions of the 1870s and early 1900s in America are now beyond living memory but the 1930s are not, not quite yet. In 2008 we were again fortunate to be living in interesting times. The tremors started in August of 2007 and the bottom fell out in September, 2008. On Wall Street, the Lehman Brothers and Bear Stearns brokerages collapsed and some banks went under. Washington Mutual bank in Seattle, Wachovia bank in South Carolina and Colonial bank in Alabama all disappeared, gone bust because they held so-called toxic assets: unsaleable mortgage-backed securities. Solomon Brothers and Goldman Sachs on Wall Street reorganized themselves into bank holding companies in order to draw on the Federal Reserve's emergency lending powers.

The crash in 2008 was not as big as that of October, 1929, but bank lending essentially stopped. There were no new mortgages issued, no commercial paper, and finally no overnight inter-bank lending. Corporations were squeezed to meet payrolls. Everyone held their breath. Treasury Secretary Hank Paulson and Fed Chairman Ben Bernanke met with Congressional leaders and demanded an overnight \$900 billion emergency funding bill or else the banking system of the nation, and likely the rest of the world, would collapse. They proposed to buy toxic assets from the banks to free them of the paralyzing fear of lending to other banks which might be going broke; fear of getting

any loans repaid. Congress labored and brought forth a \$790 billion Troubled Asset Relief Program, or TARP, but it was not carried out because the toxic assets couldn't be valued. The banks wanted full book prices for them but their real prices were unknown since there was no longer a market for them.

Besides, the bad mortgage securities were only a part of the problem. Credit-default swaps had been sold against them which added up to far more than the securities' values. So Paulson & Bernanke went to Plan B – they gave *cash* to the banks, adding to their reserves to keep them from going broke. They forced all banks to take money from TARP so that none of them would be singled out as being troubled.

There was tremendous public outrage. The banks that had caused the mess were now being rewarded for their bad behavior. Some that didn't need money to stay afloat confirmed the public's worst perceptions by paying huge year-end bonuses to their management or by buying up smaller banks with TARP funds. That doomed any chance for more public funds no matter how desperate the need.

The credit-default swap problem was bottled up by nationalizing the AIG insurance company which held many of them. The Fed put another \$180 billion into it. But the toxic mortgage-backed securities and credit-default swaps were still out there, held by banks and investors around the world. There was no central registration of who held what. They were hidden like land mines. Banks everywhere were reluctant to make any substantial loans, not knowing who was about to fail or be taken over by their governments. This loan strangulation was much improved when Congress relaxed the accounting requirements for problem loans by allowing

U.S. banks to carry them at book value rather than market value. This was immediately dubbed "mark to model" instead of "mark to market." There was no such relief for homeowners who desperately needed their mortgages marked to model too.

The story is incredible, unbelievable, but true.

Some new home mortgages started to become available in 2010. Perhaps lending remained slow because there were more shoes to drop. Maybe the banks knew something we didn't know. What could it be? Some said another flood of foreclosures was coming. Maybe there were more asset-backed securities based on commercial properties or credit cards. Auto loans might start to default and force another cascade of bank failures. But there was no sign of such things. Bank lending was anemic because demand was poor. Businesses held onto cash, layoffs continued, and consumer sentiment was in the dump. Investors knew it was better to buy something at the bottom rather the top, but perhaps it wasn't yet the bottom.

An article in *The Economist* magazine pointed out that this behavior by both banks and consumers was an example of extreme Liquidity Preference, as Keynes would have put it. I could understand why consumers were scared; many had lost their jobs and more were afraid of losing them. So why were banks still acting terrified? I could only make some guesses. First, many of them were nearer to failure than we realized. A misstep might finish them off. Rumors told them that other banks could be close to the edge too. Would you lend to someone who might be about to go belly-up?

Second, the economy might not have completed its crash. Unemployment was still high. The official unemployment figure (U3) was at 9.4 percent but the more inclusive index (U6), which included discouraged workers, was at 16 to 18 percent. Jobs were being lost at a rate of about 500,000 per month during the first quarter of 2009, slowing to about 230,000 per month in July. That was better, but far from a 150,000 monthly job *gain* needed to keep up with population growth and to keep unemployment from getting worse. Businesses would start to hire again only when demand returned and inventories were depleted. People were scared into saving, not spending, and certainly not splurging with credit. Demand was slow to return and employment was slow to recover. Inventories were a problem until 2012. We could have been in for a “lost decade” as happened in Japan, when its banks carried bad real estate loans and could not write them off without going out of business.

Wall Street fought Washington over regulation reform. Fed Chairman Bernanke publicly stated he would push for “no more of too-big-to-fail.” He wanted a Federal agency empowered to take over financial companies, not just banks, that were about to fail; pay off their creditors, sell their assets and clean up the mess with taxpayer money if needed. It would be paid for by fees on all financial transactions and modeled on the way the FDIC handled failed banks. The idea was to prevent the failure of a large financial firm from bringing down others like dominoes. Bernanke’s difficulties were immense because of the vested interests opposing him and of international complications. He did not get what he wanted; he got the Dodd-Frank Financial Reform Act of 2010, a complicated stitch-up that only a Congressional committee could love.

By 2014 the signals were still mixed. Indicators showed that we were past the bottom and a recovery was happening. It was to be expected that lagging indicators like unemployment and consumer sentiment should still be bad, and they were. The recovery was more slow and dragged out than predicted. But lagging indices rule the roost in politics because they show how badly people are hurting.

This Great Recession, according to the economists and pundits, amounted to “only” a 3.6 percent contraction, not much deeper than those in the 1970s (3.1 %) and the early 1980s (2.9 %). We reached the bottom, turned the corner as they say, and were well into recovery by 2010. The leading indicators were present: the stock market was rising, industrial orders and home purchases were up. Green shoots were everywhere. No sir, this was not your granddaddy’s depression at all, but a bad recession and a good recovery. Yet there was more to think about. There were losses in stock portfolios, but previous downturns didn’t force General Motors and Chrysler into bankruptcy. Those earlier recessions did not cause house prices to fall by 25 percent or more and cause losses of 40 percent in some retirement accounts. Those were not just ‘losses,’ they were body blows. The effects on ordinary people were terrible. When people lost their jobs they often lost their pensions and medical coverage, if any, and sometimes lost their homes with the equity they had built up. They could also expect to pay rent for years to come because banks wouldn’t lend to those who had defaulted on a mortgage. Prospects of getting new jobs at similar wages were poor. And, employers did not provide defined-benefit pensions any more. Even if they had, new employees would take years to become vested. How about medical insurance? It could be

bought on the open market if one had no pre-existing conditions or age limitations. It would cost an arm and a leg because one would no longer be a group member. In a bad recession you only lose money. Without money, a job, and your house being foreclosed, you really get behind the eight-ball.

Many were badly hurt by the crash but a few hit the jackpot, in the weirdest way. Michael Lewis tells in his book *The Big Short* [2] about how some saw the crash coming, shorted the market, and made lots of money while everyone else lost. A few individuals realized that the sub-prime mortgage market was headed for a disaster. The loans being issued could be repaid only if house prices continued to rise. Mortgage lenders were beginning to issue interest-only and Ninja loans, (no income, no job, no assets), scraping the bottom of the barrel. So, the market had to be reaching a top. These individuals bet against the sub-prime market by using credit default swaps, which were hard to get because insurers and brokers thought they were crazy. Their business associates thought they'd totally lost it.

Lewis described the thoughts of one of them. "Finance people are not dummies, they must see this. It's really obvious. Everyone is buying and selling these mortgages, repackaging and reselling them, but when it all stops anyone holding them is going to lose their shirts! Are all these people deluded or are they crooks?" Afterward it was seen that they were mostly deluded. They had either followed the trend or had simply not thought about it at all. Some banks had kept those poisonous mortgage securities in their own portfolios for their high yield and were now insolvent. Goldman Sachs had held the

stuff only to sell to others. Even Goldman was teetering on the edge.

Lewis said these few people were the sane among the insane. They were right but it was very hard on them. They had doubts. They developed health problems. Some were shunned by their co-workers. Literally everyone was against them. Authority figures like Fed Chairman Alan Greenspan had said everything was fine. The CEOs of monster banks regularly soothed us. It seemed to be a nationwide case of groupthink. During a mania, the pressure is to partake: "How can you afford not to get in on this; don't be dumb!" Instead they were ostracized. They were bank robbers! So many people had lost so much money.

Capitalism, which had miraculously done so much good and lifted living standards for so many people in so short a time, had also brought spells of devastation. They were like plagues of locusts that ate the crops. Why was this? No one knew. They just had to be endured like hurricanes and earthquakes.

A side note: [3] L. Frank Baum's 1900 novel *The Wizard of Oz* was written in a period of panic and labor strife – twenty people were killed in the Pullman Car Company strike. In Baum's novel, the yellow brick road and Dorothy's silver slippers were metaphors for the gold standard and the free coinage of silver. The munchkins represented the poor working class, the wicked witch stood for the business interests, and the wizard was that great deceiver, the President of the U.S.

3 – CLASSICAL BEAUTY AND THE BEAST

The free market! The concept is a wonderful and satisfying idea. It brings clarity to economic exchanges and shows how freedom and prosperity are related. It is a great achievement. With its simplicity and scope it has captured hearts and minds for over two hundred years. It shows how everyone can benefit when independent buyers and sellers interact in a free market, all looking for the best bargains and the most profits, each pursuing their own purposes. Everyone is satisfied with their bargains, the entire society benefits and, best of all, no one is trying to make it happen. As Adam Smith put it in his book *The Wealth of Nations*: [1]

". . . he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it."

Such a simple idea has amazing consequences. Prices find a level where buyers and sellers agree. No supervision is needed. The free market, lovingly described and explained by its enthusiasts, is at the heart of so-called classical economics. Smith's invisible hand seems so convincing that it surely must be true and apply throughout the economy. Whenever you buy or sell in your own interest it will have a good effect. How soothing to bad consciences! Smith gave commerce, from the nineteenth-century onward, a *creed*. British economist Joan

Robinson called it "the ideology to end ideologies, for it . . . abolished the moral problem. It was only necessary for each individual to act egotistically for the good of all to be attained." [2] It was a religious metaphor translated into the sphere of money and commerce. Free-market advocates easily adopted the belief that self-interested actions would benefit society as a whole.

I found that Adam Smith was, however, a much more wise and subtle thinker. His *Wealth of Nations* went far beyond his remarks above on markets. He wrote that a free market could not operate without the restraints on individual behavior provided by law and religion. He also noted that businessmen could hardly ever gather together without plotting to restrain trade. But the creed was his popular legacy. It is the foundation of the introductory course Economics 101 as it's taught today.

Another free market concept is that the supply, demand, and prices for goods are all related. Adam Smith knew that an increase in an item's price would decrease consumer demand whereas a fall in price would increase demand. Producers, on the other hand, would increase output and raise prices if demand strengthened. Prices would find a level where balance is achieved. The French economist Antoine Augustin Cournot first proposed this in 1838 but his work was forgotten for more than 100 years. The great English economist Alfred Marshall produced a fully developed mathematical theory of supply and demand in 1890.

The Law of Demand takes the consumer's point of view. It is an intuitive,

easily understood idea. People accept it without difficulty because it fits with their own everyday experience; it's just plain common sense. It's described to students of economics this way: When a graph is plotted with the price of a good shown on the vertical axis and its quantity demanded on the horizontal axis, their relation appears as a downward-sloping curve from left to right, called the demand curve. At the left side, the price of a good is high and consumer demand is small. If the price decreases demand will increase, so the curve slopes down and to the right. Demand is highest and price is lowest at the lower-right side of the graph.

There is also a Law of Supply which applies to producers. Since they can sell more of their products when demand is high they will increase supply and also raise prices to increase their revenue. On the other hand, if demand is low they will decrease supply and lower prices in order to maintain revenue. This makes sense from the producer's point of view. The supply curve for a product is a graph showing price on the vertical axis vs. the quantity that producers will supply at a given price. It slopes upward from left to right, from a low price and low amount supplied to higher prices as higher amounts are supplied. If consumers are not willing to buy, producers will supply less and reduce prices. However, if demand rises, producers will increase output and raise prices for greater profits. The supply curve goes up to the right as supply goes up and prices increase.

This tug of war between producer's profitability and consumer's frugality stops when the price rises to the point where demand levels off, and supply increases no further. At this particular price, the number of units consumers are willing to buy equals the number of units producers are willing to

supply. Economists call it the 'clearing price' and say that the market clears at this price. The supply and demand curves intersect at this price. This balancing of consumer and producer motivations is called the Law of Supply and Demand. It is a property of a free market, because it results from the decisions of many independent consumers and producers and is not dictated by anyone. The law of supply and demand is elegant. It is self-adjusting, automatic, and eliminates any need for interventions like subsidies and administered prices. It's a key concept of classical economics.

Adam Smith and other early economists didn't spell out details of how supply and demand operate in a real free market. Later economists pondered about the conditions needed for them to actually work. The actual way that prices were arrived at was hard to pin down and remained vague. Unsatisfactory gimmicks like an 'invisible auctioneer' were put forward, wherein a buyer and seller could arrive at a price in a market without doing face-to-face negotiations. How did they actually arrive at their bargain? More questions seem to hang in the air. Was it legitimate? Was it fair? Did one party have no choice or only bad choices? Was there money under the table? Would it matter if there were? What if the seller knew the goods were defective or stolen? How many prospective buyers and sellers were involved in a free market; were there one-on-one, one-on-many, or many-on-one?

It was recognized that real markets could not be free, in Adam Smith's sense, unless some pre-conditions were met. For example, both parties had to buy and sell willingly and negotiate in good faith. Of course, you may say, that's elementary, but this postulate had to be presumed without

question though the real world is full of cheats and scoundrels. The butcher must keep his thumb off the scale and the antique dealer has to pay a fair price for grandma's Chippendale. Furthermore, the ability to bargain means more than merely a desire to do so. Both buyer and seller must be "free to choose" in Milton Friedman's immortal phrase. They must negotiate on nearly equal terms with each other. A hungry man dealing with a grocer is not in that position, nor is a sick person and a doctor. Also, both parties must have the power to break off negotiations and decide not to buy or sell. It goes without saying, and usually does, that there is no hint of pressure or favoritism on either side. That's part of dealing in good faith.

I often read of the parable of the buyer and the seller, one on one, the village shopkeeper and a likely customer, illustrating price-setting in the marketplace. They haggle over features, quality, suitability, cachet, and yes, price. "Tell you what I'm going to do." "You're trying to squeeze blood out of me!" It's all very personal, not arms-length dealing. If they finally agree a price is set, a deal is done, and they're both satisfied. Perhaps not happy, but satisfied. A price has been discovered, as an economist would say. However, the price may be different if the customer and proprietor know each other well. Although they treat each other openly and honestly their social relationship may change the price agreed upon. Neither party is trying to cheat the other but new factors are being considered. What is an economist to make of this? Which price is the "true" one? The economist can't possibly understand all the thoughts, motivations, and haggling going on. The participants probably don't either. This is an enigma, a black hole, at the heart of economic theory. But all is not lost. Economic theory strikes back! This complicated situation is simplified by

introducing the 'rational economic man' *homo economicus*. This fictional person is presumed to ignore all those messy things and consider only the properties and the price of what he wants to buy. Social influences and unconscious motivations are wiped away by this masterstroke. Discovered prices collapse into a small range. If the hagglers can't agree on a price they'll break it off; no goods for the customer and no profit for the shopkeeper. But there is still no guarantee that negotiations with different customers will arrive at a single 'true' price. Something more needs to be added. Customers need some extra leverage. They should be able to try another shop that sells the same thing. That's it! Competition! That's the crucial idea. Now the consumer is king. He can pick and choose between retailers, comparing only their prices. He can pit one vendor against another and beat prices down. But this is still, not yet, really and truly, a free market because it is now a single buyer vs. multiple sellers.

A single buyer can force prices down against all sellers but they can't force prices up against him without colluding with each other. If they did so a many-seller single-buyer relationship would exist, called a monopsony. The reverse situation, with a single seller and many buyers, called a monopoly, wouldn't work either for the same reason. A genuine competitive free market requires many independent buyers and sellers for each good.

So, let's summarize the rules needed to create a free market out of the confusion of ills that commerce is heir to. Where do we stand thus far? We know that buyers and sellers should:

Enter into negotiations willingly;

Be honest and negotiate in good faith;

Be able and free to choose alternatives, or to quit buying and selling;

Negotiate on nearly equal terms of power, status, and information;

Consider the prices and qualities of products but not other factors;

Compete, with multiple buyers and sellers for any product.

These requirements permit a free market to operate once it exists. But if the law of supply and demand is to operate too, even more conditions have to be added:

Many transactions between many buyers and sellers are needed.

Buyers always know the properties of the goods sold and their current prices in the market.

Transactions are independent of one another. The result of one negotiation does not directly affect the outcome of others. (For example, people don't buy something just because its price is rising, as in a speculative bubble.)

Prices are free to rise or fall as needed to equalize supply and demand at all times. Prices are not "sticky," as might be caused by long-term contracts or government regulations.

The supply and demand of goods can always accommodate each other.

There are never excessive shortages or oversupplies. That is, there are never buyer's or seller's markets.

There aren't any goods available, in the mind of the buyer, which will directly substitute for the good desired. The buyer must compare vendors with each other for only the good sought. Such goods are called non-substitutable.

A good sold must be consumed by only a single user. That is, its consumption prevents use by other possible consumers. These are called rival goods. Examples are a tankful of gasoline or an ice cream cone. (Non-rival goods, like movies, can be used simultaneously by many consumers.)

Transactions are risk free and executed without fees or other extraneous costs. Cash on the barrelhead. No bounced checks or waiting until payday.

Transactions do not substantially help or harm other parties. There are no free riders or externalized costs paid by others.

And finally, there some necessary boundary conditions which are usually taken for granted:

The value of money is stable – inflation and deflation are absent;

The government properly and uniformly enforces the laws, particularly those of property and contract;

The economy is normal, that is, it's not in a state of rapid change. Inflows and outflows are steady, profits are good, and jobs are stable. An economist would say the economy is near equilibrium.

When all of these conditions are in place, a free market can exist and the law of supply and demand can function. The invisible hand can go to work. If consumers demand more, prices rise and producers increase supply. Production increases until demand is satiated and prices level off. If too much is being supplied, prices drop as producers get rid of inventory and consumers can afford to buy more. As a result, supply and demand meet each other. Trading and pricing become steady, or nearly so. Expectations are for more of the same. Any changes bring about forces which act to restore the status quo. This wonderfully balanced situation is what classical economists call 'equilibrium.'

It should be obvious that in the real world these rules and conditions are much too restrictive. It's nearly impossible to find any true free markets today. They are always being tinkered with. Governments support favored industries with subsidies and tax breaks. Businesses buy up their competitors. Conservatives are right when they complain, "let the markets alone so they can do their magic!" But free markets are merciless as well as magical. If a company provides a good or service that no one wants, it goes out of business. Workers lose their jobs and owners lose their capital. That's all to the good, say the free market theorists. It's Joseph Schumpeter's creative destruction in action, weeding out the losers. Disturbances work their way painfully through the system and gradually, in the 'long run,' the economy

settles into a new equilibrium. Prices, supply, and demand have all changed but everything is quiet again. Some have benefited and others have been hurt, but that's the way the free market operates. Problem is, it doesn't really work that way. Those with political or market power can protect themselves with tax loopholes, price supports, and so forth.

Real-world markets also have recurring "crises" of speculation, inflation, depression and unemployment which cause great distress. Unemployment has been a persistent curse since early industrial times. Classical economists acknowledge these faults but their theories do not, and they certainly can't explain them. Why do they happen? Where do they come from? Did they happen in the markets Adam Smith wrote about? Yes, they did. He didn't mention the Dutch tulip mania of 1637 or the South Seas bubble of 1729 which occurred prior to his book of 1776. Further, as had been noted in the 1800s by economists Sismondi and David Ricardo, and later by J. S. Mill and Karl Marx, wealth tended to flow from bottom to top in capitalist societies: from the tenant to the landlord, from the worker to the capitalist, and to concentrate in the hands of the rich. Marx believed this was the cause of capitalism's crises and predicted a revolution of the lower classes.

In his memoirs, President Hoover said he got the following advice from multi-millionaire Andrew Mellon during the 1931 depression: [3]

"Liquidate labor, liquidate stocks, liquidate the farmers, liquidate real estate. It will purge the rottenness out of the system. "High costs of living and high living will come down. People will work harder, live a more moral life. Values will be adjusted,

and enterprising people will pick up the wrecks from less competent people."

That was easy for him to say. Mellon was a self-made man, a powerful banker who financed companies in oil, aluminum and steel. Tycoons like him made grand plans that went far beyond making money. They created big things and broke rules to do it. The steel and railroad barons of the 1890s overwhelmed all competition with ruthless power. Empire and growth triumphed over mere profits. James J. Hill bought, bullied and built the Great Northern railroad. He named its premier passenger train The Empire Builder.

In the Great Depression many banks failed, large numbers of businesses went bankrupt, and unemployment rose to more than twenty percent. How could so much capital vanish and so many people be thrown into poverty? How did free market theory explain such a catastrophe? It could not. The economy was not normal. It was rapidly changing, violating one of the rules above. Could theory describe how the economy slid from normalcy into a crash? Neither Andrew Mellon nor any economist of the time saw the disaster coming or could explain it afterward. It was beyond accepted theory and notions of how the world worked. No wonder rich people gave such bad advice and ordinary people believed the rug had been pulled from under them. Instead of correcting itself, the economy had toppled over like a stack of bricks. There was no denying it had happened, but why? Where did the appealing simplicity of Adam Smith's butcher and baker, acting in their self-interest but somehow creating benevolence, go awry?

There was something conspicuously missing from the pretty picture of a free market. There was truly an elephant in the

room: there was no mention of loaning money at interest. No mention of *credit* at all. Free market transactions had no delays between purchase and delivery. Therefore transactions were actually barter using money as an intermediary. Credit was something new: I get the goods now and you get the money later. Handing over goods for a promise to pay is taking a risk – which free market theory does not contemplate. If a borrower defaults on a loan the lender's money is gone, vanished. In years gone by the scoundrel might go to a debtor's prison since failure to pay was considered a kind of robbery. Today, in our enlightened awareness, bankruptcy laws smooth out such failures. In either case, normal commerce is disrupted. Supply, demand, and price lose their tight connections.

If actual free markets don't exist, does that mean all markets are merely illusions? No, we have many markets around us that are alive and well. There are seller's markets for airline tickets, buyer's markets at yard sales, competitive auction markets for valuable paintings, brokered auction markets for stocks and bonds, regulated markets for liquor, unregulated black markets for scalped tickets. There are subsidized markets for ethanol made from corn and heavily taxed markets for gasoline and tobacco. Why don't economists explore buying and selling in more than the simple version seen in the textbooks? Maybe it's too hard for beginning students. Maybe it's unorthodox. In 1970 economist George Akerlof published a paper titled *The Market for Lemons* [4] exploring the marketing of used cars, where a salesman knows all about a car's defects and uses this information to advantage over an ignorant customer. Akerlof found that unscrupulous dealers tended to drive honest ones from the market – a kind of Gresham's law. His paper was of great interest and has been referenced many times.

But it took until 1970 (!), almost a hundred years after Adam Smith, for academic economists to inquire into markets having information asymmetry. That's terribly late; used cars are not novelties.

I think a broader model of negotiation in markets would help us understand how things actually work in the circumstances all around us. Isolated independent workers take the offered wage or leave it but unionized workers don't. Independent small businessmen pay the going wage or hire undocumented immigrants. Shoppers at the supermarket pay the listed price at checkout but they haggle with the fruit stand owner. Small customers pay more than big customers. Department stores give big discounts from posted prices without asking. These markets all behave differently. It seems their structures must be partly responsible but how, exactly? Economies can oscillate between boom and bust. There are "animal spirits" and "irrational exuberance." Then, sometimes, it's "over the cliff." Businesses and governments act unexpectedly or do too much, or too little, or too late. When there's real uncertainty no one knows what to do. If everyone sells stocks at the same time there's blood in the streets, as they say in Wall Street. Free-market rules go out the window. That's nowhere near a free market as classical economists think of it. It may seem like chaos but it's more likely operating by new rules which no one has figured out. Move along folks, no free markets here.

4 – MODELS – THE STYLE SHOW

Economists like to create ‘models.’ These are simplified schemes or representations of how the world works, economically. The models have to be simple because reality is impossibly complicated. Some are stated in words and some use mathematical formulas. Economic models fall into two broad types, one based on ‘equilibrium’ and the other on so-called ‘stocks and flows.’ Both gave rise to important variations over the years. Both were proposed early-on but the equilibrium models dominated economic thought for most of its history. Economic equilibrium meant that production and consumption, buying and selling, were steady and prices unchanging. If the economy were slightly out of equilibrium it was presumed to be merely shifting to another equilibrium. Economic variables would be nearly stationary with time. The goods sought by buyers would equal the amounts produced by sellers.

Equilibrium economic models assume that people act both rationally and independently when buying and selling and that the entire economy is based upon such exchanges between them. Supply and demand models, in particular, are equilibrium models and the most familiar today. They have shaky foundations because they often predict wrong results. Dubious or not, those instances where they’re nearly right are studied and something may be learned. It’s a good way, really the only way, to begin. We must start from where we’re at.

Beginning textbooks introduce students to an extremely simple model, the so-called circular flow in a village economy. Money passes from hand to hand in one direction

around a circle while goods and services go around the other way. It’s called “the great wheel of money” and shows how money and goods move through an economy in opposite directions. One man’s sale is always another man’s purchase. But one realizes that, in real life, money doesn’t go around in a circle – it moves in every direction through a network, from one hand to many other hands. Goods and services also flow through the network, opposite the money flow. Thus, the proper topology of even a small economy is a network with many nodes, each having connections to, (i.e., transactions with), many other nodes. Everyone buys and sells with many others. One man’s purchase is still another man’s sale but it doesn’t go in a circle. It goes every which way. Even in a village economy, every network node is connected to many others.

The idea of a network economy helps explain some puzzles. Keynes once outlined the process of producing a Chinaman’s shirt. It doesn’t start at a shirt factory but with the plowing of a field in South Carolina. Cotton seeds are planted and tended. The cotton is harvested and shipped by sea to England where mills weave cotton into cloth and factories make it into shirts. These are then shipped to Shanghai, bought by a merchant, sent inland by oxcart, and finally sold to the Chinaman. This is only one of the paths through the world’s network of manufacture and trade. South Carolina also ships lumber to New York. China ships silk to England. Branches of the network come together during shipping, and they diverge again in distribution.

Unless we make such networks the base of our economic thought, we won't get a grip on some economic facts that stare us in the face. For example: if everyone buys and sells from everybody else it's obvious that economic growth will help everyone: "a rising tide lifts all boats." But in the real world, why does economic growth help some people much more than others? A network model of an economy helps to explain this. Nodes representing individuals can be multiply connected within a local group but may be connected to only a few nodes outside the group. That is, the in-group can be well connected to each other but poorly connected externally. Such groups are economically almost isolated from others. Examples are ethnic neighborhoods and countries with little external trade. Further, large economic networks may have groups of nodes arranged in hierarchies. In such an economy, money and goods will flow up and down tree-like structures, going to and from their many destinations. Commodities, for example, move in a hierarchically connected economic network: producers to refiners, to suppliers, manufacturers, distributors, retailers and to consumers. Each level has many branches, finally going out to the twigs of separate users.

In our modern economy persons cannot possibly trade with all of those who make daily life possible, so groups of nodes – businesses, governments, etc. – have evolved to simplify the interconnections. How these structures are organized within themselves and with others has a lot to do with the stability and resilience of an entire network. When the structure of an economic network is understood, the nodes and flows between them can be modeled and the behavior of the network under various conditions can be figured out. For large networks, this has to be

done by computer since so many parts must be tracked simultaneously.

The alternative stocks and flows model originated with the so-called Physiocratic theory of the economy proposed in 1758 by a Frenchman, Francois Quesnay. It was an attempt to understand and explain economic growth by making a detailed diagram, called the *tableau economique* or economic table of who produced what, who bought and spent what, and with whom. In the physiocrats' formulation, the great sectors of the economy – farmers, merchants, artisans, and large landowners – bought and sold from each other. Goods and money passed between them as described in the economic table. Remarkably, the physiocrats were able to show that reinvestment of capital was necessary for economic growth and that investments had diminishing returns. It was a very good start but was superseded by the influence of Ricardo and others in the later 1800s. Supply and demand ruled thereafter. It was too bad that such a promising beginning was forgotten for so long. The stocks and flows model reappeared only much later, evolving from practical problems in manufacturing.

Stock and flow models are familiar and useful to factory owners and retailers who are concerned with inventory turnover and efficiency. They consider their inventory to be a stock, an asset which costs money every day they hold it. They also think of production and sales as flows into and out of inventory, generating expenses and income in proportion to their rates of flow. Their economic model, when drawn on paper, shows boxes representing stocks connected by arrows representing flows. An example would be a stock of iron-bearing rock buried in the ground that flows from a mine into a stockpile of ore,

which then flows via a railroad to another heap in Pittsburgh. It then flows via a conveyor belt into a blast furnace then flowing out into ingots of steel. These are shipped, i.e. they flow, to mills and factories. Parts are manufactured, stocked in warehouses and then flow to more stocks elsewhere. At every stage – factories, warehouses, distributors and retailers – stocks are held and flows are passed between them via trucks, railroads, and ships. This kind of model is very complicated but has big advantages: it is definite, can be specified precisely, is easily handled by computers, and can be tracked as it develops through time. On its face it says nothing at all about how supply matches up with demand or how markets operate.

Both kinds of models have theoretical problems. Supply and demand types consider money to be unimportant since it's treated merely as a medium of exchange. Stock and flow models treat money both as a stock, (an asset or store of value when held) and a flow, (a medium of exchange when moving from place to place). Economic activity is always changing among the sectors of the economy and throughout the seasons. Suppliers try to match demands but never quite do; someone is always over or under the target. In supply and demand models this continual shifting is hard to analyze so economists deal with it by postulating that the economy is at equilibrium, i.e., by assuming that supply always equals demand and everything is settled down. This hypothesis is absolutely necessary to supply-demand models. It may be a good approximation in some real life situations but not in others. So by assuming the economy to be at equilibrium, economists can form models that get results some of the time. The stocks and flows model, on the other hand, does not require the equilibrium assumption. The shifting tides in the economy can be followed

as they happen, even when way out of balance. Credit and debt are not considered in either model so the interactions of goods, time and money never appear. Some argue that any realistic economic models would be so complex as to be impossible to handle, but this isn't so. Models need to be developed to the point where they reasonably correspond to the real world, but then further elaboration can stop. They may be far too complicated for mathematical solutions but that's where computer simulations step in.

Equilibrium and stock-flow theories each have their own domains of usefulness. In equilibrium models the intuitive self-correcting balance of supply and demand is apparent. Mathematical calculations can link economic variables to each other during equilibrium and small departures from it. Stock-flow models, on the other hand, have no need to balance supply with demand. They can model non-equilibrium states, that is, how economic networks change as goods and money move from place to place. Varying demands and shortages shift flows to alternate suppliers. Prices change. Slack periods cause forced sales and bankruptcies to develop. Stock-flow models can also deal with new technologies which are an important factor in economic growth. New competitors may arise in the network. A cheaper way to produce something or the invention of a Next Big Thing will add new nodes and branches to the economic network. Other branches of the network will die away, obsoleted, victims of creative destruction. This shifting, growing, declining, ever-moving nature of our economy is normal today – it is what we live with – and it's never in equilibrium. This kind of model, it seems to me, best fits the amazingly complex and fluid economy that we live in today.

Recently, because computers have become cheap, Australian economist Steve Keen hearkened back to Quesnay's *tableau economique* and created a stock-flow computer model of a multi-sector economy without assuming that its variables would come to equilibrium. But then he added a credit mechanism: he added a banking sector which could loan to and take deposits from the other sectors. [1] With this in his model, money flows and trading volumes between the sectors could be advanced or delayed. Business cycles, booms, and busts became possible. Keen found they indeed happened in his simple computer simulations. Incomes rose and fell. Some profited over others. Sometimes bankruptcies occurred. These changes were not seen, were not even possible, in any equilibrium model. His model economy didn't shift from one equilibrium position to another – it could go along steadily but then move abruptly. His work was an advance into new economic territory. Keen had made a real breakthrough. For his unorthodoxy he was pushed out of his position at the University of Sydney: the entire department of economics was abolished in order to accomplish it. But I guess it's the old story; the old guard stamps out innovation.

Another variation on a stock and flow model was proposed by Treval Powers in 1996. He wrote a book out of dissatisfaction with textbook macroeconomics, which he studied after a career in the cement business. He approached macro with a new model based on a Composite Producer and a Composite Consumer which together form the economy as a whole. He realized that these composite entities are effectively immortal, cannot plan ahead, have no intentions, accomplish contradictory things simultaneously, but yet have exact and definite values for all variables like Output, Wages, Purchasing Power, etc., at

every moment in time. Government statistical publications, quite accurate since WW-II, allow him to dissect and test his ideas.

Powers based his model on a circular flow – the Composite Consumer buys (and provides funds plus a profit) to the Composite Producer, who returns goods and services to the Composite Consumer. By itself, this is only an uninteresting closed loop. But he added in leakages to the flow of various kinds. On the inflow side are industrial raw materials and energy. The important leakages are on the outflow side: industrial waste, losses of money due to individual hoarding, maldistribution of income, undistributed corporate profits, destruction in fire, flood and war, bank failures, bad loans, market crashes, fractional bank reserves, monetary restraint by the Fed, and funds flowing overseas into Eurodollar and other markets. Anything that subtracts from the flow of funds from the Composite Consumer to the Composite Producer will cause growth to slow.

Powers' model violates Say's Law, in which supply and demand are always equal. It therefore allows for involuntary unemployment or excess capacity. He did not consider additional cases such as widespread outsourcing of jobs to foreign countries, credit failures or runaway inflations. He did not mention Keynes. His model also told him that prior to 1961 money withdrawn by the Fed to cool the economy was rapidly restored during recessions, speeding up recovery. After 1961, this process seems to have failed. He conjectured that the money withdrawn found its way into investments other than the national cash reserve, and wasn't available to the Fed for quick injection into the economy. It's interesting that this amateur model foresaw the policy of Quantitative Easing

(QE) that the Fed used during the recession of 2008.

Economists love to express their theories in mathematical form for analysis (and sometimes are accused of ‘mathiness’), but I don’t know if any of them have tried to ‘mathify’ Powers’ approach.

It’s easy to build models on stated assumptions but hard to find assumptions that are relevant to reality. Few economists see that equilibrium ideas take no consideration of time. They cannot deal with time-dependent things like debts, expectations, accumulations of inventory and plant, or durable vs. non-durable goods. Using money as a store of value as well a medium of exchange decouples producers from users and lets speculators into the circular-flow of money and goods.

The economy is a sea of conflicting interests, and its history matters. Most economists don’t want to discuss this. Its ultimate flaw is the classical assumption of perfect information about the past and future. The past is unalterable and is often forgotten, while the future is unknown and uncertain.

5 – THE ELEPHANTS GATHER

My wife Mary and I once spent a day at Chicago's Museum of Natural History. We'd seen a lot in the morning and were ready for some lunch. The grand stairway down to the cafeteria led through a large rotunda. We rushed down and made it just before closing time. Refreshed, we headed back for another go. We were astounded to discover there was an elephant in the rotunda, posed with trunk upraised. Not a dinosaur, but an elephant. In our haste for food and a place to sit, neither of us had seen it! How could we not notice? It was a moment of Zen. Yes, there was an *elephant* in the room; a modern proverb. And yes, it happens to others. In a televised Republican primary contest in 2012, candidate Mitt Romney was debating Texas Governor Rick Perry. At one point Romney said, "I'll bet you \$10,000." "I'll betcha ten bucks" would have been more like it. Millions of viewers sat up and noticed. The emperor was wearing no clothes. Some people just don't seem to get it. Why couldn't he see the elephant in the room?

And, it's not just politicians. For years, elephants have roamed the halls where economists hang out but have not been noticed. Two big ones were Emotional Consumer and Private Debt. And, of course, there was their disreputable cousin, Dirty Money. Him and his awful friends! It was best not to mess with any of them. Economists appeared to ignore them. Pretend that debts and assets always cancelled out. Assume that people made rational economic decisions. Believe that the books were never cooked. Well, not really, but good enough to work with. Economists knew about these elephants, of course, but they were over there somewhere – not around here.

What economists understood were really, really and truly free markets, and comparative advantage in trade between honest people. Little progress was made in tackling bigger problems or in predicting real-world outcomes until well into the 20th century.

On Black Monday in October, 1929, the huge elephant named Private Debt stirred himself and thundered through the economy on a rampage. Much of the money borrowed to buy stocks on margin couldn't be repaid when the market dropped, so it fell even further. The elephant's previous attacks had been hard to ignore but economists did so until the Great Depression arrived in 1930. So-called 'panics' had occurred before in 1873 and 1903. (The softer term 'depression' was coined in the 1930s.) All of them were like earthquakes – they just happened. No one saw them coming, knew why they happened, or what to do when they hit. American economist Irving Fisher had a moment of fame by remarking in 1928 that "Stock prices have reached what looks like a permanently high plateau." Poor guy. Afterward he turned around and published a classic paper on debt deflation, explaining how falling prices raised the burden of debts, forcing asset sales thus pushing their prices down further, causing a self-reinforcing downward movement. No equilibrium here. The Great Depression was so awful that economists had to think anew.

In looking back through this history, I had to ask how debt could continue to ruin businesses and entire countries yet not be noticed by economic theory? Empires have been built and destroyed by debt. It has fueled wars all through history with huge economic and social consequences. Debt is built into

today's economy and is necessary for its functioning. Nearly everyone recognizes this. Ordinary people use credit cards, auto loans and home mortgages. Businesses use bonds and loans for financing. Politicians rant about the national debt. Without debt the economy would be reduced to near-barter, with money merely assisting in the exchange of goods and services. How can economists believe that because all debts have matching assets, debt has no bearing on their economic models? I think it's because their models are static, frozen in time, always in equilibrium. The big Debt elephant is merely a taxidermist's exhibit, stuffed and posed with trunk upraised. It can be safely ignored. The time development of the economy remains unnoticed. But its condition depends upon its history and its future partly depends on where people *expect* it to go. Opinions and efforts push in every direction so no one can foresee the result. Experts point this way and that. There are many prophets and Cassandras. Mathematical models only churn out nonsense.

Another big elephant is the non-rational consumer. She buys what she likes at the price she likes. Next week she'll buy something because "it's a bargain at twice the price." Right. "I love it, I'll take it, how much is it?" A free market supposedly doesn't operate that way except when prices are rising, rising, rising. Remember houses in 2006? Willing buyers met willing sellers. All had perfect information about the market. None were forced to buy or sell. Demand for houses exceeded their supply but that didn't matter. Buyers wanted to flip houses, sellers to take profits. Everyone could make money until the music stopped, as they all knew it would. Theory says that rising prices should create more housing but this was not about living space. It was a bubble. Houses did

become bargains at twice the price. The same thing had happened with stocks in the 1920s and tulip bulbs in the 1630s.

Do people fail to calculate the best deal? Yes, all the time. Do free markets sometimes run wild instead of stabilizing themselves? Do economists realize this? Yes, and yes they do, but let's not get too complicated with the models.

The neer-do-well cousin elephant, Dirty Money, has now become one the movers and shakers in international trade. He prefers, though, to stay out of the public eye because that's the key to his success. Maybe up to half – half! – of all international transactions are involved with false, illegal or unreported wealth transfers using mis-priced invoices, tax havens, secret accounts, dummy corporations, hidden subsidiaries, etc. This tremendous amount of financial activity is used for many purposes, legal and illegal – holding profits offshore, transferring assets at desired prices, capital flight, hiding financial assets, money laundering, payoffs and kickbacks, drug running, arms sales, etc. Some of it is done by ordinary citizens and corporations, some by criminal enterprises and government agencies operating outside the law. A big reason that individuals use these hidden channels is to get rich and stay rich, secretly. Here's a current money laundering scheme: straw buyers purchase several nice homes and condos in Vancouver B.C. for millionaires in China at above market prices. The properties stay vacant. When later sold, maybe after appreciation, the proceeds are deposited in an American bank account, washed clean. An empty house can be kept as a bolt-hole when it's time to get out of China. There are now too many such houses in Vancouver. Their number has risen so high that the mayor proposed a special property tax on abandoned

homes. He says they are equivalent to blighted neighborhoods. Income tax evasion is relatively easy by comparison. Accumulating wealth overseas is the objective of these transactions.

Because international commercial flows of money have clean and dirty transactions all mixed together, their reported amounts and purposes can't be taken at face value. The international payments system treats them alike. It can't detect illegitimate ones, so we don't know how to find their drag on the economy. Economists certainly don't. So we'll just ignore them since they can't even be estimated, right? Perhaps under-the-table "fees" and differing amounts of corruption should be put into economic models as value-added taxes. Here's a kind of tax even a conservative would love – it never gets into the hands of governments.

It's easy to get excited about corruption on an individual level. It gets attention and indignation. A hundred thousand dollars is scandalous. The multiple millions that some rich people and government officials tuck away are political dynamite. Billions in dirty money are beyond imagination and invisible. The sewers of Paris in Victor Hugo's *Les Miserables* were invaluable to those who knew them but were invisible to respectable citizens.

These three: private debt, non-rational consumers, and dirty money are the big elephants in the room that economists feel free to ignore when trying to predict what the economy will do.

Why are there financial panics? Why do they occur only after memories of the previous one have faded away? Why do sales of red dresses improve when Oprah Winfrey

wears one on her TV show? How can unseen flows of money be understood when the hand is quicker than the eye? Perhaps economists really should give up on non-rational consumers, (there's no accounting for tastes), and leave them to the psychologists. But international money flows are surely part of economics.

For a long time economists wouldn't deal with credit and debt. As is common with shocking problems, the first stage in coping is Denial. It was thought that credit and debt could have no effect on the economy because loans and liabilities offset each other. One man's debt was always another man's asset. At the second stage came Recognition. Economists recognized that so-called debt instruments – pieces of paper that stood for loans, mortgages, bonds, and so forth – had lives of their own. They were bought and sold in financial markets while the debts they represented stayed attached to the debtors. Because the values of traded debt instruments changed with market conditions, bankers and financiers developed ways to evaluate them. They invented terms like Net Present Value, Declining Balance, Value at Risk, and others. These were continually changing but were, themselves, understood and predictable.

Economists as a group then entered the third stage, that of Confrontation. They knew about economic growth and the ups and downs of the business cycle, as they called it, and saw that both were connected with credit. They also saw that the sheer amount of credit dwarfed the money supply in our economy. Credit and debt had to be dealt with in economic theory but it was very hard to do. They were being created in huge amounts at every moment and then destroyed months or years later. In the interim, debt instruments were being separately bought and sold,

fluctuating with interest and default rates, and moving all around the world. They were never in equilibrium. How could one model that situation?

A few special cases could be modeled. One was debt deflation. If the total amount of debt in society, so-called aggregate debt, grew to be colossally large and then someone, somewhere, couldn't pay, a downward spiral could begin. Those who had over-borrowed might have to sell some assets which could start a wave of selling because many others were overleveraged too. Bankruptcies could spread widely with business failures, price reductions, layoffs, wage reductions and falling demand, all going down a steep and slippery slope. This self-perpetuating process had feedback going in the wrong direction. It could lead to a catastrophic depression. There was also an opposite model called a bubble – a buying craze – which could happen when the price of something rose steadily. Early buyers would make great profits. Others would pile in and buy, driving up demand, pushing prices higher, and they all would make fantastic profits.

A third special model was called “steady-state growth equilibrium.” Here it was assumed that all economic variables could change at exactly the proper rates to keep the overall economy growing at a constant rate. This was a very delicate balancing act. If population, prices, wages, profits, job creation, interest rates, inflation, business formation, technological change, imports and exports, investment and depreciation, money supply and credit creation would all move in proper balance with each other, and their rates of change were consistent and balanced on a knife-edge, it would be possible that the rate of growth of the entire economy would be

constant as well. It is a strange kind of equilibrium where everything is growing. It fits an economist's mind-set which sees any economy with stable and predictable variables as being in equilibrium.

A fresh view was introduced in 2008 by economist Hyman Minsky in his book *Stabilizing an Unstable Economy*. He proposed his ‘financial instability hypothesis’ outlining how the financial system tends to expand investment in good times, which gradually leading to overinvestment, then to more risky ventures, then to speculation, all ending in a crash. This process is similar to the normal business cycle where markets swing from boom to recession. Minsky's contribution was to include the finance sector's effect on the interplay between producers and consumers, showing that it amplified changes upward or downward. The booms and busts were bigger because of feedback from the financial sector. If a boom entered the speculative finance stage, which he called ponzi finance, the come-down would be severe – a crash not a recession.

Economics is now confusedly in a fourth stage: Rethinking. It is looking for a New Paradigm. This shift has been brewing for forty or more years, boiling up from below with dissatisfaction among younger economists and, surprisingly, neurologists who have been studying the brain's response to economic situations. Neither accept the hypothesis of *homo economicus* as explanatory of human behavior. In 2000 the economics graduate students at the Paris École Normale Supérieure signed a manifesto that objected to the “autistic” economics they were being taught. [1] It read, in part:

“Too often the lectures leave no place for reflection. Out of all the approaches to

economic questions that exist, generally only one is presented to us. This approach is supposed to explain everything by means of a purely axiomatic process, as if this were the economic truth. We do not accept this dogmatism.”

It created the so-called Post-Autistic Economics movement in Europe but it didn't catch on in the U.S. A few sympathetic economists and journals became interested in so-called heterodox economics. This term includes behavioral economists who believe that the rational utility-maximizer is not even a useful fiction, and the econo-physicists who look at today's economic models that are time-independent and say, “you've got to be kidding.” Another complaint of the heterodox economists is that the social hierarchy in the profession prevents new ideas from getting the hearing they deserve. Only orthodox papers done by mainstream economists get published in mainstream journals and, for now, it's staying that way.

New attitudes are growing. A few academics are grappling with the fact that economic variables are not independent and are also time-dependent. Economic variables are neither causes nor effects; they are coupled together. Price, supply, demand, and behaviors spiral together, around and around, on the way up or down. The debt-deflation and bubble models are in this category. Other sciences have developed ways to handle feedback processes like these in order to describe reality as they found it. Economics have not recognized the need until recently. Partly it was because reliable data weren't available – often there were no data at all. Controlled experiments couldn't be done. And, it was so *complicated*. Even if all the interconnected equations could be written down it would be impossible to solve the tangled mess. So it had to be simplified; i.e.,

the economy was in equilibrium, people were rational; all of the rules above. They are not correct but maybe they will get us somewhere. They've become orthodox and are now well past their “use by” date.

I think that changes are slowly coming. Not with slap-the-forehead ‘eureka’ moments, but with recognition that our current small difficulties are not so small: “Houston, we've got a problem.”

6 – EQUILIBRIUM IN ECONOMICS

A benevolent market, with goods and services exchanging between willing buyers and sellers, with prices and wages finding their own levels, including everybody with no one left out, is a nice model. But I've always thought it couldn't really work, not because of people's natural cussedness but because something didn't seem to add up. It didn't seem possible there could be a balance with the multiple actors of labor, resources and money, even in a simple economy, without creating unwilling buyers or sellers or squeezing some people out. I thought this, but I couldn't prove it. Economic theorists assume equilibrium as a starting point and avoid nasty things like proofs of existence.

I really couldn't imagine a simple system that would provide for sustainable economic growth, which appeared to be a non-equilibrium state. Something extra, outside the system, seemed to be needed. Some economists attribute growth to class exploitation, others to technical innovation or to cheap energy sources like coal and oil. Anthropologists point to culture – status, emulation, self-regard – as being the important factors for economic growth. All of these are entirely outside of the usual theory of simple economic systems.

It was agreed, though, that 'balance' is the first concept of equilibrium. The Scales of Justice balance when arguments are weighed. Forces are balanced if neither team can win a tug-of-war. All agreed, too, that many forces can be balanced all at once. The Eiffel tower would collapse if they couldn't. This kind of constant, balanced situation is called a "*static equilibrium*." Two additional ideas were needed to describe equilibrium *processes*.

One is where an overall situation is unchanging while some variables are not static but proceeding at constant rates. The other covers time-dependent processes where some variables do vary with time while the overall situation remains the same. They are called "stationary-state" and "steady-state" equilibria, respectively, and are often confused with each other.

An example of a *stationary state* equilibrium is a stream running into a pond, passing over a dam, and flowing away downstream. Water flows in and out at a constant rate, continuing day after day, and the pond's level doesn't change. Other familiar processes, such as a steadily rotating wheel, are in stationary states. Some need inputs of energy to continue. A candle flame is a stationary process. An empirical definition of a stationary state is that it isn't possible to tell by two observations which of them came first.

In a *steady state* equilibrium, things change with time. A swinging pendulum speeds up, slows down, and reverses. However, it's in some kind of special state because it always repeats its motion. There are other examples. A group of flying geese is in a steady state. The overall V-formation doesn't change and the group continuously moves ahead. Such steady but non-static, non-stationary conditions are called "*steady-state equilibria*."

All of these equilibrium states may or may not persist if disturbed. Some are stable, some are not. A marble resting at the bottom of a bowl is in a static, stable equilibrium. If moved slightly, it will roll back toward the bottom. However, if the bowl is turned upside

down and the ball is balanced on top, it's at a static, *unstable* equilibrium. A boulder can balance, unstably, on a mountain top or can roll down and settle stably somewhere below. Its resting place will depend on the path it takes. Both the starting and ending points are at equilibrium; the downhill plunge is not.

So what does all of this have to do with economics? It means a lot, unfortunately. The French economist Leon Walras introduced equilibrium to economics in 1871. It has been part of it ever since in spite of the doubts of some. He chose, without naming it, a stationary state. Thereafter, in economics, his kind of equilibrium has meant the condition where production and consumption are constant, buying and selling are steady, and prices are unchanging. Walras and others knew that such conditions were unusual but were often approximately true. When they did occur his analysis should apply. If the economy was out of equilibrium it was simply moving to different equilibrium. A curtain was drawn over the in-between moments; minor perturbations, ripples on the pond. Economic variables would be stationary with time. The price of any item would be such that the goods sought by buyers would equal the amounts produced by sellers.

Walras formulated his Law of Markets, stating: "The sum of excess demand of all markets (for food, furniture, etc.) will equal zero, whether or not the economy is in equilibrium." It implied that if there was excess demand in one market, there would be insufficient demand in another. From this he could show that by looking at all markets except one and find them in equilibrium, then the last market must also be in equilibrium. His "law" dominated economic policy development for fifty years, so that economists spent much time seeking to make it work and

wringing their hands when it didn't. The major problems with Walras's argument were that it assumed (a) perfect knowledge of markets and prices by all participants, (b) instantaneous, costless transactions between them, and (c) perfect competition, so that no factors of production could be manipulated, no prices could be fixed, and no supplies restricted by anyone.

During the late 1800s Walras's Law was criticized by economists but without any alternative proposals. It didn't seem to work in practice so they tried to locate market imperfections as explanations. But they all made a critical assumption, namely, that a national economy was the sum total of all marketplace activities and transactions. Thus Walras's Law represented an extension of Say's Law. For 120 years they were taken together to mean, though it was not proved, that there was a tendency toward a Walrasian equilibrium even if it didn't exist at a given moment. Then in the mid-20th century an unrelated mathematics paper unintentionally demolished that idea. When its result was applied to Walras's Law of Markets it proved that, even if all markets were in equilibrium, the situation was unstable. If changes occurred in one market then the others must change as well, thus disrupting equilibrium in all markets. It proved mathematically that there was no tendency toward Walras-equilibrium in economic markets. No wonder his Law didn't seem to work in practice. It did work in theory, though. The term 'Walrasian equilibrium' still appears in economic discussions today. It serves economists as a very simple model. They might as well be modeling a pin balanced on its point.

Walras was the first to propose how buyers and sellers in free markets with perfect competition will create equilibrium prices.

Equilibrium theory has been economists' touchstone, their bread and butter, ever since. Problems with Walras's theory were spotted early but they haven't been resolved, even today. Ever more sophisticated mathematics has been brought to bear, without much success in spite of the efforts of many. Walras believed that markets would settle at equilibrium but there are three basic problems which he didn't consider:

1) He never could show that a given market had an equilibrium; whether it even existed. This seems like a trivial point. We see markets around us that appear to be in equilibrium. But Walras's equations couldn't be proven to have any equilibrium solutions. So, what good are they to real economists? Even worse,

2) If his, or any other, equations describing the economy had an equilibrium solution, was it unique? i.e., is was it the only one? Some types of equations allow several, or many equilibria.

3) If equations describing the economy have one or more equilibria, are they stable? That is, if the economy moves slightly away from an equilibrium, will it always return?

These are seemingly simple questions that any theory of economic equilibrium ought to have taken care of long ago, but they are extremely difficult to answer. After a hundred years only the first problem, that of existence, has been solved, but only for some ideal circumstances not resembling a real economy. There has been no real progress on uniqueness and stability. Even so, the Walrasian approach remains the basis of equilibrium theory in economics.

"Equilibrium" normally means balance and steadiness; on an even keel. But specialists give ordinary words restricted meanings so they can be discussed without confusion. This is baffling to laymen, who see

such nit-picking as a lack of real-world experience. Every field has its own usages. All the sciences have shaped the word 'equilibrium' for their own purposes. Their experts are exasperated when other experts don't seem to get it. Economists appropriated 'equilibrium' to their particular needs and have also created more subspecies: Walrasian equilibrium, General equilibrium, Dynamic equilibrium, Dynamic Stochastic General equilibrium, GDP equilibrium, Partial equilibrium, and Price equilibrium. As expected, confusion results.

In the early days of the industrial revolution, factories and mines were filled with individuals ready to work for a pittance because they worked on farms for nothing. If they wouldn't take industrial jobs at subsistence wages, others would. This is even today presented in economics textbooks as a good example of supply and demand at work. A huge demand for jobs will drive wages down to an equilibrium level where workers will accept them, as predicted by theory. The process is logical, I suppose, as long as the supply of poor and desperate workers lasts. In the U.S. it has pretty much run out. Farmhands have long since left the farms. The poor whites of Appalachia and poor blacks across the South have gone north, gotten better jobs, and won't go back. It took a few generations and two world wars, and it's now finished. However, today's laid-off unemployed workers can't go back to the farm: the jobs aren't there anymore. It's not like the old days. Also, we now speak of jobs that "American workers won't do," meaning that they won't take dirty jobs even at decent wages. Those are for desperate uneducated immigrants, not for regular Americans. One ought to be able to recruit Americans for farm labor by paying them enough but it doesn't seem to work that way. Equilibrium seems to

be out of reach. These facts about the labor market are widely known and are failures of standard market theory.

Workers with differing skills supposedly don't compete to drive down each other's wages. A job market with separate compartments doesn't fit economic theory. But today there is not a single 'labor market' but many. There are different markets for skilled and unskilled workers, and special markets for special skills. Actors and welders don't answer the same ads. Yet, skilled workers often take unskilled jobs. Everyone's heard of the PhD driving a taxi. Better to work at McDonald's than not at all.

The first economist to publish a solid critique of economic equilibrium was John Maynard Keynes. His 1936 book, *The General Theory of Employment, Interest, and Money*, gave a formal basis for persistent unemployment in the labor market even while other markets were in equilibrium. Markets were supposed to set the proper price for labor but high unemployment during the Great Depression proved that they obviously did not. Keynes showed how a modern economy could operate indefinitely without full employment. He proposed that the government spend money to provide jobs, which was very contentious. Full employment didn't return until World War II with immense deficit spending by the government.

7 – SCARCITY, SURPLUS, AND CHOICE

When they began trying to understand trade between individuals in society, economists were strongly influenced by a philosophy called utilitarianism, developed by Jeremy Bentham 1780. He proposed that social arrangements should properly be made to provide the greatest good for greatest number of people. This was a radical idea at that time, a strong challenge to the belief that the lower classes existed for the benefit of the upper classes. Bentham aimed to eliminate such ancient privileges and positions.

A key concept of utilitarianism is Bentham's *utility*: the sum of one's pleasures and pains, broadly defined. Wealth, status, comfort, pleasures, command over others, *less* penury, toil, oppression, etc. Bentham assumed that rational persons would act to increase their pleasures and decrease their pains, and thus raise their total utility. In achieving the greatest good for the greatest number, some persons would necessarily be brought down and others raised up, but some might be left out entirely. He accepted this as a necessary result of his system. Bentham's utilitarian philosophy fit perfectly with the newly developing ideas of capitalism. Utilitarianism gradually grew into its dominant way of thinking: the inefficient will be weeded out, creative destruction will make progress, and some will be left on the outside looking in.

Scarcity:

Utilitarianism is all well and good as a philosophy, but its details are hazy. What does it mean in practice? The British economist Lionel Robbins was director of the London School of Economics from the 1930s

to the 1960s. He was a free market economist famous for his definition of economics: [1]

"Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses."

His definition has been boiled down to the common saying that *economic choices arise from scarcity*. A thing is scarce when there is too little of it for use; not enough to go around. Gasoline can be scarce if there is not enough for people's needs. Utilitarianism, capitalism and the free market require that people choose between scarce goods. But if goods are not scarce, such calculations go out the window and we don't know what to do.

Do you want a pickup truck, a luxury cruise and a down payment on a house? You don't have the means (money) to afford all of them? You have an economic problem. You've got some choices to make. Decisions like these are called microeconomic because they involve only a few individuals and businesses. However the big picture, the entire economy, the millions of decisions made every day, is called macroeconomic. It's concerned with the general problem, not yours in particular. How do people, on the whole, manage to do it? Are there regularities, patterns, rules, laws? Is it comprehensible at all? How does the economic system allocate things among various producers, their mix of outputs and their distribution? Resources, which economists call factors of production, are used to produce goods and services that humans want. Scarcity of resources can cause scarcity of goods and services. Without scarcity we

wouldn't be making difficult choices between various goods and services. There wouldn't be markets to distribute goods, and we certainly wouldn't bother to study economics.

Professor Paul Samuelson's old reliable college textbook has taught economics to a generation of students. He started with the fundamental assumptions that the supply of desirable goods is limited and that human desires are not satisfied with the goods available: [2]

"If infinite quantities of goods could be produced or if human desires were fully satisfied, people would not worry about stretching their dollars because they could have all they wanted . . . Moreover, since all of us could have as much as we pleased, no one would be concerned about the distribution of incomes . . . Prices and markets would be irrelevant. Economics would not be a useful subject."

How can we tell when are resources scarce? Ah, that's easy, one would think. They are scarce when sought after and will take effort, time or money to obtain. Resources available in huge quantities may or may not be scarce; grains of wheat vs. grains of sand, for example. The need for collectible postage stamps is never met so dealers search for old stamps and their prices go higher. Everyone can agree that stamps are scarce even if they don't care about them. We see scarcity when people line up for tickets or bid at auctions. If people merely believe that something is scarce, it may become so.

Economic scarcity pertains only to economic goods, that is, those that are bought and sold. In Adam Smith's time, in the 1770s, economic scarcity was the rule, a condition of life. One had to choose every day between clothing, firewood, bread, or beer. It was the

nature of things. Lack of money required choices. The operative word was "required," not the economist's mealy-mouthed phrase, "allocate between competing objectives." Classical economic theory taught that the prices of goods and services were 'signals' directing consumers how to allocate their limited purchasing power among their needs and wants. But how did they accomplish this? After all, tastes differed. What one person desired another did not. No one understood how individual preferences and decisions combined to make up the economy. To tackle this problem, economists borrowed Bentham's concept of a person's *utility* to be the bundle of his preferences. They assumed that if every person acted rationally to maximize his own utility then the sum of all utilities, i.e., society's utility, would be a maximum as well. This seemed to be a reasonable idea. Many theorems of economic behavior sprang from it, though paradoxes were found too. It got very complicated if people could substitute second-choice items for their first choices. The early economists knew their ideas were preliminary and hoped that they would be refined later. Unfortunately, they did not face up to Bentham's conclusion that some people would be forced out and left with nothing, with no utility at all.

The Italian economist Vilfredo Pareto proposed in the late 1800s what we now call "Pareto Efficiency." Rather than maximize everyone's utility, he suggested that the economy could arrive at a state where no one could become better off without making someone else worse off. That was a good idea but it still had problems. A complex economy might have several such optimum points, some with more total utility than others, or perhaps it might have no such balance points at all. Pareto never showed that his efficient states even existed, or would be more than

momentary if they ever occurred. We still have no way to work it out.

Dr. Samuelson's textbook also notes that scarcity still rules today:

"If you add up all the wants, you quickly find that there are not enough goods and services to satisfy even a small fraction of everyone's consumption desires . . . before everyone could live like a doctor or lawyer. And, outside the U.S., hundreds of millions of people suffer from material deprivation and hunger."

He's right – all of these wants can't be satisfied. His point is that they are far beyond the economy's capacity to satisfy so that society must figure out ways to produce things most efficiently and to best use its resources. Before the industrial revolution there was not much economic development from one generation to another. Happily, we're now in a new era. Some goods are indeed scarce, in the sense that choices must be made and dollars kept within budget, yet many other goods are not.

Surplus:

With surplus, there is more than enough to satisfy both needs and wants; there is a surfeit, an overabundance. *Economic surplus* is an oversupply or glut of goods and services that are bought and sold. It may occur for one or more products in a market or in several markets. An economic surplus means there is excess productive capacity due to overinvestment or inadequate demand. An economy-wide economic surplus, called a "general glut," where the supply of everything exceeds demand, was inconceivable to the early economists. They published books

arguing its impossibility. French economist Jean-Baptiste Say proposed in 1834 that supply would always create sufficient demand since money received from selling goods would always be used to buy other goods. His idea was called "Say's law" and it persists to this day in other forms. His contemporary Thomas Malthus argued that population would always grow faster than food production so that the masses would live at subsistence levels and demand would always absorb supply. Scarcity was the paradigm of that age. There were no theories that described oversupply, saturated markets, or excessive investment.

The possibilities of a general surplus were glimpsed by Henry George in his book *Progress and Poverty*, also by Ralph Bellamy in his fantasy *Looking Backward*, and more clearly by John M. Keynes's essay *Economic Prospects for Our Grandchildren*. Each of them predicted that general prosperity would be achieved one day. But surplus actually arrived for the American rich in the Gilded Age of the early 1900s. They reached high prosperity and lived extraordinarily well. Their contemporaries were disgusted with their extravagant lifestyles. Thorstein Veblen in his book *The Theory of the Leisure Class* used them as examples of what people did when possessed of huge amounts of money. He coined the phrase "pecuniary emulation" as they spent money trying to impress and outdo each other. Anything they desired could be supplied whenever they wished. Allocation of scarce resources? They never gave it a thought. What did govern their choices? Perhaps it was pecuniary emulation as Veblen thought or maybe, as F. Scott Fitzgerald wrote, the rich really are different from you and me.

Free market advocates have an appealing story about how markets work, of how multitudes of consumers, merchants and suppliers cause markets to respond. Adam Smith called it the guidance of an invisible hand. But in this story everything happens under conditions of scarcity. When there is a surplus, it doesn't go so well. Supply and demand, production and consumption, become unglued and have little to do with each other. This was a puzzle to early economists. Adam Smith, for instance: [3]

“The things which have the greatest value in exchange frequently have little or no value in use. Nothing is more useful than water, but it will scarce purchase anything A diamond, on the contrary, has scarce any value in use, but a great quantity of goods may be exchanged for it.”

Another example is a missing-market conundrum, the so-called Mother Problem. The mother of the household divides up the milk so that everyone gets a share – some for tea, some for morning cereal, some for grandpa's dyspepsia, some for making pudding, and some for the cat. How does she do it? Not with price signals, supply and demand, fear and greed. She uses her own judgment and decides day by day, allocating a scarce resource between competing needs. Surely this is economics, but there is no market at all!

Economics teaches that exchange in markets is the fundamental element of its science, its basis. Individuals and businesses come together in the market to buy and sell, to fulfill their needs and wants. But it struck me that “exchange” is not so simple. It includes buying eggs at the farmer's market but also includes selling the family silver. Each puts different motivations upon buyers and sellers. We have a host of pithy sayings about ordinary economic transactions. They

come from real life and don't refer to free market exchanges at all. Think about these examples:

“It was a steal.” “He had me over a barrel.” “I paid too much but I got it.” “We came out even-steven.” “I had him right where I wanted him.” “He was happy, I was happy.” “Never give a sucker an even break.” “We shook hands on the deal.” “Take it or leave it.” “When I saw it I had to have it.” “Yeah, I bought it, I owed him one.”

Do these maximize economic utility? Only if one defines it to include human feelings. Unless this is done, classical economic theory is seen to be too small and simple because it takes people to be robots. It presumes that people have money with which to make choices, they don't have enough money to choose everything, will actually choose one of the available alternatives, and that they know their preferences and will choose rationally. If all of this is true, then it's possible to use supply and demand schedules, consumer utility values, and to calculate the results, which are the consumer's “choices.” These are not forced, in the sense of being against the consumer's will; they are determined by equations. The consumer's will has nothing to do with it. This is a real embarrassment to economic theory, or ought to be. Free consumer choice is not possible in static models like these. Free-will choice can happen only in situations where more than one set of consumer choices is at least possible.

Some say that freedom of choice lies in the consumer's ability to set utility values. But that doesn't account for the irrational, emotional decisions that consumers make every day: “I don't care about supply, demand or price, I want *that* one,” or “I can't find what

I want anywhere!” Economists do know that consumer motivations go well beyond rational maximization. Greed, loss aversion, status, emulation, fashion and habit exist but they have no ways to deal with such complications. Also missing are the differences between free and forced choices, monetary and non-monetary values. Businessmen have left economic theory far behind. They invented advertising, layaway plans, and “buy one, get one free.” Even today, the businessman’s concept of a break-even point is beyond economic theory.

Choice:

There should be a better way to understand choices made under surplus as well as scarcity. New ideas are needed as wealth grows and spreads. Ordinary people today don’t have to choose between bread and cake. New thoughts about economic choice should have begun to stir during the time of Kings and Popes, and certainly after the Gilded Age. But it was hard to imagine. Adam Smith visited a pin factory and saw how dividing tasks among workers increased production. He didn’t foresee that there could be too much pin-making power; that someday a dozen machines could produce more pins than the entire British Empire could use. Today that’s called a buyer’s market, where demand is not sufficient to absorb output capacity at normal prices. If the market is competitive prices will be driven down and excess capacity reduced, though it could be restored if needed.

A surplus, an overcapacity, in nearly all markets at once is a different story. The U.S has almost reached this point. We have huge surpluses of wheat, corn and milk which require government subsidies to maintain livable prices for farmers. The capacity to

produce more burgers, TVs, autos and most consumer products, even buggy whips, could be brought online if asked for.

Ordinary people’s motivations change as our economy moves from scarcity toward general abundance and the privileges of aristocrats and the rich become commonplace. Economic choices become less necessary. Needs and wants blur together. There are real needs of course; people must have water but wine will do as well. Preferences become what really matter in everyday life. Dilemmas and forced choices fade under economic surplus because people can be indifferent. They can take beer or wine, or both, or neither. No matter. Only free choice, including the freedom to choose nothing, is viable under economic surplus. Forced choices couldn’t exist.

Free choice is thought to be part of both Adam Smith’s and current market theories. But things are different when bad choices are the only ones available. If there are only awful choices, market participants are damned if you do and damned if you don’t – caught on the horns of a dilemma. Consider the proverbial little old lady whose rent has been doubled and now must decide between bread and heat for her apartment. It is better to starve or to freeze? Marie Antoinette might say, “She has no bread? Let her eat cat food.” No one believes the old lady could go to the market and *freely* choose to buy cat food for her dinner. This classic example is supposed to put an economist on the spot but he replies that, after all, her choice is a choice; she has allocated her scarce assets between competing objectives.

In our time, in our part of the world, we can choose among what were once luxuries, like ice cream and pecan pie. In some places

production is approaching the 'general glut' economic theorists had declared impossible. How can this be? It is because capital has been accumulating and productivity rising. With technology accelerating and a population transition underway, a revolution in expectations is pushing us forward. If there are no major wars or disasters the day of a general surplus, not scarcity, may actually arrive. Many items in the market are not quite free goods but are getting close to it. "Chips with your burger?" As prices fall compared to incomes, decisions based upon scarcity fade away. "While you're at the store get bread, and get some cake too."

Economics would still be a useful subject and Dr. Samuelson would keep his job if human desires were never satisfied. Are people's demands for economic goods limited or unlimited? Economists tend to restrict their responses to this question to what seems conceivable in our current economy. I think they confuse a long sequence with an unending one – they confuse huge with infinite – because their imaginations run only so far. They have claimed that people's wants are unlimited in that they are open-ended. If some wants are satiated others will arise in an unending chain. A man once properly fed wants flavor and variety. When housed he aspires to a grander house, then a McMansion, then a palace. Once a world traveler, he eyes the moon. Imelda Marcos, onetime First Lady of the Philippine Islands, created a demand for shoes. She had over 2000 pairs. How many more did she desire? How many could she possibly have accumulated in her lifetime? Could her insatiable desire for shoes absorb the entire world's productive capacity?

Many believed Malthus but let's forgive 18th century England. It was inconceivable that everyone, not just the

gentry, could ever become well fed and secure. But times have changed. It is conceivable today because it has happened to a good part of the Earth's population. And also, in the rich countries people have smaller families when they're better off. They do it on their own without guidance from the state, from religion, or economic theory. It just seems sensible to them. As with family size, so too with other supposedly unending, insatiable wants. One description of the real state of human desires I've found is in Henry George's book *Progress and Poverty*: [4]

"Give more food, open fuller conditions of life, and the vegetable or animal can but multiply; the man will develop. . . . In other words, the law of population is in accord with and subordinate to the law of intellectual development, and any danger that human beings may be brought into a world where they cannot be provided for arises not from the ordinances of nature, but from social maladjustments that in the midst of wealth condemn men to want."

We are arriving in a new era. Today's real study should be about the allocation of ample, not scarce, resources. Psychology, history, politics and government are in the picture. This is beyond the purview of economics as it's now conceived. If people didn't have to make hard decisions, to scrimp, save and postpone satisfaction, there would be no economic problems. I'm afraid that bigger problems would arise instead. Quoting Aldous Huxley: [5]

"They will eagerly make themselves acquainted with 'the best that been thought or said' about everything; they will listen to concerts of the classiest music; they will practise the arts and handicrafts; they will study science, philosophy, mathematics, and meditate on the lovely mystery of the world

in which they live. In a word, these leisured masses of the future . . . will do all the things which our leisured classes of the present time so conspicuously fail to do.”

8 – MONEY

It was but last winter I came up to Town,
But already I'm getting a little renown,
I get to good houses without much ado,
Am beginning to see the nobility too.
So pleasant it is to have money, heigh ho!
So pleasant it is to have money.

– Arthur Hugh Clough

It's so much better to have money! One's desires can be indulged with safety, security and power. Having more money is good. But philosophers have always said that money is not real wealth. If it's not wealth, what is it? Its nature has been tangled, confused and argued about through most of history. Wild, conflicting attitudes exist between different people and from one era to another. Today it's the same as ever.

When I was ignorant about economics I was doubly ignorant about money. That wasn't a disgrace because I found that most others were in the same boat. Money seems to be one of the most confusing concepts in the entire world. Textbooks define money as "anything used as a medium of exchange, a unit of account, and a store of value." Examples are given of the things that have been used as money around the world. Cowrie shells were the strangest. As a medium of exchange money must be accepted by all. To serve as a unit of account it has to be countable and recordable as well. Handshakes won't do. And, if a unit-of-account money is to be a store of value, there must be certainty about its future value. Its purchasing power has to be stable. To us, living in a commercial society, all of this makes perfect sense. The textbooks go on to define ever-larger categories of money M1, M2, and M3 which

include everything we think of as money: coins and bills, checking and savings accounts, CDs, bonds and stocks, and institutional arrangements of all conceivable kinds up to transactions between governments.

These definitions lead us to think of money as a *thing*, a *substance*: a commodity you can spend like *water*; it *fills* your bank account. Gold, a commodity, was once officially money. "All the gold in Fort Knox" meant gigantic wealth. Coins were real money while checks merely represented money. This made sense because the precious metals couldn't be counterfeited, nor could cowrie shells, thus guaranteeing their stability and future value. But there are other ways of thinking about money. It took me a while to understand that money doesn't need to be treated as a substance. What, really, is a dollar today? What is modern money? It has actually become a unit of measure, like an inch or an ounce. It measures the value of commodities but is not one itself. It is insubstantial and immaterial. Money is now a type of credit. When we buy something we are indebted to the seller and we pay off with an equivalent credit – a bill, a check or charge card – expressed in terms of this intangible standard. A dollar bill itself is a promise to pay, like a private IOU. It bears the words, "This note is legal tender for all debts, public and private." It is hard for many people today

to understand that money itself is not the actual *thing*; a coin or dollar bill. Digital bits in a computer are money too. It's true. No one can see or touch these dollars of money. They, along with those we can touch, are promises to pay, to satisfy a debt due, for an amount called a dollar.

Looking at the forms of money today, one sees that they are all promises to pay. For example, John gets a haircut and owes Barbara for her service. He pays his debt with a personal check written: "Pay to Barbara, \$35.00" signed "J. Smith." The check is obviously only a promise to pay. But it's money to Barbara. She takes to the bank, converts it to cash, and uses that to satisfy another debt when she buys groceries. Later, John takes his girlfriend to the theater. When he buys tickets his swiped credit card is obviously only a promise to pay but the theater treats it as money. The box office's computer sends it to the bank's computer.

Money is not a commodity. It passes from hand to hand paying debts as it goes. There's the old story of how Alice checks into a hotel, paying \$100 to Bob the clerk. He uses the money to pay his tab at the bar and Charlie the bartender uses it to pay Daisy the barmaid. She then checks into the hotel and pays the money to Bob. Alice doesn't like her room and leaves, getting a \$100 refund from Bob. Everyone's debts are paid and no one has any more money than at the beginning of the story.

Both checks and credit card charges are forms of money. They *function* as money; they satisfy obligations, pay off debts. All forms of money, including cash, have the same purpose. All purchases including food, gas, rent, and borrowings, are debts incurred. They must be repaid either on the spot or later, with coins, bills, banknotes, checks, credit

cards, company stock, personal IOUs, etc. Anything that is *acceptable* as payment of a debt functions as money. It may not be widely acceptable but it is money to those who use it as such. It is their medium of exchange, their unit of account and store of value. Such money is an asset to those who have it. Gold bugs think they have the only true money. Financiers think the dollar, the world's reserve currency, is *de facto* money. But it is really anything that functions as money: gold, dollar bills, Argentine pesos, cattle, cigarettes, and yes, cowrie shells. Money is a many-splendored thing.

Money, though a promise-to-pay, has value. If it didn't it wouldn't be accepted in exchange for other things of value. One can't get assets for nothing, except perhaps by gift or inheritance. You must give up something in return. The money you used to buy a TV was usually obtained from something you sold or from labor you sold to your employer. You can also obtain promise-to-pay assets in exchange for another promise – a loan – a promise to hand over more assets at some point in the future.

A very important way of paying debts is to pay with the debt of a third party. Suppose I'm a bit short of cash and I get a friendly \$100 loan from my buddy, John. He's a good guy. I give him a note that says, "I agree to pay John Johnson or the bearer of this note \$100 on demand." Also suppose John has a \$100 debt at the corner tavern. John might attempt to pay his tab with my IOU. If the tavern owner accepts it then John has paid a debt with a debt. Once I have signed that note and John has accepted it, I have a liability and he holds an asset. And since it's 'payable to the bearer' John can sign it over to a third party. It is said to be "negotiable." If the tavern owner accepts it he becomes a "holder

in due course” of my negotiable liability. At that point, John no longer has a debt to the tavern. I do.

Where did the original IOU come from? I created it. I made a promise to pay and it was accepted! That makes my IOU real money, and at no cost to me – poof – it appeared out of thin air. There seems to be no limit to my ability to make such promises to any number of people. But making promises is easier than making them believable, and those who accept them will find it harder to pass them on to others. They must be able to convince others they’re credible. But no matter who is holding them, my IOUs are adding to the money supply and are circulating in the economy. By creating money out of thin air I’ve done everyone a favor. But I’ve also created liabilities out of thin air. I should remember that once I’ve made a promise and it’s been accepted, any succeeding holder of the promise has a legal claim on my assets.

If I can make money out of thin air surely Warren Buffet could do it too. Everyone would accept his notes without question. He’d be good for it, right? The trouble is he’s not. All the billionaires in the world put together don’t have enough money to support our economy. Sooner or later people would lose confidence and they wouldn’t be worth the paper they were written on. It was tried in the American West before the railroads had reached town. The local bank’s notes were the town’s money and it worked just fine. The banknotes were liabilities of the bank and it stood behind them. More banknotes appeared in town, out of thin air, when needed. They weren’t good in the big city but that didn’t matter. When the railroad arrived everyone had to switch to dollars, to real money, government money that could be depended on. Lots of little banks

went bust. The U.S. dollar was backed by gold by the constitutional amendment of 1787. It gave people great confidence in the dollar and stabilized its value.

Counterfeit currency is another kind of money made out of thin air, not worth the paper it’s printed on. But it functions as money, and is thus real money, until it’s no longer accepted. Large amounts of counterfeit money can destroy a legal currency which is why the FBI and Treasury Agents react quickly. In earlier times counterfeiting was a hanging offense.

An international gold standard for monies was established in 1900 in order to manage the currencies used in international trade. Gold was specified as the common store of value. Every national currency had a gold-price and could easily be converted to any other by comparing their gold prices. Currencies were said to be convertible. They were backed by gold and were as good as gold since they could be sold for gold at any time. This was a comfort both to bankers and the man in the street. The system improved trade because it eliminated haggling over exchange rates – one need only check the latest quotes from the London foreign exchange market. Unbalanced trading flows between countries were settled by offsetting flows of gold between them.

The international gold standard worked for many years. It was good for trade-surplus countries like Britain which accumulated huge gold reserves. It was not so good for trade-deficit countries which lost gold. It was best to be a trade-surplus country, or at least to have balanced trade. A trade-deficit country would sometimes devalue its currency (change its gold price) to be in a better trade position, causing other countries to do competitive

devaluations, leaving no one better off. It's not possible for everyone have a trade surplus at the same time. The gold standard would be ideal if all countries had balanced trade or if surpluses and deficits did not become chronically unbalanced. In the real world it never happened because some countries were resource-rich while others were not. The gold standard lasted a long time because the supply of gold rose fast enough to accommodate the world economy's need for it.

The international gold standard was abandoned during the 20th century because it pinched in too many places. There was no grand switchover moment – first one country and then another dropped it. The United States did so in 1971 and all currencies became non-convertible, i.e., no longer exchangeable for gold. Exchange rates between currencies then floated; they varied from day to day, sometimes from hour to hour. Depending on the time of day one had to consult the Forex markets in London, New York or Tokyo. The dollar became a 'fiat' currency, to the great distress of the man in the street. The same was true of every other currency.

The change from convertible to non-convertible currencies affected how governments were financed. Today's heated arguments about the U.S. government's debt and deficits arise from a misunderstanding of this change. Many feel that the dollar is still somehow fixed as if on the gold standard; that there are only so many dollars to spend so that the government budget must be managed like a household budget. Expenses should not exceed income except in emergencies and the national debt should be paid. This was the case when the government's currency was convertible into gold. It had to balance its budget and when the money was spent there

was no more. To balance the books it had to raise taxes, cut spending, borrow, or draw down reserves. Under the gold standard its reserves were actual gold bars. If they were sold to raise cash, they were gone. Under today's non-convertible currencies, government reserves are different. There are no gold bars. The government now keeps its reserves in U.S. dollars, the most widely used currency in the world.

The United States creates its own currency, as do many countries. All of the U.S.'s debt to other countries is denominated in dollars and more dollars are always available since the Treasury can create them when needed. It doesn't need to pay off its international debts with Euros or Pesos. Other countries aren't so lucky. Most of their international debts are denominated in dollars. They can't print up dollars as the U. S. can. They have to scrape together enough dollars to pay debts owed in dollars. Another lucky break for to the U. S. is that many commodities, especially oil, are priced in dollars, worldwide. It would be inconvenient if we had to pay Dinars or Pesos when importing oil from Saudi Arabia or Venezuela, but there is no difficulty because oil is always traded in dollars. Companies and countries also trade in dollars with each other for many purposes, so that dollars are always in demand overseas. Huge amounts circulate around the world beyond the U.S. government's reach. Finally, some counties peg the exchange value of their currencies to the dollar rather than let them float. These factors make the dollar the world's reserve currency. The U. S. has world financial supremacy and responsibility, one of the reasons it has been able to build up its military power. Its national debt need never be paid off. Will it keep this position forever? Probably not. At one time Britain's Pound Sterling was the world's most powerful

currency and the sun never set upon the British Empire.

Money must have one further property in order to serve as a medium of exchange, a unit of account, and a store of value. There must be enough of it to meet the needs of the economy. As prosperity grows the amount of money in circulation has to grow in order to keep its value constant. If there is too little each dollar will buy more stuff so that, effectively, prices fall. If there is too much money in the economy prices tend to rise. Thus, for money to have constant purchasing power there must be a way to create or destroy it when necessary. Naturally there have been arguments about how this should be done.

Some believed that the government should create new money by simply spending it. The Congress should appropriate the funds and the Treasury should pay them out as authorized. Others wanted the government kept out of it. They preferred using the commercial banking system. Banks making loans to businesses and individuals should be the way to create new money. The compromise was the Federal Reserve Act of 1913: banks would loan as they saw fit but must keep ten percent of their capital in reserve. They could borrow more reserve funds from the Federal Reserve Bank but it could (theoretically) refuse to lend, thereby keeping a lid on money creation. Bank reserves are now held in dollars and are adjusted through a relationship between the Treasury, the Fed, and commercial banks.

It is true, as alarmists say, that banks create money out of thin air. They do it by making loans. It's called endogenous money creation because it happens entirely within the banking system. The government is not involved. A bank loan results in a liability for

the borrower and a corresponding asset for the bank. The money loaned to a borrower is simply credited to his account. It is new money since it didn't exist before. When withdrawn it circulates and increases economic activity. When the loan is repaid the new money disappears; it's removed from the economy.

There is second, exogenous, method of money creation which involves the banks and the government. The law requires a bank to hold reserve assets, cash in the vault so to speak, of at least ten percent of its total assets. If a bank has made many loans its reserves might be below 10 percent of assets. It can borrow from the Federal Reserve to top them up. Money borrowed from the Fed is an asset to the bank, a liability to the Fed. However, the Fed can cancel its liability by transferring money from the U.S. Treasury into its own account. The Treasury does not incur a debt by doing this because the government can't be in debt to itself. Money is thus generated in the bank with no offsetting debt anywhere. It's called "printing money." Amazing, isn't it?

It's easy to mistake what's happening when comparing the endogenous (banking) money creation with the exogenous (government) system. At the banking level, the basis for money creation is debt assumed by borrowers. Therefore, it is often thought that debt must also be the basis for the creation of money by government. But this is not so. Money created by the government goes into bank reserves and doesn't enter the economy until banks make loans. The credit which underpins economic activity is not created by savers' depositing money into banks which then enable them to lend. Instead it is demand from borrowers that create loans, i.e., money created from thin air and deposited into

borrower's accounts. Loans create deposits, not the other way around. This is opposite the usual view. By far the largest amount of bank deposits are bank loans made to corporations, who then withdraw the loaned money and cause it to circulate it through the economy.

If demand for loans is high a bank's reserves can run low but its policy is to always make more loans first and borrow needed reserves from the Fed afterward. The Fed will always accommodate a bank's need for more money. A bank cannot go out of business by running out of reserve funds. It can only go broke by failing to make a profit.

There remains another way of creating money: the government buys things. The Treasury pays out for government employee's salaries, supplies, military hardware, and innumerable public works. When spent domestically, these funds enter the economy as new money. This method of money creation is the prerogative of Congress as it wrangles over budgets and appropriations. It can vary wildly as the political winds blow. But this source of new money is vital to some parts of the economy. Millions of jobs depend on it.

As might be expected, there are several ways to destroy money, to remove it from the economy when necessary. The major one is, of course, taxes. The government can spend money into existence but it can also tax it back and remove it. Again, Congress decides these things, with much help from lobbyists.

The Fed can also destroy money when necessary by borrowing banks' excess reserves. When the economy is weak and banks are making few new loans, their loan assets are shrinking and their reserves may exceed ten percent of assets. They can then

loan the excess to the Fed, thus reducing reserves to the required level. The Fed has no offsetting debt, as described above. Money loaned to the Fed disappears from the economy.

A bank is a good place for your savings and checking accounts. It has an impressive steel safe and is a much better place for your money than under the mattress. How does a bank stay in business? It pays interest on deposits and it charges a higher interest on loans. Checking or savings deposits are really loans to the bank; debts which it will repay on demand. A bank could fail if funds were not available when asked for. It's a risky business, borrowing short term and lending long. To reassure depositors, banks once created images of solidity and safety with stone buildings and impressive furniture. Bankers wore dark suits and carried gold watches. A bank branch in a supermarket would have been unthinkable. But Federal deposit insurance changed all that. The threat of default was eliminated for small customers. Banks became safe places and hired friendly folks. Today, near-banks such as GE Capital and General Motors Acceptance Corp. issue credit but have no government supervision or backing from the Federal Reserve. Wall Street firms do the same on a larger scale, creating derivatives which are loans based on bundles of other loans. When Goldman Sachs nearly failed during the financial crisis of 2008 it reorganized itself into a bank holding company in order to get help from the Fed.

Here and now, in the 21st century, confusion about how banking works lingers in the public and even among some experts. It's incredible. Such misunderstandings should have been settled long ago but they persist. Books are published today with flow charts and tables showing how transactions move

through the system. Their authors lay out simple examples, trying to explain to the dummies who can't or won't understand. It's hard to believe. Why do economists continue to struggle with money and banking at this late date? I think it's because they have yet to arrive at a satisfactory theory of credit and debt. Banks don't fit into current theory because credit is their business, their reason for existing.

Our basic attitude toward money as a store of value is valid – until it's not. Money becomes useless in periods of inflation or deflation. When inflation is low, small changes in purchasing power are not even noticed. People suffer from 'money illusion.' If food or rent costs rise by a tiny amount per year we think everything is OK. Only grandpa remembers penny candies and dime comic books. But if inflation reaches two or three percent, wages don't keep up and we complain about the cost of living. At five to six percent the government "has to do something." Those in debt are helped while creditors lose their shirts. At yet higher inflation people convert their cash, savings and checking accounts into goods and services as fast as they can. During deflation it all goes into reverse. Money is king. Lenders get more than their money back and debtors are squeezed or ruined. Prices and wages fall but debts do not. Forced sales and foreclosures multiply. Demand falls and businesses fail. Both inflation and deflation strongly affect the economy because the value of money, measured in goods and services, changes. The normal uses of money fail. It is no longer a store of value. Money's promises to pay can't be kept.

But these are the sicknesses of money, not its strengths. In normal times people use dollars, which are promises to pay, just like Warren Buffet's IOUs. They go easily from

hand to hand because they're accepted everywhere. Buying and selling are so much easier when it's not necessary to bite the edge of a coin to "test its mettle." No one cares if a particular dollar has passed through a thousand previous owners. All dollars are alike, one is as good as another. They are said to be fungible. Commerce benefits enormously and society gets richer faster.

And finally, money must be *used* – it has to be in motion. It must circulate like blood in the body in order to keep the economy alive and healthy. Gross Domestic Product measures the nation's buying and selling and it would decline badly if the money didn't flow. Money under a mattress or in an offshore bank account is a loss to the economy. Economists measure money's "velocity," the average rate at which it changes hands. A higher velocity helps prosperity along. In a recession people hold their money back instead of spending it or spend cautiously so that its velocity slows. Either action makes the recession worse.

Truly, money is the lifeblood of our capitalistic society. But that's because customs, laws and regulations have developed ways which keep it steady and under control.

9 – WEALTH

Think of Robinson Crusoe washed ashore alone on a deserted island. He had no money or any need of it. At the outset he had no wealth but soon created some. He sharpened sticks and used them to spear fish. He wove leaves into a hat and built a hut to keep dry. He made animal skins into shoes, clothing, and an umbrella to keep off the tropical sun. Each of these items, made with Crusoe's own labor from the island's natural resources, certainly qualified as wealth if you think of wealth as being useful possessions. They were useful to him and would certainly be useful to others – they would have value in a society of castaways on deserted islands. He made them, but 'found' objects could be useful too.

But now consider if Crusoe were to spend some of his time weaving coconut fibers into a Union Jack. It could be among his prized possessions. He could count it as part of his wealth but it might be of no value to others. If he could trade with others he might increase his wealth. He would realize that wealth consists not just in useful and prized possessions but in tradable ones, too. Thus wealth, in a *single*-person society, could be anything that is valuable in any way to that person. It could be life supporting, helpful, beautiful, pleasing, comforting, or practical: no restrictions, because there's no accounting for individual tastes. However, wealth in a *multi*-person society would also include things that are wanted by other members of society. Items could become wealth if they were desired by and tradable to someone else. It's from this that the economic aphorism comes, "Value arises from Exchange."

Because of all this, wealth has no definite measure or steady amount. It has no clear definition. It is evanescent; it depends on people's whims and wants as well as their needs. It depends on their willingness and ability to trade with each other.

Economists like to start small and ponder wealth, money and economic growth in a group of just two persons and then try to generalize up to more complicated societies. On this basis a barter economy in a multi-person society can be erected. People can trade goods and services with each other without using money. But this doesn't eliminate the evils of a money economy because persons can trade in goods they have no use for. They could work to accumulate stocks of stuff of no value to themselves except for exchange, as modern retailers do. Or they could make loans of goods for trade using other goods as collateral.

Some items can clearly be possessed by only one person at a time and thus could be "owned," and might be traded between owners. Other items, such as river water, are more communal. Their ownership, if any, would have to be agreed upon with social or legal arrangements. Unclaimed ore deposits are wealth when appropriated, not before. In society, ownership is the key to wealth, the necessary concept. Wealth has no meaning without the agreements and customs that create ownership of things. To own something is to have exclusive possession and authority over its use, including the ability to deny its use to others. Our everyday meaning of wealth is founded on ownership: wealth is everything owned, less everything owed, at a given time.

Wealth has had a checkered career, as an idea. There has always been confusion about it. It seems clear enough in people's minds yet they have very differing opinions about it. Rich people think of wealth in one way, poor folks in another. At one time land was once the only true wealth but then gold was included. Herdsmen counted their wealth in cattle.

Land, as wealth, with its farms and forests, was once class-based because it belonged to the gentry. The 18th century mercantilists of England thought their nation's wealth was the gold stored in the Bank of England's vaults. Not so, said Adam Smith in his *Wealth of Nations*. A nation's wealth was not in gold or money, which are dead and unproductive, but "the annual produce of the lands and labour of society." That was a step forward. It marked a beginning in the understanding and spread of capitalism. But notice – neither the mercantilists nor Adam Smith included money as part of wealth. After them, society changed yet again. The industrial revolution created great factories, and money had to be counted as wealth. When an industrialist bought land from a country gentleman for its coal deposits, the gentleman received money and the industrialist got raw material for his factories. The gentlemen's wealth was now in money instead of land. When the all coal was burned up, where did the land's value go? There was nothing left but the factory's output of goods, a hole in the ground, and money, i.e., the industrialist's profit and the gentleman's proceeds from his sale. This period marked a momentous change – money was now conceived of as wealth. Adam Smith must have turned over in his grave.

So, wealth isn't simple. Millicent Fawcett, a 19th century suffragette, wrote:

"There are many excuses for the person who made the mistake of confounding money and wealth. Like many others they mistook the sign for the thing signified."

Time marched on and there were many more changes. Today 'wealth' seems to mean whatever the moment calls for. Sometimes it is everything one owns, borrowed money counting as negative wealth. Sometimes wealth is only what's tradable. Pundits, politicians and the man in the street all forge ahead with their own ideas. This isn't new. Economists have fiddled with the definitions of wealth to suit themselves, each starting over rather than building upon the work of their predecessors. Adam Smith, Karl Marx, J. M. Keynes, Milton Friedman all did so. It often depended on their politics. Still another variation was proposed by Carl Menger in 1892. [1] According to him, wealth is:

... the entire sum of goods at an economizing individual's command, the quantities of which are smaller than (his) requirements for them.

That's pretty abstruse. I don't know of any economists that eagerly pursued this breakthrough.

Ordinarily we use two slightly different ideas of wealth. The simplest is net worth: assets minus liabilities, that is, personal property, real estate, investments, money in the bank, cash in hand or under the mattress, *minus* mortgages, unpaid bills, taxes due, personal IOUs, etc. Then there is a larger view, which adds in saleable intangible assets like patents and copyrights. But I have found even wider, alternative ideas of 'wealth' that

sprout like weeds and might be wealth too, but it's hard to be sure. They can be possessed but not owned in a legal fashion; they cannot be sold, traded or given away. People may have clear title to them, so to speak, but they're not transferable. When we speak of a "wealth of knowledge" or "wealth of experience" we have this meaning in mind. Workers in our economy, from burger flippers to doctors, must have such intangible 'wealth' in order to make a living but it's not easy to give it a monetary value. For example, an electrician's license has value. It is like a bond that yields an income over time. Another example, "goodwill," is a monetary asset listed on a corporation's balance sheet. It's the estimated dollar value of good relations with customers and the community. If these went away the company would truly be poorer but no is sure by how much. The money-value of goodwill is just a guess.

One can point to further intangible assets which might be wealth but are impossible to quantify. Intelligence, talent and good looks are also possessed but non-transferable. They are unearned and undeserved but everyone knows how vital they are. They open the doors to opportunity and fortune. They are valuable but not value-able. It might be done by figuring out how much poorer one would be if they were missing. Such definitions are nearly useless to economists, so they use a narrower definition called economic wealth, which does away with such problems:

The economic wealth of an entity at a given point in time, consists of the ascertainable money-values of those things, material or immaterial, that are owned by the entity less those things that are owed, which can be legally transferred to another entity

through sale, trade, exchange, gift, inheritance, or other means.

Under this definition, economic wealth includes:

- Physical assets – personal property, real estate, business properties such as buildings and machinery, public properties like schools, highways and airports;
- Financial assets such as stocks, bonds and money;
- Intangible assets such as patents, copyrights, contracts, and leases whose value is created by accepted agreements in laws and customs.

And it excludes:

- Human skills and expertise;
- Anything owned whose money-value cannot be determined or reasonably estimated;
- Entitlements such as pensions and annuities;
- Free goods, which are owned by no one and have no price.

Economic wealth can be bought and sold. It is a *stock* of assets, not a flow of them. Its value is measured at a particular point in time because the values of assets change with time. It is *owned* by some entity. It is not vague but is somehow *countable*, and it can be measured with *money*. A dollar value can be assigned to or estimated for it. This definition of wealth leaves out free goods. For example, underground water is not owned but the right to pump it from a specific property is an

intangible economic asset which can be bought and sold.

Some don't like the concept of economic wealth because it's too narrow. Why must everything be reduced to money? It's a valid objection. One reason to measure wealth with money is to let different kinds of wealth to be compared and combined, and to change hands smoothly and easily. Purists think that only those things with a market value are really wealth and rule out touchy-feely intangible kinds. Others realize that the economy depends vitally on more than money but can't pin it down precisely.

It's important to distinguish economic wealth from the wider kinds of intangible wealth. Human skills and knowledge must be kinds of wealth because society would be poverty-stricken without them. If they are lumped in together with 'real' economic wealth the result is a 'fuzzy' kind of wealth. Intangibles like patents are economic wealth since they can be bought and sold, but skills lying between their owner's ears, like computer programming, are not. It's impossible to draw a line between economically important and unimportant skills, and they come and go with the times. We are reduced to hand-waving since this fuzzy wealth category is so open-ended. So why do we use it? Because it matters. As yet we have no proper words for "intangible non-transferable assets that are useful or valuable in some way." The best we've come up with is "human capital."

The United Nations has published balance sheets for twenty nations [2] grouping their assets under three headings: 'manufactured' or physical assets, 'human capital' or people's education and skills, and 'natural capital' such as land, oil and minerals.

If these categories were really comparable and substitutable then policy-making would become asset management programs. The UN does not include money and other financial assets as part of wealth in their reports, nor does it include unpriced assets like clean air and water.

10 – CAPITAL

Capital is somethin' else.

Capital is the soul, the engine, of capitalism. Capital is not merely wealth. It is wealth put to work to create more wealth. Without capital, the explosion of creativity and innovation, the dramatic increase in living standards in the past three hundred years could not have happened. Great wealth has often been accumulated in history but was spent on pyramids, palaces and wars. It required a change in thinking to deliberately use it as capital. At first, it was done by merchants and traders. It took a gradual cultural revolution to create capitalism, which changed the fabric of society and became a continuing, never-ending process.

Capital is wealth that is purposely used to create more wealth. J. S. Mill stated, "The distinction between capital and non-capital does not lie in the kind of commodities, but in the mind of the capitalist, in his will to employ them for one purpose rather than another." Today's economic actors count their capital very broadly. Farmers include their land; craftsmen, their skills; manufacturers, their factories; oil companies, proven reserves; peasants, seed corn; bankers, loans and treasury bonds. All such assets can be used to create more assets. I found out, however, that capital has become a very slippery idea. Modern ideas of capital have become far more sweeping and all-encompassing. Our concepts of capital have ballooned and now float in the upper reaches of the imagination. A penthouse apartment owned by a corporate CEO for his mistress might be counted too. He makes millions for the company so the apartment could be an asset helping him to

create more wealth. Perhaps. In its most extreme statement today:

Capital is anything that can be used to produce more of something that people want.

That's Far Out, as they say. Such a vague definition is practically useless. Some have tried to give capital a precise meaning that everyone can agree upon but without success. Others have modified its definition, trying to narrow it a bit. They understand that capital is not merely wealth. Wikipedia defines capital as follows:

(Capital is) "Human-made goods used in the production of other goods. Money is not considered to be capital as it is not used directly to produce any good. Some consider money, including borrowed money, tied up in a business to be financial capital."

Another definition is found at Econospeak:

"Capital, including machinery, consists of instruments of production utilized by human beings for the production of wealth."

I can't see how to sharpen up these statements without big caveats. Are only material things to be counted as capital? If things like patents can be capital, what immaterial things cannot be? What should be excluded or included? Must capital be only human-made or can other things be included? Is money capital? Are human skills capital? Questions like these persist but there are no agreed-upon answers. Businessmen, investors, and third-generation scions of inherited fortunes all have their own ideas of

capital, what it is, and how it works. They define it as they please, usually reflecting their attitudes toward capitalism and the economy. “It’s just simple supply and demand.” “Corporations are people too.” “Live off the income but preserve the capital.” Even economists who’ve grappled with the nature of capital can’t decide what kind of bird it is – if it walks like a duck and quacks like a duck – maybe it’s anything that flies.

Economist Thomas Piketty used the words capital and wealth interchangeably in his best-selling 2014 book, *Capital in the Twenty-First Century*. He defined National Capital as “the total market value of everything owned by the residents and government of a given country at a given time, provided that it can be traded on some market.” He further limited such ownership to only ‘non-human assets’ to exclude so-called human capital and slavery. Like him, many people from individuals to corporate CEO’s, think of capital as wealth that is marketable in some way.

In finance, capital is monetary investment in any form – stocks, bonds, derivatives, options, etc. Accountants further include physical items in capital: offices, factories, machinery and so forth. Businesses add intangibles into their notions of capital. Here are some kinds of capital that are supposed to be part of a business enterprise these days:

- Physical capital: farmland, buildings, factories, machinery and equipment, offices and furnishings, etc. They are also called capital goods or means of production. (Such goods are not used up in production, unlike raw materials.)

- Financial capital: bank balances

(including borrowed funds), company-owned stock, outside investments, long-term leases and accounts receivable; *less* liabilities such as interest and accounts payable, depreciation, amortization and taxes.

- Goods in process: partly finished goods in process or in inventory, crops under cultivation. (Finished goods are not capital because they are not capable of being used to produce something additional.)

- Intellectual capital: product designs, specifications, descriptions and drawings; patents, copyrights, brands, trade secrets. (Also called intangible capital.)

- Institutional capital: organization, management, sales, operations and workflow.

- Social capital: community relations, personal connections and trust, supplier relationships. (Also called relational capital.)

- Infrastructural capital: legal and educational systems, utilities, roads and airports, similar industries nearby.

- Human capital: employee skills, education, experience and personal qualities. (Also called individual capital or cultural capital.)

- Natural capital: clean air, water and other free public goods.

There’s no doubt that all of these can be “used to make more of something that people want” so they must be capital in the broadest sense defined above. But they don’t fit together; they’re incoherent and incommensurable. They can’t be combined to make a unified thing called ‘capital.’ Two units of employee education can’t be added to

three units of trademarks to make dollars. It's hard to communicate about them so assumptions or ideology are brought in to compare them, and everyone is happy with what they're accustomed to. Someday better ideas may be invented that all can agree on. Maybe the economists will do it. Their field is ripe for it.

The classical economists postulated that there were three Factors of Production: land, labor and capital. All three were needed to make a product, though it wasn't specified how it was done. Land included all the resources of nature: air, water, timber, oil, etc. Labor covered the muscle, skill and inventiveness of people. The classical economists defined capital in a way that kept it distinct from land and labor. It was held that:

Capital was used in the production of goods, (making it a factor of production), and,

Capital was *human-made*, (so that labor and naturally occurring resources were not considered to be capital), and,

Capital was *not used up* in the process of production. (Raw materials were used up, for example, but plant and equipment were not.)

With this clever definition one could determine what was or was not capital. A mill by a stream was capital: it was human-made, it was used, but not used up, in production. The stream powering the mill was considered land, not capital. The mill hands were labor. All three factors were needed to produce flour. With this definition one could also create sub-categories such as working and circulating capital, and also could make use of

mathematics. Economics took a great leap forward. There were skirmishes over the nature of money; whether it, too, was capital. At first it was only a lubricant improving barter by eliminating a "double coincidence of wants." It was a veil covering the details of trade, a mere medium of exchange. Money from the sale of goods was thought to be used only to buy other goods and was therefore unimportant. Then it was realized that money had to be capital. When used to finance commercial ventures it could generate more money. So it was brought into the fold and economics was further advanced. But debt, its evil twin, was left outside because "every man's debt is another man's asset" and thus of no effect. Economics was set back a hundred years or more.

All of the above term for capital; physical, financial, intangible, intellectual, social and human, are still used and abused today. Different authors and schools of thought are fighting it out. So be warned: when you encounter terms like bank reserve capital, market capitalization, capital expenditure or human capital, beware – they're not the same kinds of things at all. Human capital is still argued about; is it capital or part of labor? Intellectual property is a hot issue today, at the core of lawsuits and trade negotiations.

This confusion isn't new, however. The textile mill owners of 19th century England paid workers "what they were worth," i.e., not much. Their cost was simply the hours worked multiplied by the wage rate. But how about unpaid labor? The mills were supplied by slave-owning cotton growers in Georgia. Slaves were not paid. They were bought and sold in markets, and not used up in production. Thus they were like depreciable capital equipment with operating expenses – food and

shelter. That was a conundrum. Workers were labor on one side of the Atlantic and capital on the other.

Author Henry George, in his 19th century book *Progress and Poverty*, considered capital to be a subset of wealth. Capital is, “wealth used in the process of production, which includes wealth in the course of exchange.” This is quite different from today’s idea of capital as being any asset that will yield its owner a return. He noted that workers were normally paid their wages *after* they’d done their work, not before. The capitalist paid labor from the value of work already performed, which value has accrued to the capitalist who paid nothing out of his previous capital stock. That is, money paid to the workers was equivalent to the value the workers had contributed to the capitalist, for free: [1]

“ . . . so are we justified in saying that the laborer receives in wages the wealth he has rendered in labor. . . This universal truth is so often obscured, is largely due to that fruitful source of economic obscurities, the confounding of wealth with money.”

I doubt that Henry George ever heard of the squeegee men of New York City who ran out to cars stuck in traffic, washed and squeegeed the windshields, and then demanded payment from angry drivers. The squeegee men certainly got George’s argument – the drivers got added value in having clean windshields, so now the laborers should be paid, right?

Capital accumulation, also called capital formation, is an increase in a stock of capital. Capital is accumulated whenever a capital asset is created or acquired. Capital assets are expected to yield an income which adds directly to wealth. Part or all of the new

wealth can become capital if reinvested in new capital assets, thereby adding to capital formation. Accumulated capital is what distinguishes the rich from the poor. If capital accumulates, (not a sure thing), then wealth can grow because capital can compound on itself and grow ever-faster. Huts can become houses. Cow paths can become paved streets. Over the generations slow investment gets big results. A newsboy who steadily invests \$10 a week during his working life may leave \$100,000 to his children. Change accelerates as the capital stock grows. Entrepreneurs who start successful businesses can become rich and help others to do the same. Andrew Carnegie and John D. Rockefeller made millions in steel and oil. Sometimes capital is accumulated very rapidly. President Jackson’s Louisiana Purchase doubled the size of the United States. Capitalism has reduced poverty because it strongly encourages the accumulation of capital.

Productivity is the measure of labor’s output in a given time; the efficiency or effectiveness of labor in production. If more widgets are produced per man-hour, labor costs are lower. Profits can be higher, prices can fall or better widgets can be made. Society gets richer if overall productivity rises steadily, as it has. When capital is applied to technical innovations, productivity goes up by leaps and bounds. Shovels are much better than sharpened sticks; backhoes outperform hundreds of shovels. Economists differ on exactly how increasing capital adds to productivity. Neoclassical theory holds that the vital ingredient is technology. Discoveries such as steam power and electricity are presumed to be unpredictable events, coming out of the blue. If they don’t occur capital won’t grow and the economy will drift into a stationary state. If society is friendly toward entrepreneurs, that is, if they can make money,

capital will be directed to innovation and the lightning can strike again and again.
Education and organization boost productivity. A worker who can read produces more than an illiterate one. This is why education, organization, and machinery are all considered to be capital – they improve productivity when applied to labor.

11 – CREDIT AND DEBT

Credit makes the world go ‘round. It is far more important than money. The sheer volume of loans for businesses, credit cards, mortgages, bonds and other securities, dwarf the money supply. If money is poorly understood by the public, then credit might as well be in outer space. Books have been written on monetary theory but there aren’t any good credit theories. This is strange, since economists have been around since the 18th century. Even then overseas trade was financed with credit – bills of exchange passed between banks and brokers just like money. Except that they weren’t money, they were loans. Their values fluctuated and could disappear into thin air. If only they would behave like money!

Credit seems to be simple.
Paraphrasing Wikipedia:

Credit is any form of deferred payment. Credit is the granting of resources (money, financial or material) by one party to another where the second party does not reimburse the first party immediately, thereby generating a *debt*, and instead arranges either to repay or return resources of equal or greater value at a later date.

Simple enough! Lenders evaluate a borrower’s ability and willingness to repay the debt. Lenders thus assume a risk in giving credit and borrowers pay interest to compensate for it. A written or other recorded form of credit agreement is called a *credit instrument* and is held by the lender as an *asset*, while the borrower’s debt is a *liability*. The asset’s value, however, would fall to nothing if the original borrower were to default. Because the lender’s credit

instrument is an asset, it can be used as collateral against further borrowing and the creation of more credit instruments which can generate yet more lending.

But it gets complicated. What kinds of credit are there? How are they classified? Do they obey something like Gresham’s Law where the bad drives out the good? One early economist, Henry Thornton, grappled with the nature of credit. [1] In 1802, he concluded that credit in the economy expands or contracts naturally as there is general optimism or pessimism. He believed that the credit system should be managed by a central bank with its operations determined by judgment, not reduced to a rule. His contributions are accepted today but were forgotten later in the 1800s because Ricardo and his successors dominated economics with the idea of static equilibrium. Their methods ignored the distinctions between money and credit.

A. Mitchell Innes, an early 20th century English economist, took up the trail again. In papers published in 1913-1914, [2] he stated the case that money is actually a form of credit:

“... some would go so far as to suggest that the true nature of money is best described as a representation of the credit-debt relationships that exist in society.”

James Earley, a more modern economist, also noted that economists have treated credit quite inadequately. He coined the term ‘creditist,’ as opposed to ‘monetarist,’ and defined it as follows: [3]

“A creditist is someone who views the behavior of credit – the volume of borrowing and lending – as the fundamental variable in determining the behavior of the economy.”

He told of how Joseph Schumpeter worked for years on a book trying to formulate a complete theory of money and credit, but found it too difficult and never finished it. Earley quotes Schumpeter:

“Credit operations of whatever shape or kind do affect the working of the capitalist engine – so much so as to become an essential part of it without which the rest cannot be understood at all.”

Schumpeter tried, but Earley believed he failed because he assumed that credit and debt circulate through the economy as money does. The task is hard because credit does things that money cannot, and there are bewildering multitudes of forms of credit. Earley went on to say that credit, not money, should be the more fundamental concept. He believed that money is but a stepchild, a derivative, of credit. As Keynes later remarked, money alone as a medium of exchange is only one step removed from barter.

It amazes me that such important concepts as credit and debt have gone unresolved by economists for so many years, or rather, centuries. I think their bias toward near-barter static equilibrium has prevented them from analyzing the time-dependent interactions between loans, investments, inventories, durable goods, etc. They know *about* these things in great detail, but can't really describe their relations through time. Each of them changes continually and affects the others. A big reason that economists have neglected credit is because it's not possible to

include it in any equilibrium analysis. Credit and debt are never steady and stable. They are always rising or falling; it's their nature. But economists have contrived to omit them from their basic equations by noting that their net amount is always zero so, presumably, they can both be ignored. Which, of course, is ridiculous.

The credit system allows our economy to work far better than one with only money. Credit speeds up economic activity. People can buy immediately rather than save up for the purpose. Investment is quickened and the economy grows faster. This should be win-win except that credit deals, unlike money transactions, take time to play out. Credit-money loaned at one time is paid back later. The burden of a debt declines with time and so does the value of a loan. When a debt is finally paid they both disappear. But while they're alive circumstances can change. There's many a slip 'twixt the cup and the lip. Events and human motivations enter in surprising ways. Expectations of others' actions and of future events are hugely important. People act upon what they expect, and can change their plans. Expectation and confidence are powerful motivators. With high confidence, optimism rises. Businesses begin new ventures even in the face of uncertainty. Keynes called this urge to action “animal spirits.” Things proceed easily and everyone prospers. But with lack of confidence, caution is the watchword. Spending is cut back and debt paid down. Animal spirits are replaced by precaution. Sales drop, costs are cut, hours reduced, and employees are laid off. Investments are postponed. Demand falls and unemployment rises. What is sensible behavior for every businessman damages everyone.

It seemed obvious to me that debt could not be assumed away in economics. Ignoring it would be like ignoring money in politics or sex in advertising. It couldn't be done. Debt is absolutely necessary in a working economy. It is always present and has always been so. The earliest financial transactions we know of were debts marked on clay tablets in Mesopotamia, recording who owed what to whom. When the debts were settled the tablets were broken. This system was working centuries before coins were invented. Today a mainspring of the economy is missing from beginning economics textbooks. There is an empty chair at the table. Chapter 1 of any Econ 101 textbook should introduce Supply, Demand, and Debt.

It is puzzling that economic equilibrium sells so briskly while debt lies on the shelf. I believe it's because they don't mix; they are mathematically incompatible. One can't have economic equilibrium if some of the money circulating in the economy vanishes as debts are repaid. The imaginary economic man, *homo economicus*, can function only if all of his transactions are final, finished and done, once they are made. How can he rationally consider unknown future interest rates or the likelihood of defaults? If we assume economic equilibrium and rationality however, then economic equations can be solved, calculations made, and results published. The choice is obvious: take those postulates and run with them.

Debts and their matching assets do indeed cancel out. But there's something wrong with that argument. It assumes, implicitly, that it doesn't matter who owes the money to whom. If that were true debt wouldn't be a problem at all. After all, debt is money we owe to ourselves, so the overall level of debt makes no difference to aggregate

net worth – one person's liability is another person's asset.

The level of debt matters only because the distribution of that debt matters, because highly indebted players have different problems than players with low debt. And this means that all debt is not created equal. Credit instruments slosh back and forth. There is turmoil if heaps of assets pile up here and huge debts over there. Colossal volumes of credit are created to finance payroll, inventory, construction, trade, investment, speculation and more. Equally huge amounts of debt disappear as salaries are paid, sales are made, inventories reduced, bonds redeemed, stocks and real estate sold, and so forth. This immense churning of credit and debt, growing here and dying there on every time scale, is what mainly drives our economy.

Credit instruments, being assets, themselves serve as a medium of exchange and are actively traded in markets. They are not, however, units of account or stores of value like money because their values fluctuate with market conditions and interest rates. A credit instrument and its matching debt have the same nominal value when they're created but not thereafter. The debt liability is a fixed, known monetary amount. But when its offsetting credit asset is later bought or sold in a bond or mortgage market, for example, it may have a different value because people have differing opinions about the future.

Loans can be created using existing credit instruments as collateral. This layer of new loans may be used yet again as collateral for further loans. Pyramids of credit can be built upon shifting foundations of underlying debt. Recently a mountain of debt obligations, and derivatives thereupon, was erected upon a

base of millions of humble home mortgages. But it wasn't like the movie *It's a Wonderful Life* with Jimmy Stewart. When a borrower took out a mortgage from Jimmy's bank it was supposed that the funds came from the savers' deposits. Jimmy convinced the townspeople it actually worked that way. He prevented a run on his bank and saved the day. But nowadays it's different. Banks get loanable funds from the Federal Reserve, not customer's deposits. A local banker sells his mortgages to big-city banks who bundle them into interest-paying securities which are sold to wealthy investors. When a homeowner pays off his little mortgage, the big security holder loses a tiny fraction of his principal and must accept a slightly lower interest rate from that time onward. If all the loans in his security were paid off it would lose all value because the assets behind it have disappeared – but that's a chance he takes. That's how it works today. When good records are kept, the location and status of every mortgage is known and vigilant bankers follow up on any changes. The laws of ownership and legal title presume that this process is always followed so that disputes can be resolved.

Nowadays, as the saying goes, “this time it's different.” The bond market has become extremely large and complicated. Mortgage-backed securities are sold and re-sold to dealers, funds, overseas banks, and tax-sheltered accounts in Switzerland and the Cayman Islands. It's become impossible to keep up with the paperwork even when it's computerized, much less to track it into every corner of the world's financial system. No one cares if a jumbo bond loses a thousandth of a percent when a single loan is paid, refinanced, or defaulted on. How many of these are there, really, in a given ten-million dollar mortgage-backed security? It has lost some principal, but how much? No one

knows and no one really cares if a few are missed. Big trouble arrives, however, if large numbers of home mortgages go bad all at once. Almost all of them are current and up to date but no one can quickly find out which ones. Those mortgage-backed securities must be worth something but no one knows exactly how much, so they may become unmarketable. Some of the world's biggest assets can become effectively worthless while all the good mortgages behind them are still intact. It is no longer true that “one person's debt is someone else's asset.” Strange things do happen.

In a recession, new loans can become very hard to get while old debts stay the same. When old loans need to be rolled over, new ones may not be available. Businesses lay off employees and sell empty office space. Home foreclosures go up. Jobless people move in with friends. Things might be different if the original mortgages were held only between bankers and borrowers. There could be some hope of renegotiating terms and sharing the pain. It's not possible now, though, because bankers no longer have the loans. They've been sold onward, perhaps many times, and could be in the hands of someone in Singapore. Instead, a local banker has to repossess a house he doesn't want, a borrower loses his home and his credit rating.

In 1960s Japan it was the same but different. Their big banks made too many commercial loans during Tokyo's real estate boom. When the collapse came, office buildings lost their tenants and businesses defaulted but the Japanese banks did not recognize the losses. They held on to the loans because foreclosing would mean writing them off. Bad loans outweighed good ones and the banks were effectively broke. So they kept the worthless loans on their books even

though no payments were being made. It was “extend and pretend.” The loans’ book values were better than nothing. The papers representing them went into the bank’s vaults and didn’t come out. The borrower’s debts were destroyed but the lenders still held the offsetting assets. Again, one person’s debt didn’t equal someone else’s asset.

Finally, society can suffer greatly from a mal-distribution of private credit and debt even if though they remain balanced and net to zero. If many households get overextended on consumer credit – credit cards and second mortgages – and their monthly payments are hard to meet, they will cut back on expenses like new cars, travel and dinners out, thus depressing business. Layoffs begin if consumer demand falls far enough, worsening the situation. It could lead to a downward spiral into a debt-deflation recession.

All of these end-game scenarios are within the purview of economics even though it has no way to predict them. Economists readily admit that they are examples of so-called market failures, when economic variables go off the charts and the machinery runs up against the stops, as it were. But there’s no shame in that. Market theory isn’t perfect. Even the physical scientists are still searching for their Theory of Everything. Yet there is a bigger reason why debt cannot be taken into economics, why it’s treated like an ignored stepchild. Debt is also moral and cultural. It is a bigger thing than money and commerce. It encompasses human relationships like power and forgiveness. Debt has always been a way for some men to rule over others. It is much older than money. Debt has the larger meaning of *obligation* which establishes relationships between people. Most obligations are small and

unrecorded. Small gifts help people get along. Little favors matter. Tribal potlatches are big public rituals that hold communities together. Whether they are large or small, personal or public, practical or symbolic, all debts and obligations are meaningful and tie people to one another.

Debts payable in money have a harder edge because they are enforceable. The operative term is “force.” Some of the earliest writings we have about debt as money describe the evils of debt peonage. A farmer with a bad crop may pledge part of his land for a loan at a high interest rate which he can’t repay. Another bad year may force him to become a tenant farmer on what was once his own land with the debt forever growing, trapping him in debt peonage. This practice was so destructive to society that governments had to control it. Every major civilization had debt forgiveness policies, ‘jubilee years,’ in order to prevent peasant uprisings. Expensive funerals or dowries could also ruin a poor man. Even worse, some families sold their sons or daughters into servitude in order to erase debts. Why and how could they have come to this? En-force-ment is at the basis of monetary debt. Today, job losses, huge medical bills or predatory lending can force families out of their homes.

The idea of debt is woven into our culture in strange ways. Our everyday sayings show how finance, custom, and religion are mixed into it: you’re living on *borrowed* time; forgive us our *debts* as we forgive our *debtors*; a debt paid back is *redeemed*; we *owe* each other respect; it’s not *worth* my time; such a gift can never be *repaid*; you scoundrel, you’ll *pay* for that! Folk tales and scuttlebutt are full of it: what goes around comes around; you have to pay the piper; you get what’s coming to you, what you deserve, your

comeuppance. This applies to borrowed money, borrowed status, borrowed oxygen or energy from the biosphere, borrowed time you living on – all of them. In many religions sin has been equated with debt (owed to the devil) and is redeemed by acts of repentance, contrition, forgiveness by priests or by God. The coupled concepts of debt and fairness must be wired deeply into people.

What can economists say about this? Nothing, really. This entire domain of meaning is totally out of their reach. They meander on about people's "utility" and "revealed preferences." Such concepts are useful only when expressed as numbers, usually money. Contradictions spring up when economists try to squeeze the notion of debt into a free market. Exchanging goods for goods, or buying and selling goods with money, always presumes a negotiation between equals. But a debt is something else entirely. When a note is signed, the equality of the parties vanishes and there is an imbalance of power between them. The creditor has the upper hand; an asset. The debtor holds an obligation. The asset might be worth more or less than its face value but the obligation is always in full force. Assets piled on top of each other can grow to the sky. Piled-up debts can lead to bankruptcy or to owing one's Soul to the Company Store. Today's concept of a loan, mortgage or credit card as a *legal* obligation is very far from a free market. To make a credit system work there must be a State with enforcement powers. If some conservatives got their wish and the government truly 'got out of the way' our arms-length, it's-not-personal, credit system would stop functioning. A man's bond would only be as good as his word. But, that's how most people have lived most of the time in the world's villages and towns. *Personal* credit systems have been the rule among both the poor and the rich. People who know and

trust one another – insiders, clan members, friends – don't try to make money off each other with usury or petty cheating. A good reputation lost is hard to recover.

There are even bigger, awesome, kinds of debts: allegiances to King and Country; obligations to our ancestors, to the gods. These overwhelming, unpayable debts are beyond human capabilities and understanding. What is a person to do or think? Fear and trembling, abasement and sacrifice. An economist may laugh saying, "put them aside – what have these to do with commerce?" The answer is, of course, a lot. Such big ideas built cathedrals in Europe. Today our culture holds that though man was created in sin, he is an autonomous individual. Individualism is the basis of today's commerce. But yet, while buying and selling, people are thought to be guided by an Invisible Hand. Mr. Lloyd Blankfein, one-time CEO of Goldman Sachs, believed he was doing God's work.

Though economists try to put the big ideas aside, they are stuck with a technical problem: how do debt-burdened, out-of-equilibrium systems develop through time? Loans and liabilities spring into existence and slowly fade away. New money circulates in the economy but is removed at a later time. Some loans collateralize further loans and liabilities which themselves begin to slowly diminish. All the interconnected flows of money are continually changing with time. Where does the money flow? How does it rise and fall, here, and there? What happens here, or there, if there is bankruptcy or default over there, or here? Equilibrium cannot happen unless no loans are created and all existing loans are paid off,

Engineers handle this with something called Network Theory. It describes the time-motion of electric charges (billions of tiny electrons) moving through complicated networks of circuits that can store, delay, or resist their flow. Simple networks have simple behavior. Complex networks behave in weird ways. Currents can flow forward, then backward, build up and die away. They may show oscillations. Economists might create their own network theory to find the time-motion of money (billions of tiny dollars) flowing through complex economic networks. Such networks would store money, resist its flow, and delay it. But there is yet no such economic network theory. Concern with the time development of economic variables is very recent among economists. Those having mathematical skills don't seem to think it's important.

12 – WITH A HUMAN FACE

The more I study economics the more I realize its dependence upon philosophy and religion. People's world-view, their beliefs about human psychology and motivation are very important in economics. In classical econ-speak, man is presumed to be motivated by rational utility maximization; greed, in people-speak. This simple, one-dimensional, agent can be analyzed mathematically and is thus convenient. It's a drastic simplification but it is widely believed in our time. It's said that it's human nature to want more. But real economic behavior is "reflexive," to use George Soros's term, meaning that people's economic actions are based on their ideas about the purposes of others' actions. That is, what I do depends on what I think you're trying to do, and vice versa. Of course this makes everyday living very complicated. At the worst, it would mean a world of all-against-all.

Soros' theory of reflexivity begins with the point that our understanding of the world is imperfect, and the fact that we are part of the world is a real obstacle to the understanding of human affairs. People can react in two ways: they can try to understand the world or they can seek to change it to their advantage. People's intentions and expectations in social situations set up a two-way connection between their thinking and the situation in which they participate. This has an effect on both. It introduces an uncertainty into the course of events and prevents the participant's views from qualifying as knowledge. Soros calls this two-way interference reflexivity. Reflexive situations are characterized by a lack of correspondence

between the participant's views and the actual situation.

Soros contends that social events have a different structure than natural phenomena where a causal chain links one set of facts directly with the next. With social phenomena, participants seek to understand the situation (which includes both facts and opinions) and they also seek to influence the situation (which again includes both facts and opinions). This interplay intrudes directly into the causal chain, so that it does not lead directly from one set of facts to the next but reflects and affects the participants' views. An uncertainty is now present that is absent from natural phenomena.

People need beliefs, settled ideas, and stories about the way things are. Right or wrong, they permeate society from top to bottom. Shared beliefs about human nature and religion are at the foundation of any society. There are myths about raising children and bringing the rain; about who are neighbors and who are outsiders; whether the earth is round or flat, and what is and is not money. The point is that such questions are *settled*. They are about daily, practical, matters that are decided without argument. Others things may be questionable but are settled anyway. Perhaps we have such myths because of our imagination and self-reflection. We can perceive our own purposes and can guess those of others. We see that even the animals have purposes so we presume that the gods do too, and thus they intend what happens in the world. Leaping to a desired conclusion is so easy! It's hard to say "I don't know," or to give the Scotch verdict – "not proven."

Beneath the talk of supply and demand, rational actors and so forth, below the strata of macro- and micro-economics, lies a layer of hot lava where people live their lives. This is the domain of micro-micro economics where real things actually happen. Here are ebbs and flows, and sometimes eruptions. Human actions are what matter. Their tangled motivations produce the 'aggregates' that economists look at. Little wonder they don't drill down below their simplified hypotheses. Hitting lava would be too hot to handle.

When the enlightenment and capitalism began to bring big changes to the world, each generation had to deal with the stresses of life in new ways. "Lessons my mother taught me" seemed foolish. "Kids these days don't know anything." More recently, depression babies morphed into the greatest generation, then the silent generation with its men in grey flannel suits, followed by the boomers. They were superseded by "if it feels good, do it," then gen-Xers and the millennials. Those born in between, straddling these changes, were shocked and confused by it all.

Mary and I once visited the Minnesota History Center in St. Paul. While she researched family background I looked at the exhibit on "The Greatest Generation," the one that lived through the Great Depression, World War II and the prosperity that followed. The presentation was well done; the way we were and how we had all worked together. It was a bit depressing. Everyone had been behind the single goal of winning the war, down to the smallest detail. Men and women enlisted in the armed forces, housewives got jobs building armored cars or making bullets, children collected scrap paper and old lead toothpaste tubes. Rationing of gasoline and food was accepted with good humor. What a contrast to today's society! And, I had been

there. I had lived through it as a child. I knew it was all true. We were proud of it too. Could we become unified around a common goal only if there was war or a threat of invasion? Unlike mass religious movements with heresies and persecutions of unbelievers, here there seemed to be no dissenters from this cause, none at all.

After the war there was a huge burst of economic activity, an unprecedented boom, which was definitely forced from below. It had many causes such as the pent-up demand created by millions of returning veterans starting new households, the destruction of manufacturing outside the U.S., and the G. I. Bill putting millions of veterans through college. But there must have been more than that. There were also new attitudes and expectations. The soldiers who had returned from previous wars made no such impact on society. How did this generation become so focused and so cooperative when necessary? It wasn't just the attack on Pearl Harbor. The terrorist attacks on New York City and Washington DC in September, 2011, failed to provoke Americans into solidarity and resolve. Taxes were not raised and the President said to go shopping. That's what satisfied today's generation.

Then it dawned on me! The Greatest Generation grew up and was formed during the Great Depression. Most disasters will affect only a few, but the depression touched almost everyone. All of those people learned valuable lessons and learned them together, such as: 1) bad things can happen to good people, 2) life is not fair, 3) don't complain, things could be worse, 4) show up, help out, and do your best. These were in-your-face object lessons during depression times. As it turned out, everyone was prepared for the war;

both soldiers on the battle front and workers on the home front, as it was called.

In the great prosperity that followed corporations grew bigger. Some even got to be monstrous. General Motors, IBM and Sears became bureaucratic nationwide mega-corporations. Management arose as a profession in itself. Industrial efficiency was improved by scientific time and motion studies. Attitudes gradually shifted in society toward conformity. Growth became the keyword. Manufacturing's mission gradually changed from making things to making money, resulting in struggles with the growing labor unions. Over time a new zeitgeist of quarterly returns vs. labor peace was formed; a new balance that held for quite a long time. By the 1970s corporations were becoming multi-national and more hard-nosed, and labor's power was beginning to decline. Employees comfortable with the old order were stunned by the shift.

Here is a letter to Amy Dickinson's advice column: [1]

"Dear Amy: How does one get over the loss of a job they've held for a long time? After working for a major health insurance company for 28 years, I was told my job was being eliminated and shown the door. This was almost two years ago and I am still looking for a job. . . . I feel as if I have a knife in my back. . . . It's hard to understand how they can do this to a loyal employee who has worked for them for so many years. Shouldn't loyalty go both ways? . . . Was this really dirty on their part, or am I being too sensitive? Is this the norm for big corporations? I also feel like some people are thinking "she must have done something wrong." My confidence and self-respect are pretty much gone."

Amy's advice was, in part:

"Two years of ruminating about your former employer is a very long time to devote to an employer who dismissed you. It's as if you are still "clocking in." You worked at a job and were compensated for the work you did. Most companies see this as a fair exchange and neither reward nor offer much in the way of loyalty. . . ."

Good advice for the poor lady; brutal but true. Your employer is not your friend. In twenty eight years she'd not figured it out for herself so it came as an awful shock. The new metaphors were: restructure, get lean and mean, cut out the deadwood, bring in new blood. The resulting 'human relations' policies tried to avoid cutting off the dog's tail an inch at a time but produced the maximum amount of shock and humiliation when people were laid off. Employees were called into the personnel office in the afternoon, given written notice of termination requiring a signature and a check for wages to date. A security guard accompanied them collect their personal possessions, then to the door.

Human relations people said that this was the worst part of their job. It was extremely painful for them. They attended training seminars to help them handle the stress of this task and learn how to do it right; how to handle people who cried, pounded the table, had murder in their eyes or who slunk out totally defeated and sat on the curb for hours in full view of everyone. It was hard even without such complications. The security guard was embarrassed. Other employees had to watch yet keep their distance. "There goes Millie. She's going to have a tough time. If they do that to her they will do it to me too, so screw them." Morale suffered but life went on.

You might think with such misery on all sides, more creative ways of handling the problem would be found. Indeed, such horrible treatment didn't happen when mass layoffs occurred. Blue-collar and skilled-trade workers had no illusions about company loyalty. The layoff date and hour were known to everyone. Work was shut down under the eyes of extra hired guards. If the workers didn't clock in on the final day they wouldn't get paid for that day. They would be unhappy but they were all in the same boat and there's solidarity in that. They could be rehired when conditions were better. Upper management never suffered such humiliating hassles. Golden parachutes, stock options or buyouts gave them termination insurance. They too had no loyalty illusions. White-collar middle management and staff had the problem. Amy Dickinson couldn't explain this in a few column-inches.

The laid-off, the surplussed, the let-go workers in our affluent society ought to be treated in a more humane way. Paid employment, in our time, is not really needed for the production of goods but for the maintenance of income. This may explain why both management and ordinary workers keep their noses to the grindstone even as society grows richer. There is a lot of discussion about stagnant wages, layoffs, women working to support the household, concessions on pay and benefits, offshoring of jobs, and the gross disparity of rewards to CEOs. Some corporations have tried less painful cost-managing policies such as job-sharing or reductions in wages and hours. These may work if they are understood and expected to be temporary. Hiring freezes, attrition and incentives for early retirement are easier on people. Unemployment insurance can help many people, but it doesn't touch jobs lost to new technology. Retraining

programs aren't adequate because the total number of jobs, skilled and unskilled, has fallen. Karl Marx's reserve army of the unemployed is real and among us.

Some say it will "work itself out." There will be "winners and losers" during any adjustments. Displaced workers will find other jobs; the company that laid them off will be more competitive and the economy more efficient. Pundits who make such pronouncements have never been escorted out the door by a security guard. But when companies cut production during a recession the market is flooded with unemployed workers, and finding other jobs "soon" is next to impossible. Technological unemployment may hit only a few industries at a time so millions aren't laid off at once. Retraining and re-education might help. Individuals let go because of age, too-high salary or promotion beyond their level of competence are in real trouble. In these situations, finding any comparable position "soon" is unlikely.

Standard economic theory applies only during periods of "equilibrium" or gradual expansion when things are moving along at a steady pace. Industry is healthy, profits are good, there is nearly full employment and everyone is satisfied. There is normal churning in the job market with some workers laid off, some leaving for better pay, all rehired quickly because their skills are needed. But when dislocations happen – recessions, too many workers or obsoleted skills – then real, ordinary people bear most of the burden. They are the "losers." They may not be poor but they're poorer than before, and poorer than their neighbors. Their debts may force them into relative poverty even if they can find a low-salaried or part-time job. In our society relative poverty is defined by comparison with your peers. Can you appear in public without shame? Are your children

embarrassed at school? Do you have to ride the bus to Wal-Mart? It has nothing to do with begging on the streets or sleeping under bridges. During the Great Depression nearly everyone's standard of living dropped like a stone but there wasn't much relative poverty. There is not much sympathy in our culture for the losers. It's easy to blame them rather than offer compensation for losses that are not their fault. Today's social attitudes treat such help and support as gifts to the undeserving

We should remember that per capita wealth has gone up by a lot since that depression. Many average Americans today have cars and houses, not so fancy, but much better than those their grandparents had. They travel on freeways, not dirt roads. Their houses have washing machines, not tubs in the basement. We are fortunate. Rich people's cars don't go any faster. They may have private yachts; we can go on Caribbean cruises. It's not right to envy those who have more than we do. It's only a matter of degree, except for homeless people who have nothing. Don't be too hard on the rich. They are human too, and put their pants on one leg at a time. They have nice cars and houses since they can afford them. But actually, they're not that clever. They and their sophisticated financial advisors didn't see the crash coming and they lost barrels of money. Nobody likes to lose so much. But they didn't lose everything. They were hit hard but not devastated. They could keep their inner attitudes toward income and wealth. One of F. Scott Fitzgerald's short stories, [1] begins this way:

"Let me tell you about the very rich. They are different from you and me. They possess and enjoy early, and it does something to them, . . . makes them soft where we are hard, and cynical where we are trustful, in a way that . . . unless you were born rich, it is very difficult to understand. They think, deep in their

hearts, that they are better than we are because we had to discover the compensations and refuges of life for ourselves. Even when they enter deep into our world or sink below us, they still think that they are better than we are. They are different."

Having ample money gives the power of choice in everyday life. If you have nothing you have few choices. A rich man has wider choices, as you can imagine. "Should we get a new Lexus this year or take the yacht to Tahiti? Let's do both." A yacht and crew will sustain a hundred jobs for a year, maybe more. Investing in a startup company might result in 20,000 new jobs if it succeeds. Making campaign contributions to friendly Congressmen could affect millions for good or ill. A very rich man has left necessities far behind. His wants, what we call luxuries, support his life style.

Finally we have to notice that there are real living human beings in society who are focused on things beyond the grubby world. Maybe they're searching for God or writing the great American novel. Their concerns are outside of the economic sphere. There's the absent-minded professor who doesn't know when to come in out of the rain. There are other folks who stand outside of the economy. University of Wisconsin Professor of Education Dr. Constance Steinkuehler has studied the sociology of video gaming. I listened to an on-line lecture [3] she gave in 2010. It struck her that the social networks used by gaming devotees were free of the usual prejudices of race, class and gender. In their internet discussion forums they were anonymous. They interacted with no knowledge of each other's ages, locations, jobs, or positions in society – only their overriding interest in video games. She was impressed by their lack of absolutism and their

willingness to share data and ideas, and to use evidence-based argument as compared with surveys of American society in general. She wrote to some of them and was told, “We’re not being scientific; we’re just trying to cheat the game. ”

There is an amazing similarity between their anonymous discussions and those described by John Rawls in his book *A Theory of Justice*. In it, he describes a hypothetical method whereby people can talk and argue about ethics and justice in life situations without being actually, personally, involved in them. He postulates a condition he called the ‘original position’ in which people ‘draw a veil.’ They do not know, or remember, what their own station in society is or will be, whether they’re rich or poor, male or female, young or old, etc. Here in the original position they can try to agree about which outcomes are good or bad in a given situation, knowing they will have to live their real lives with the decisions they arrive at. He shows this procedure can lead to what he calls justice-as-fairness.

Here, in real life, we see the video-gamers acting much like Rawls’ philosophers. In the gamer’s version of the ‘original position’ they’re trying to agree on how to deal with gaming problems they will face. It’s uncanny. Without Dr. Steinkuehler’s work we’d never know that some video game addicts are living by high philosophical principles in a totally non-economic way. If you are “thinking like an economist” you’d think it was impossible, but it’s true.

13 – SUMMARY

What have I learned from my digging into economics?

First of all, don't listen to the naysayers. Capitalism is a success. Over the generations it has benefited millions; it's the best anti-poverty program ever discovered. Big changes happened in the last three centuries. Industry, trade, finance, invention, and development expanded as never before. The world's economy has grown faster than its population. Economic growth went up sharply and has continued. Wealth, incomes, and living standards rose and are still going strong around the world. Disease went down and population went up. Governments became less authoritarian and education more widespread. Slavery, the economic foundation of many previous societies, nearly vanished. This has been immense progress. There have been disasters, setbacks and dead ends but the trend has been upward. People's needs are slowly being met in many countries. It's foreseeable that someday there could be a chicken in every pot. And now changes are accelerating. Things are moving so fast today that it upsets many people; too much in a lifetime. Their world is turning upside-down.

Secondly, and on the other hand, capitalism has created staggering differences in wealth between the very poor and the rich, and smaller but unheard-of wealth inequalities between the rich and almost everyone else; just the things that Jeremy Bentham wanted to eliminate. In the times of kings and titled aristocrats such discrepancies were on open display as finery and huge estates. Today they are invisible – titles to real estate, control of shell companies and unseen overseas capital.

Third, every big step forward has caused upheavals and reorganizations in society. The grand sweep lurches upward, not in little increments. Every big advance has made society better off but has hurt many others. There have been losers along with winners. We couldn't seem to make someone better off without making someone else worse off. Pareto efficiency has been just a dream. Injustice and misery came along with the capital accumulation that relieved poverty. We who now live in comfort tend to think it was all worth it. We have forgotten how our ancestors struggled. Maybe they would have wanted to see the sparrows fed without having to feed the horses.

Fourth, there is another great fact about capitalism: it smashes up repeatedly. It has manic-depressive episodes, up and down. Hopefully a tranquilizer could be found but no one has discovered one. Many economic theories don't even recognize that the disease exists. They deal with the business cycle but not the violent crashes. They accept the one without question and don't really address the other. Some of today's economic theories are going to be abandoned as surely as the story about angels dancing on the head of a pin.

I believe that new paradigms will be pressed upon society by technology and cultural shifts. Some are coming into view. A big one is the automation of jobs. Work is now done by fewer people, raising their productivity and disemploying others. Look at what farm machinery did to agriculture: its productivity soared and millions lost their jobs but new jobs were created, as economists had

predicted. The oncoming loss of jobs due to automation may not be as self-correcting. In our market economy, jobs are the only way to distribute income to the masses. We will need emerging industries that can employ many millions of people, both skilled and unskilled, to support prosperity. Farming and manufacturing once did it but no more. Biotechnology doesn't seem to have that promise.

Income inequality is a related paradigm change. It's a slippery banana peel under society's foot. It's now become noticed, even in the mainstream media, that the distribution of incomes in the U. S. has gone far out of whack. The "99 percent" and the "1 percent" are now familiar terms. The rich make lots of money but now everyone is starting to realize just how much more. Some of those who've 'made it' are looking ahead and their vision is not soothing. They see storms ahead. America's work force will naturally divide. Income will shift even more toward the top. Globalization has already held wages down for people with routine skills while incomes at the top have skyrocketed, and the gap is expected to widen. Success in tomorrow's economy will require very big changes in education and politics. An interview with Mark Andreessen, a Silicon Valley venture capitalist, is an example of this outlook: [1]

"The spread of computers and the internet will put jobs in two categories. People who tell computers what to do and people who are told by computers what to do. . . . If you tell the computer what to do – product development, marketing – the last 30 years have been phenomenal. In the next 30 years it gets more extreme. . . . We're in a bubble for people with a non-Ivy-League, non-technical education. If you have a degree in English from a Tier B state school, you're not prepared. . . . Big companies are not

going to take care of you. . . . You can't let history happen to you."

I wonder, will it be a dystopia or a golden age? Wealth lets people live well; will they live wisely? The rich don't consume much more than the poor, certainly not in proportion to their wealth. There are limits to grandiosity. McMansions can only get so big. Will luxuries, consumerism and frivolous entertainments be the result? The poor will always be with us – will the prosperous retain the belief that the poor are undeserving? Keynes predicted the accumulation of wealth but didn't anticipate the modern preference for work over leisure; the need for human contact and achievement that's now provided by work. He also didn't anticipate the wide availability of contraception. Keynes was one of the outstanding social philosophers of the 20th century but no one could have imagined such astounding twists and turns.

Looking it all over, what is to be done in the world's economy today? Can booms and depressions be smoothed? Could wealth and income be spread more equally? Are there reforms or checks and balances that could help? I'm afraid that today's arguments about the minimum wage and financial regulation are only tinkering with minutia; fiddling while Rome burns. There are bigger problems. Outsourcing is pushing people out of work and there is no place for them to go. Machines need only a few people to tend them. Demands for energy and fresh water are beginning to dislocate the world economy. Some real limits to growth are coming into sight.

Big questions are being asked: is growth necessary for our economy to function? Can a growth economy operate when there are few young people and more

old people? Can mass markets exist in a service economy? Can consumer demand be supported if most people don't have a job? It seems obvious that people must have income if money is to keep churning. If they can't go shopping everything will stop. The so-called circular flow of money in the economy will halt. No one will need a production job if automated machines can make whatever is wanted. If no one buys anything nothing will be produced. Zero equals zero.

What would society be like if current trends in mechanization and automation were carried to their conclusions around the world? Many manufacturing and office jobs could disappear. We are drifting toward a new social-economic revolution. What's to be done? Instead of work defining a person's life, we ought to be thinking of avocations instead of vocations: full-time hobbies, travel, and chances to be-all-that-you-can-be. This may appeal to some, but not to all.

Many minds have been busy with the idea of a guaranteed basic income for individuals and families in the United States. It would be hard to accept in our culture. We shouldn't be concerned with the supply of goods and services but with the income to buy them, along with its certainty, purchasing power, and distribution. But the guaranteed income keeps coming back as a cure for the basic problem. Proposals have been made to give everyone a huge inheritance at birth, or provide everyone an annual payment, or perhaps just guarantee a small basic income to the poor.

If every person was granted an immense fortune at birth, far beyond his ability to spend during a lifetime, everyone's supply of money would feel as if it were effectively limitless like grains of sand at a

beach. Unspent money would be returned to a common fund at death to be re-issued to a newborn. This scheme would fail because such money couldn't be a store of value. People would realize that it was pointless – anyone could outbid anyone for anything – and everyone would switch to some other form of money.

Another idea was to give every citizen an annual bonus payment based on a natural flow of wealth as Alaska now does with its Oil Extraction Allowance. Other resources might be used for this purpose – natural gas, mines of all kinds, agricultural harvests or electricity generation. Industries already exist which are easy to assess and monitor. Other parts of the Earth's wealth are provided in huge amounts, such as oxygen emission and carbon dioxide absorption by the oceans and forests. Some part of each citizen's annual bonus payment could be based on these 'free' benefits which we are totally dependent upon. Annual bonus payments have the advantage that they could vary with the value of the currency, the value of the assets taxed, on inflation or deflation, and thus stay relevant over time. They are not big one-time payments that will tempt swindlers to cheat people out of their due and could not gradually be 'cornered' by a small group. Proposals like these would essentially be lifetime annuities where a reserve of capital provides a flow of income to those entitled to it. But we are not yet familiar with ways to monetize stocks of natural capital. A first step has been made with Alaska's Oil Extraction Allowance.

A means-tested guaranteed income was seriously considered in the U.S. in the 1960s but got nowhere. There was a good reason why. It was tried in 1790 as Britain's Poor Law. It was called the Speenhamland system and had very perverse effects. Karl

Polanyi described it in his book *The Great Transformation*. It guaranteed a very small annual income to poor families regardless of whether they worked or not, and had the effect of keeping them poor. Polanyi wrote that the system allowed employers to hire workers at well below a subsistence wage because they had a guaranteed basic income. Employers were happy to let the local parishes supplement low wages with charity. Thus Speenhamland effectively put a cap on wages. Poverty rates went up and income supports down. The long-term result was increased misery among the poor. In 1969, President Richard Nixon was mulling over his Family Assistance Plan. The proposal would have guaranteed a monthly income of \$1600 plus \$800 in food stamps to every poor family of four. When Nixon learned about Karl Polanyi's work he asked Senator Daniel Patrick Moynihan to investigate the historical accuracy of Polanyi's claims. Nixon was reportedly greatly troubled by the results. The Family Assistance Plan was ultimately defeated in the U.S. Senate.

There is now a plenitude of goods available and an incredible amount of choice among them. Many brands of every kind of food scream for our favor. There are grapes from Chile, chilies from Mexico, six kinds of bottled water, all for very good prices. The biggest fear in our society is not of a shortage of things to buy but of unemployment; a lack of income to buy things with. Some call this a prod to the lazy and indolent – get a job, you jerk. But when our present economy has spasms of severe recession how can you tell all of the unemployed to get a job? How can you believe that all those people are jerks? Unemployment insurance is inadequate and clumsily administered. Corporations continue to raise productivity by adding machinery and outsourcing jobs. The number of good jobs

continues to shrink. If companies can make good profits while there is high unemployment, consumer demand and the standard of living will go lower. Ever-falling domestic demand and production spells economic shrinkage, not growth.

Many businessmen wish that the labor market, like other markets, was more 'flexible' and would more quickly accommodate to current conditions. In their ideal labor market, when firms shed workers, other firms would rehire them within a reasonable time. This implies in turn, a belief in equilibrium economics – that the economy operates stably at a level where workers are employed practically all of the time and only a small percentage of them are jobless at any given time. Although economists teach this ideal they know it's a dream. If laid off, a 'reasonable' time to be re-hired has to be short since few workers have savings to fall back upon. Our economy can do this only at the peak of a boom with nearly full employment. It soon gives way to the so-called "natural rate of unemployment" of 5 percent or so, and often falls into recession with unemployment rising to 8-10 percent or more. Workers can wait for many months to be re-hired.

What's to be done about involuntary unemployment and the loss of an income to live on? That's the big problem for present-day capitalist societies; the ferment below the surface. There are books and articles being published on the miseries of the long-term unemployed, on how to compensate those thrown out of work by technological change, on trade deals, and the dangers of a slowdown in China. It seems clear that these are long-term problems. There is an aversion to 'welfare as we know it.' Speenhamland has been tried and found wanting. Some form of a guaranteed income seems to be inevitable if

our economy is to keep its extraordinary success and complexity. It will require wrenching social changes taking lots of time and it will have to be worldwide. There will have to be new attitudes about what 'human nature' really is.

So where do we stand?

Malthus made his famous prediction in 1798 that the world's population would always outrun its food supply. That catastrophe hasn't happened because of improved agriculture and because the poor, rising out of poverty, have had fewer children. This has already happened in Europe, Japan, and other rich countries. It has happened to the wealthy in all times and places. Contraceptives becoming available around the world will make it still easier in the future. If living standards for the poor keep improving, the world's population may stabilize and then decline slowly. The world's wealth may go up twenty-fold in the next hundred years if the population stabilizes. Who knows, technology might halt global warming and genetics may give us longer lives, free of disease and disability. Wise men, however, from the Buddha to Veblen, have always said that wealth does not bring virtue; perhaps it brings ease and improves the arts. Do we have another hundred years to see this vision come true? History is not too encouraging. Empires come and go, as witness the Egyptian pyramids and ruined Inca temples. The story remains to be told. We live in interesting times.

And then, there are the economists. I found out that, as a profession and a field of academic study, economics is in deep trouble. Economists are well paid for their advice but no one in a position of authority actually believes in them. Their advice isn't acted

upon unless it supports a preconceived purpose. If need be, another economist can be found. They regularly insult each other about their assumptions and calculations.

Comedians make jokes about their predictions. President Lyndon Johnson once said, "Did you ever think that making a speech on economics was a lot like pissing down your leg? It seems hot to you but it never does to anyone else."

How did economists get themselves into such a predicament? I think it's because they began with the philosophy that it is man's nature to act from self-interest during "truck, barter and exchange." Adam Smith knew better. In his book *The Theory of Moral Sentiments* he wrote that *sympathy*, the ability to imagine another person's point of view, to put one's self in someone else's shoes, was the basis of human nature. It was *sympathy* that made negotiation and trade possible. Economists continued to put self-interest ahead of sympathy so that, over time, academic economists became like some religious orders. The brothers instructed novices, granted degrees and published books of instruction, yet many of them had lost belief in their basic tenets. Their orthodoxies, frozen like glaciers, were even attacked by students as "autistic." They went astray because, as a group, they mistook beauty for truth. Even after the shock of the Great Depression their romanticized vision of the economy led them to ignore the things that can go wrong. They turned a blind eye to the limitations of human rationality, the problems of institutions and the imperfections of markets, especially financial markets.

Every field of academic study is fundamentally based on a philosophy, acknowledged or not. The physical sciences believe that nature is independent of man and that it can be studied and understood. The

beliefs of the social sciences, economics included, must be different since all of them deal with the nature of man in some way. Economics assumes that man is by nature acquisitive, self-centered and seeks his own advantage. Nonetheless, economics likes to think of itself as a science, a dispassionate explorer of the world. It suffers from so-called “Physics envy,” the belief that rigorous deduction from basic axioms and the use of mathematics are scientific. But they often misunderstand the nature of a scientific process. Dr. George Stigler, for example, misstates the nature of a scientific theory – an economist’s usual failure: [2]

“Clearly a general theory must ignore a thousand detailed variations or it cannot possibly be general. Yet only general theories are useful. In fact general theories are the only useful theories even if they are to be used only once.” Or, “Suppose an alternative theory is very poor. . . . The answer is that it takes a theory to beat a theory: If there is a theory that is right 51 percent of the time, it will be used until a better one comes along.”

Surely it should be obvious that a theory that’s wrong half the time has been falsified. And, why consider it at all if it’s no better than a coin toss?

The economic ideas that now dominate society are extremely confused. The concepts of Value, Utility, Consumer Preferences, Full Employment, etc. depend on the arguments pursued by their believers. If, for example, Utility were to be maximized for all of society then wages & benefits would be higher, not lower. That would be revolutionary and demolish *lassaiz faire*. What are the rules? All the major economists have struggled to reconcile the aims of business capitalism with society – satisfaction

of desires, maximum of happiness or utility, generation of surplus value, benefits of investment and growth, etc. None of them got around to including group spirit or class consciousness. For economics, it’s essential to combat an ideology which pretends that only the values measured in money matter. Everyone benefiting himself doesn’t always do good for all. Choices and judgments are always needed. The idea of equilibrium seems to transcend reason and must have deep roots.

If employment is established as a public good, the question of what employment is *for* becomes a political question. The government can’t be neutral. A long period of healthy growth, for instance, will convince people to take bigger and bigger risks, and when a lot of people have made risky bets, a few disappointments can have very big consequences. Capitalism’s dynamic activism is by far the best way to create worldwide wealth, but its excesses in finance will cause periodic crashes. The central banks really should be more sensitive to “irrational exuberance.” William McChesney Martin, Fed chairman during the 1950s, famously said that the job of the Federal Reserve was “to take away the punchbowl just as the party gets going.” It should learn how to do it again. That will never be a popular job.

It’s hard to say where the economics profession will go from here. It will certainly have to learn to live with messiness and to accept that irrational and often unpredictable behavior is important. Economists must face up to the idiosyncratic imperfections of markets, and acknowledge that an economic Theory of Everything is a distant goal. If this leads to giving more cautious advice to policy makers, that’s all to the good

Capitalism was truly a Revolution since it remade societies all around the world. It diminished folk traditions and religion while magnifying business and the State. The new field of economics was born trying to make sense of this confusion. Adam Smith was its founding father. In a similar way Isaac Newton advanced the physical sciences and many old ideas were put to rest. But economics has not yet been renovated and it

just muddles along. Its Ptolemaic school argues with its Heliocentric school. Its present sorry state is explained, or is at least justified. Someday a new Newton may point the way and give economics its deliverance. As Alexander Pope wrote: [3]

“Nature and nature’s laws lay hid in the night.
God said, Let Newton be! and all was light!”

14 – REFERENCES

iii – Epigraph

Keynes, John M. A Tract on Monetary Reform
BN Publishing 2008, Chapter 3 (1923)

1 – The Long Slog

- [1] DeLong, J. Bradford Estimating World GDP, One Million B.C. – Present
Dept. of Economics, U.C Berkeley
From: www.j-bradford-delong.net/TCEH/1998_Draft_World/Estimating_World_GDP.html
- [2] Kruse, Michael Charting Historical Global Per Capita GDP
Mar 06, 2008
From: <http://krusekhronichle.typepad.com/krusekronicle/2008/03/charting/history/html>
- [3] Perry, Mark J. There's One Thing We Can Always Count on in the Long-Run: 2% Growth in Per-Capita Real GDP
Professor Mark J. Perry's Blog for Economics and Finance,
September 10, 2010
- [4] Keynes, John M. The Economic Consequences of the Peace
Harcourt, Brace and Howe, New York 1920
Chapter 2, Europe Before the War, pp. 11-12

2 – Trouble, We Got Trouble

- [1] Soddy, Frederick Wealth, Virtual Wealth and Debt
E. P. Dutton, 1933, 2nd edition, Introduction
- [2] Lewis, Michael The Big Short – Inside the Doomsday Machine
W.W. Norton, 2010
- [3] Akerlof, George & Shiller, Robert Animal Spirits – How Human Psychology Drives the Economy and Why it Matters
Princeton Univ. Press, 2009

3 – Classical Beauty and the Beast

- [1] Smith, Adam An Inquiry Into the Nature and Causes of The Wealth of Nations
Book 4, Chapter 2 (1776)
Random House Modern Library, 1994
- [2] Robinson, Joan Essays in the Theory of Economic Growth
MacMillan, 1968 (1962) 4th ed.
Part IV, Chapter 2
- [3] Hoover, Herbert The Memoirs of Herbert Hoover
The Great Depression 1929-1941
MacMillan, 1952 Chapter 4, p. 30
- [4] Akerlof, George A. The Market for 'Lemons': Quality, Uncertainty and the Market Mechanism
Quarterly Journal of Economics **84** (3), 1970
The MIT Press

4 – Models, The Style Show

- [1] Keen, Steve Aggregate Demand = GDP + Change in Change in Debt
<http://www.debtdeflation.org> 10/17/10
- [2] Powers, Treval C. Leakage – The bleeding of the American Economy
Benchmark Publications, 1996

5 – The Elephants Gather

- [1] Open Letter from Economic Students to Professors and Others Responsible for the Teaching of this Discipline
Autisme-Economie
<http://www.autisme-economie.org/article142.html>

7 – Scarcity, Surplus and Choice

- [1] Robbins, Lionel Essay on the Nature and Significance of Economic Science
Macmillan, 1932
- [2] Nordhaus & Samuelson Economics
16th edition, Chapter 1
McGraw-Hill, 1998

- [3] Smith, Adam [An Inquiry Into the Nature and Causes of The Wealth of Nations](#)
Random House Modern Library, 1994
- [4] George, Henry [Progress and Poverty](#)
Robert Schalkenbach Foundation
1992 (1879)
- [5] Huxley, Aldous [Work and Leisure](#)
From: Complete Essays of Aldous Huxley, Vol. IV
Ivan R. Dee, 2000 p. 410

9 – Wealth

- [1] Menger, Carl [Principles of Economics](#)
Chapter 4, Wealth
Ludwig von Mises Institute,
2007 (1892)
- [2] Dasgupta, Sir Partha [Inclusive Wealth Report 2012 – Measuring Progress Toward Sustainability](#)
Cambridge Univ.
www.ihdp.unu.edu/article/iwr

10 – Capital

- [1] George, Henry [Progress and Poverty](#)
R.obert Schalkenbach Foundation
1992 (1879)

11 – Credit

- [1] Thornton, Henry [Enquiry Into the Nature and Effects of the Paper Credit of Great Britain](#)
From: Library of Economics Series
Allen & Unwin, 1939 (1802)
- [2] Innes, A. Mitchell [The Nature of Money](#)
Polity Press, 2004 pp.12-19

- [3] Earley, James Joseph Schumpeter: a Frustrated Creditist.
From: New Perspectives in Monetary Macroeconomics –
Explorations in the Tradition of Hyman P. Minsky,
Dymski & Pollin (Eds)
Ann Arbor: University of Michigan Press, 1994

12 – With a Human Face

- [1] Dickinson, Amy Wisconsin State Journal Advice Column
Madison, WI - April 18, 2011
- [2] Fitzgerald, F. Scott The Rich Boy
From: All the Sad Young Men
Scribners, 1926
- [3] Steinkuehler,
Constance Massively Multiplayer Online Games –
Learning & the New Pop Cosmopolitanism
2010 NMC Symposium April 4, 2010 Univ. So. Cal.
<http://www.youtube.com/watch?v=a0028zVcMqc>
(at 10:12)

13 – Summary

- [1] Andreessen, Mark Jobs Fight: Haves vs. the Have – Nots
Interview by Tim Mullaney
USA Tomorrow – The Next 30 Years
(A special edition of USA Today)
Friday, September 14, 2012.
- [2] Stigler, George J. The Theory of Price
Macmillan, 1966, 3rd ed. (1942)
- [3] Pope, Alexander Epitaph
Intended for Sir Isaac Newton in Westminster Abbey, 1739

15 – SELECTED BIBLIOGRAPHY

Bagehot, Walter Lombard Street – A Description of the Money Market
The Echo Library, 2005 (18xx)

This classic book describes the history, structure, and operations of the banking system of England in the late 1800s when it was the center of world finance. Bagehot's writing is wonderfully clear and accurate, nicely educating the reader from chapter to chapter. He shows how the British banking system, for all its power, had vulnerable spots that wouldn't exist in a 'natural' banking system. But it had developed that way and there was no way to change it.

He writes, "The peculiar essence of our banking system is an unprecedented trust between man and man: and when that trust is destroyed by hidden causes, a small accident may greatly hurt it, and a great accident may in a moment almost destroy it. . . . we can thoroughly comprehend the cardinal importance of always retaining a great banking reserve. Whether times of adversity are well met or ill met depends far more on this than on any other single circumstance."

From Bagehot's time to ours, "times of adversity, panics, seasons of incipient alarm, public nervousness and anxiety" (all his terms) keep on occurring. He was familiar with them. Much of his book describes how banks prepare for and deal with these dramatic events. Modern bankers should re-read his book. Some may have done so but others seem to operate like the buccaneers and bill-brokers he describes, utterly dependent on rich backers to rescue them when trouble comes.

Blatt, John M. Dynamic Economic Systems – A Post-Keynesian Approach
M. E. Sharpe, 1983

Dr. Blatt's book is extremely valuable as a foundation for understanding the foundations of present-day economic theory. It is highly mathematical and not suitable for the general public, or for many economists.

The book is in five sections: 1) definitions of economic models and states, 2) growth and stability in linear systems, 3) non-linear systems and the business cycle, 4) uncertainty in economics and 5) the background of his ideas. Each chapter has a literary section and a dense mathematical appendix proving the theorems he has mentioned earlier.

He establishes that any simplified linear economic model (which assumes all markets clear, no uncertainty of the future, no monopolies or oligopolies and no credit or financial sectors) will show either damped oscillations in time about a balance point, or else veer off without bound – depending on the choice of initial parameters.

Blatt discusses the simple non-linear economic models of Hicks, Frisch, and Goodwin. All show limit cycles in time (endlessly repeating paths in phase space) which could be taken to be business cycles. However, none of them copy actual business cycles which build up slowly and crash down abruptly. He proves that the Frisch model, and any like it, has symmetric cycles and can never match the real world. Goodwin's model comes closest and merits further study.

Blatt then extensively discusses uncertainty vs. risk, utility theory, and investment under uncertainty. He introduces his own model of investment using the concept of payback time, which is totally ignored in standard economic theory but is extremely important in the decisions facing real businessmen.

Finally he explains that his work is based on the Physiocrats of 18th century France, begun by Dr. Francois Quesnay, whose original work was ignored in favor of the equilibrium models started in the 1870s and dominant ever since.

Dr. Blatt (1921-1990) was professor of applied mathematics at the University of New South Wales in Australia. His book was recommended to me via e-mail by Dr. Steve Keen of the University of West Sydney.

Buchan, James Frozen Desire – The Meaning of Money
Farrar, Strauss & Giroux, New York, 1997

A literary essay with a thousand turns, fascinating. From the introduction: “I realized that moneyness was not a permanent attribute of those pieces of paper, but attended them for a period, as good fortune had attended me as a young man; in reality attended them only so long as they were in motion . . . money must be visible, for a buried hoard is not money until it is exhumed . . . a banknote blowing in the street is not money until it is run after and picked up. Money becomes money only at the instant it incorporates a wish; and I saw it was a treadmill; that it led us all on a mad bacchanal from which we could not break out and sit down.”

DeSoto, Hernando The Mystery of Capital – Why Capitalism Triumphs in the West
and Fails Everywhere Else
Basic Books, 2000

Non-Western societies fail to develop their own immense wealth because they have no secure system of wealth ownership. Without deeds, titles and supporting laws, possessors of property cannot claim ownership. Without clear ownership, they cannot borrow against their property, start new businesses and create new capital. An extended and solid legal structure allows people to do business with strangers, rather than deal only with those they know and trust.

Earley, James, Economic Theory in Review
Boulding, Kenneth, Indiana University Publications, Social Science Series 8
Gruchy, Allan, & E. H. Beuhrig, Ed., 1949
Seltzer, Lawrence

Each author has contributed two papers to this review of economic theory. I got this book in order to read Earley’s essays. He points out that laissez faire was in trouble with economists before 1900 but there seemed no way to go beyond it. Facts contradicted theory at every turn, making economists appear to be willfully ignorant although they saw their problems well enough. Boulding lays out some simple mathematical identities that show how economic variables and changes to them are related. All very precise, with nothing of the uncertain real world in it. Gruchy describes the different approaches of Keynes, concerned with unemployment, with the so-called institutionalists such as Veblen who dealt with the problems of giant monopolists. Seltzer writes clearly about money and credit, their history, the continual confusion surrounding Say’s Law. This is an excellent summary of where economic theory stood in 1949; further ahead than I’d thought, at least in the minds of these gentlemen.

Ehrenreich, Barbara Nickel and Dimed – On (Not) Getting By in America
Henry Holt, 2001

Taking a series of minimum-wage jobs in several cities, Ehrenreich discovers the nitty-gritty of being poor in America. A single job won’t cover expenses. Housing is the deal breaker because rents are high and wages are low; transport and child care are next. Why do people put up with being paid so little? No cash reserves at all; no car; it’s a struggle to find a different job, much less a better one; workers don’t discuss pay with each other. It’s taboo so they are ignorant and each thinks it’s their *own individual problem*. Plus, employers fight wage increases with every trick they have.

While working in ladies wear at Wal-Mart, Ehrenreich realizes she shouldn’t be angry with women who pick clothes from the rack and dump them on the floor. It is her job to put things back in order again all day, every day. These women have to pick up after their screaming kids at home. Here’s their chance to come to a place where things are orderly, and act-out. No wonder they shop at Wal-Mart several times a week.

Ferguson, Niall The Ascent of Money – A Financial History of the World
Penguin Press, 2008

The love of money is vilified as the root of all evil, but it has been essential to the rise of man from wretched subsistence to prosperity. Ferguson imagines its invention, describes its elaboration into ever more complicated forms such as precious metals, bonds, banknotes, and mortgages. He gives the histories of insurance, annuities and pensions; stock markets, hedge funds, options and derivatives. He tells the tales of the many financial disasters from Lorenzo di Medici's banking failure of 1464, John Law's Mississippi scheme of 1719, to the housing bubble of 2008.

Ferguson concludes that panics and crashes will continue to happen. Events happen which are not merely chancy but completely unforeseen. As Keynes said, ". . . there is no scientific basis on which to form any calculable probability whatever. We simply do not know." Further, humans are prone to veer from euphoria to despondency. They fail to learn from history, are overconfident, and tend to prefer gambles with high payoffs.

Ford, Martin The Lights in the Tunnel – Automation, Accelerating Technology,
and the Economy of the Future
Acculant Publishing, 2009

Economic growth is accepted as being dependent upon technological innovation. Ford says that technology is accelerating faster than society can keep up with it. Worse, as machine intelligence improves there will come a tipping point where most workers, blue and white collar, will be permanently unemployed. The goods and services needed for a mass market could be provided using less than a third of the jobs in today's economy. Ford believes that the Luddites may be right this time because the economy won't create new paying jobs on such a huge scale. He believes the *size* of the problem is not appreciated. Previously, when the farms were mechanized millions moved to factory jobs. Blacksmiths were replaced by auto repair shops. Tomorrow's machines will be able to do almost any tasks that can be broken into stages and steps. Artists, athletes and musicians will be safe but the majority, the many millions, will not be. Such a loss of jobs and incomes will cause a huge drop in demand. The mass market will disappear. What would the machines produce then?

Ford proposes several ideas that would effectively provide guaranteed incomes to all, hopefully without producing dependency. He realizes that wrenching cultural changes will be needed. He thinks they will gradually be forced upon us.

Galbraith, James K. Inequality and Instability – a Study of the World Economy
Just Before the Great Crisis
Oxford Univ. Press, 2012

This is a lengthy statistical analysis of data on inequality from around the world. Galbraith concludes that inequality is macroeconomic. It is produced by forces operating worldwide and these are mostly financial: interest rates and capital flows along with pressures to maintain growth make inequality rise inexorably.

Harcourt, G.C. Some Cambridge Controversies in the Theory of Capital
Cambridge Univ. Press, 1972

This book is a summary of the so-called 'Cambridge controversies' between Cambridge, England and MIT in Cambridge, Mass. They began in 1954 when English economist Joan Robinson published her complaint that capital couldn't be measured by money independently of interest rates, profits or human capital skills. They couldn't be combined into a single kind of capital. This irritated the economists at MIT such as Samuelson and Solow because it violated the reigning marginal theory of value which had become a dominant part of economic teaching. The pot was stirred when economist Piero Sraffa published *Production of Commodities by Means of Commodities* in 1960. Harcourt describes the academic storm it created. The parties on both sides of the Atlantic wrote papers exposing the errors of the others. It went on for years. There were even academic insults.

Harcourt's narrative makes it seem like a tempest in a teapot, a spat, a contest of wounded academic vanities. It was all of these and also a missed opportunity, a road not taken, a new paradigm rejected.

Harcourt notes that Sraffa's result totally undermined the marginal theory of value and should have caused big changes in economic theory, but did not. Marginal theory continued as the central pillar of academic economic theory.

Heilbroner, Robert The Future as History – The Historic Currents of Our Time
Grove Press, 1959

Optimism and progress, even history, are recent ideas. They required developments in social structures which happened slowly in the 17th – 19th centuries and opened great possibilities in people's minds. Improvements year by year were no longer just luck but became inevitable and automatic. This led to a belief in growth and a future that would be open and accepting of it. The 20th century damaged this view except in America which is now quite parochial, having suffered no damage in the World Wars.

Technology's rapid change has created alienation, big cities and tighter social machinery. Even more drastic social controls may come about if economic pressures are not enough to get the necessary grubby jobs done. Abundance will make them seem to be optional. The American economy has a huge unacknowledged stimulus program in the defense budget. If it were cut back the private sector probably could not fill the gap, and big new government expenditures would not be politically acceptable. In addition, the developing countries are rising. They will never catch up with us unless their growth rates far exceed ours. Gross inequality between nations won't be tolerable much longer. Our forward-looking optimism may have to yield. Planning and socialism will be the result. Inertia and habit will make a transition drawn out, painful and perhaps unsuccessful.

Hutchison, T.W. Knowledge and Ignorance in Economics
Basil Blackwell, 1977

Hutchison's book shows that extreme doubts about the predictive ability (beyond trend-following) and the mathematical foundations of classical economics began in the early 1970's. (This was well before Steve Keen's 2008 book, *Debunking Economics*.) Hutchison, in his understated British manner, shows how it's all built on sand. He predicts economists will ignore his demolishing of the foundation of their 'science,' and proceed just as before because they have nothing better to put in its place. Keen predicted the same.

Hutchison makes allowance for such poor predicting and theorizing early-on in economics because of a complete lack of accurate data on population, GNP, national income and other accounts before the 1940s. Economic predictions had to be mostly conjecture and could not be tested. The demand for predictions was always unremitting however, accurate or not, which led economists to pick assumptions out of the air and greatly elaborate their models.

Hutchison added a chapter on Abstraction, quoting the many critics of the 'equilibrium model' of the economy and the rational economic actor.

Keen, Steve Debunking Economics – The Naked Emperor of the Social Sciences,
Revised and Expanded Edition
Zed Books, 2011

With the crash of 2007-08 behind us, Steve Keen has completely revised his 2004 book and enlarged it over 40% to 447 pages. It should be a new book with a new title. He lists the failings of each economic school; how they're unable to incorporate, much less predict, the booms and busts of capitalism. Many theories explicitly rule them out as impossible. Keen lists many specific errors arising from poor understanding of basic calculus and probability. He hopes this explains the profession's neglect of such errors even when they're discovered by other economists. He believes they are ignored because, if accepted, a complete upheaval and re-do of economic theories and

institutions would have to result. Academia, banking and finance, industry, and government would all need to change their procedures and modes of thinking.

Keen breaks new ground by introducing his simplified model: Investment minus Profits equals the change in Debt. This is a simple differential equation that adds a time-dependent term into the economist's usual monetary equation, since some variables depend on time-changes in others. Keen simulated the equation with a computer without assuming that the variables come to equilibrium. His model showed time-curves that look like the business cycles, moderations, booms and crashes that appear in the real world. He found ongoing correlations between changes in debt and changes in employment, between inflation and the debt-to-GDP ratio, both known to be true but not found in standard economic theory. Keen's model leaves out government and consumer spending, finance, imports and exports. He knows these should be incorporated and will do so in his next book

This book will be a hard slog for non-mathematical readers. Keen puts the equations in verbal form for the general reader, but they're all present. This is not Economics Made Simple. There are tables and graphs, but 120 more illustrations are viewable and downloadable from the publisher's website. A larger print copy including all illustrations can be ordered.

Keynes, The Economic.. Consequences of the Peace
John Maynard Harcourt, Brace & Howe, 1920

Keynes was present in Paris after World War I at the negotiation of the Treaty of Versailles as a member of the British Treasury delegation. He was appalled by the vicious treaty terms and reparations applied to Germany, saw the desperate economic situations of both Germany and the Allies, foresaw that nothing but ruin would come if no spirit of magnanimity prevailed, and none ever did. Keynes's book is full of back-of-the-envelope calculations of the coal & iron, wheat, cotton, cattle, fertilizer, railroad rolling-stock, shipping, man-hours; everything necessary for the economies of Europe to survive much less flourish, and he sees that it will be impossible. His final chapter proposes some remedies, all of which were politically impossible. They would have to wait until after World War II for the Marshall Plan, the European Coal Community, NATO, the Common Agricultural Policy, and the Common Currency pact. They were conceivable only after another, even more horrific, bloodletting.

Keynes, The End of Laissez-Faire
John Maynard Hogarth Press, 1926 (1924)

This small book is the text of lectures given by Keynes in 1924 and 1926 but not published until 1926 by Leonard and Virginia Woolf. Keynes outlines the origins of laissez-faire in the obvious successes of industrialists and the failures of aristocratic governments: best leave things to those who know how to get things done. He also notes that Darwin's theory of evolution helped turn a corner. Economists said that wealth was the result of free competition, but Darwin went even further – free completion had created mankind. As Keynes put it:

“The human eye was no longer the demonstration of Design; . . . it was the supreme achievement of Chance, operating under conditions of free competition and laissez-faire. The principle of Survival of the Fittest could be regarded as a generalization of Ricardian economics.”

The invention of limited-liability companies and their drift toward socializing themselves by separating management from ownership, effectively put an end to laissez-faire in practice. It remains a powerful rallying cry among conservatives. Keynes concludes Chapter I: “I do not know which makes a man more conservative – to know nothing but the present, or nothing but the past.”

Keynes, The General Theory of Employment, Interest and Money
John Maynard Palgrave Macmillan, 2007 (1936)

Keynes wrote this epoch-making book during the Great Depression, changing economics for generations. He introduced the concepts of the Propensity to Consume and Propensity to Save, Inducement to Invest, Liquidity Preference, of Aggregate Demand and Aggregate Supply for the economy as a whole. He showed that rich communities would have difficulty providing enough aggregate demand to create full employment, as compared with poor communities, contrary to Say's law where supply would always create sufficient demand. He re-established Montesquieu's earlier theory that interest rates shift to preserve equilibrium between the demand and supply of money, not between the demand of investment and the supply of savings.

That over-saving could be bad for an economy was nearly heresy. Keynes's formulation, re-enforced by the depression, made it respectable again as did his insight that every act of consumption was also an act of disinvestment. It led inexorably to the idea of demand management by governments as the cure for depressions, since no one else was left standing and able to do anything.

Shackle, G.L.S. Economics for Pleasure
Cambridge Univ. Press, 1971, 2nd edition (1968)

This book is a wonderfully written introduction to economics "for the leaders in public life who should have some knowledge of economics." It is not 'economics for the common man.' It is clear and understandable while using no mathematics. Shackle lays out the intricate relationships that economists deal with and how they go about it, sometimes using one approach then another. Each chapter begins with a situation that economic theory deals with. He explains the meanings of its terms like 'balance of payments' or 'marginal cost.' The rest of the chapter describes and comments on how the theory applies.

His purpose is to bridge the gap between economists and businessmen, politicians, and journalists; those who know society well but could use a better knowledge of economics.

Veblen, Thorstein The Theory of Business Enterprise
Scribner's Sons, 1927 (1904)

Veblen deals with the practices and attitudes of business men, as he calls them. Not factory owners, entrepreneurs, or small businessmen but the titans of industry, the movers and shakers: those who have vision and are concerned with deals, mergers and grand strategies. Today's Jeff Bezos of Amazon and yesterday's Andrew Carnegie of U.S. Steel are Veblen's business men. He explains that these men operate in a credit, not a money economy. To them, capital means available funds – not the land, factories and machinery normally thought to be part of capital. The basis of capitalization for a corporation is not, for them, the capitalized value of its assets but its earning capacity as a going concern.

Stockholder owners have a very distant relation to their property. The credit economy is far advanced over the money economy. Business men control company capital in the form of securities which change with confidence and psychology. The capital markets are the source of capital used for production. The difference between ordinary businessmen and Veblen's business men is in their purpose. One is a quest for livelihood, the other a quest for profits. Prosperity to the latter means industrial efficiency.

Business men tend toward combination, away from competition. Often consolidation is to the good because efficiencies are gained and profits can be made at lower prices without suppressing wages, thus preventing chronic depression. But there is always a tendency to depression because greater efficiency requires greater growth which can lead to depression through overproduction and over-accumulation of wealth. Countervailing forces are taxes and combined labor.

Business law is based on the theory of Natural Liberty, arising from the common law, where men met on a common footing with free competition as ideally occurred with small merchants and industries. Business law developed with Natural Liberty as its base, with freedom from restraint

except regarding rights of ownership, property, and contract. These ideals gradually became obsolete by the industrial system.

Wanniski, Jude How The World Works
Regnery Publishers, 4th edition, 1998

A lucid presentation of supply side economics, the Laffer curve, and the “wedge” effects of taxation. Wanniski gives a very good summary of the differing points of view between supply-side and demand-side economists; what’s important and what’s not, for both. There are many historical examples of how mistaken or egregious taxation may ride too far up the Laffer curve, and thereby ruin economies.

Weber, Max The Protestant Ethic and the Spirit of Capitalism
Scribner’s & Sons, 1958 (1904)

Weber, a German academic, published from 1904 to 1906 his studies on the sociology of religion which were recognized as landmark contributions. He sought to explain the psychological conditions that made possible the rise of capitalism. Speculation, money-lending and commercial enterprises are as old as history. But capitalism, based on profit by the owners of capital and affecting every aspect of society, is a modern phenomenon. Its code of economic conduct and scheme of human relations were at variance with the accepted scheme of social ethics, the law of the church, and European states.

Weber’s thesis was that the new factor was a cultural residue of some forms of Protestantism such as Calvinism, Pietism, Methodism and Baptism; all trying to cope with the doctrine of predestination. From this struggle came the concept of a “calling.” This was a form of asceticism wherein one could discover one’s true function; one’s purpose as given by God. Following a calling let one believe that one could be among the Elect (which was unknowable) and not merely one of the useless ones. All forms of purposeful work could be callings, including business and money-making. Doing them fully and well became doing the Lord’s work. Weber quotes John Wesley, founder of the Methodist church:

“Methodists in every place grow diligent and frugal; consequently they increase in goods. Hence they proportionally increase in pride, in anger, in the desire of the flesh, the desire of the eyes and the pride of life. . . . Is there no way to prevent this – the continual decay of pure religion? We ought not prevent people from being diligent and frugal; we must exhort all Christians to gain all they can; and to save all they can; that is, in effect, to grow rich.”

Wood, Ellen Meiksins The Origins of Capitalism – A Longer View
Verso Books, 2nd ed., 2002

The usual explanations of the origins of capitalism assume that it was immanent in history or part of human nature, and it sprang up when the restrictions of feudalism were lifted. This circular definition assumes what needs to be described. Ellen Wood shows how capitalism originated in England, and only there, as Agrarian Capitalism. Both landlords and their tenant farmers became subject to market pressures for improvements in land productivity. This was in contrast with France where farmland was held by the peasants and the aristocracy extracted a surplus with taxes.

She quotes Locke’s argument that unimproved land is waste and may be appropriated, as being the primary theory supporting both the enclosure movement and colonial imperialism.

Wray, L. Randall

Modern Monetary Theory – A Primer on Macroeconomics
for Sovereign Monetary Systems
Palgrave Macmillan, 2012

This book is my long-awaited introduction to Modern Monetary Theory (MMT). It has been much fought over in articles and blogs, but I didn't understand what the fuss was about. Now I finally get it. Dr. Wray lays out a coherent presentation of MMT. It uses a basic accounting identity based on stocks within and flows between the sectors of the economy. Each must sum to zero at any moment in time. As a result, those who want to accumulate financial wealth cannot do so unless others are willing to deficit-spend. Wray shows that a country that issues its own currency can always pay its bills. It can 'afford' to buy anything for sale in its own currency, including labor. Its priorities should be full employment with floating exchange rates. Inflation can be controlled by combining capital controls, import restrictions and tax policy. He shows how government 'spending' operations are unlike those in other sectors of the economy, making the Austrian, Libertarian and Gold-bug viewpoints untenable.

It is amazing how contentious the nature of money and the operations of banks still are. So many experts – economists and even bankers – have labored so many years yet the arguments about "sound money" and "fiat money," "money is wealth" and "money is an IOU" still go on. Even among those who should know about such things. The passion on all sides runs high.

Wray is professor of economics at the University of Missouri-Kansas City and Director at the Center for Full Employment and Price Stability.

