

STOP GREENSPAN FROM PLUNGING AMERICAN INTO A DEPRESSION

by Antal E. Fekete,
Professor, Memorial University of Newfoundland
June 25, 2003

Open letter to Congressman Ron Paul, member of the Joint Economic Committee

Antal E. Fekete
Memorial University of Newfoundland
St. John's, Newfoundland, CANADA A1C 5S7
E-mail

To the Honorable Ron Paul
U.S. House of Representatives
Washington, D.C.

June 10, 2003

Dear Dr. Paul:

I have been a student of monetary science for almost fifty years and I am greatly disturbed by the explosive and malignant growth of bond speculation which I attribute directly to the inept monetary policy of the Federal Reserve.

One-sided bond speculation fully explains collapsing interest rates and burgeoning depression in Japan for the past ten to twelve years. Before 1971, when the world was on the gold exchange standard and interest rates were relatively stable, there was no bond speculation. None whatsoever. Moreover, the amount of long positions in bonds was limited by the amount of issues outstanding. This was changed drastically (although without much fanfare) in 1971 when the world embraced fiat money. (Or was it fiat money that embraced the world?) Now interest rates can move in and out of double digits, or even fall to zero. More ominously, the amount of long position in bonds is no longer limited by the amount of issues outstanding (large as it may be). Derivatives have removed that limit. Speculators can now pyramid in pursuit of higher bond prices. At last count the size of the derivatives market was \$140 trillion. Let's assume that the total of interest-related derivatives is \$100 trillion in 'notional terms'. This means that speculators have paid premiums to benefit from a rise in the value of \$100 trillion worth of bonds (never mind that the total value of all the outstanding issues is a small fraction of that incredible sum). Therefore speculators stand to rake in \$1 trillion in profits every time bond prices increase an average of 1 percent due to a drop in interest rates. Nor are these profits 'notional': they are payable in cold cash.

The next domino, after Japan, is the United States. Contrary to conventional wisdom, a falling interest rate structure is no boon to the economy. A low and stable interest rate structure is. All thoughtful economists would agree that lower prices with stable interest rates (as obtain under a gold standard) are no threat. On the contrary: they are a welcome fruit of increased efficiency. It is the combination of falling interest rates and falling prices that is deadly: if prolonged, they could lead to depression.

The Federal Reserve has been conducting unreformed Keynesian monetary policy for the past decades, but it has now reached the end of the rope as the federal funds rate was pushed down almost to zero. At the May 21, 2003, hearing of the Joint Economic Committee, Mr. Greenspan testified as follows.

Senator Robert F. Bennett (Chairman): Last November when you were here we discussed the downward pressure on prices, and options available to the Federal Reserve to combat it. Yet some still seem to believe that low short-term interest rates limit the potency of monetary policy... Could you explain how the Fed could address unwelcome downward pressures on prices through the purchase of long-term Treasury securities?

Mr. Greenspan: As I and a number of my colleagues have stated recently, we have chosen to act solely in overnight funds, essentially addressing the reserve balances of the banks. Should it turn out that, for reasons which we don't expect, but we certainly are concerned may happen, the pressures on the short-term markets drive the federal funds rate down close to zero, that does not mean that the Federal Reserve is out of business on the issue of further easing and expansion of the monetary base. We can, indeed, as you point out, move out on the yield-curve because, as you are well aware, even though short-term rates are slightly over 1 percent, longer term rates are up significantly above that. And we do have the capability, should that be necessary, of clearly moving out on the yield-curve, essentially moving longer-term rates down and in the process expanding the monetary base and the degree of monetary stimulus. And since there is such a significant amount of potential in that longer-term maturity structure, we see no credible possibility that we will, at any point, run out of monetary ammunition to address problems of deflation or anything similar to that which disrupts our economy.

The testimony of Mr. Greenspan reveals that the Federal Reserve has no creditable plan to combat deflation. The plan it has is a colossal mistake that could very well plunge America headlong into deep depression. The bubble of speculative long positions in bonds is so huge that it can no longer be safely deflated. Now the Federal Reserve is gearing up to climb the yield-curve in order to expand the monetary base and stimulate demand. But this is to pour oil on raging fire. The Federal Reserve can create as much new money as it wants, but will have no control over it once it has entered circulation. It is up to the speculators. This is how they read the message: "Hey, here is another godsend. The old boy has pulled out all the stops, there is no more risk in pyramiding bond derivatives! You had better believe it! Just watch the price-indicators. Every time one falls, or demand weakens, Greenspan & Co. is going to buy bonds. Forestall them, how we will! We buy first. Profits guaranteed, courtesy of the Fed. Thank you kindly, Mr. Greenspan!"

There was always political pressure on the Federal Reserve Board to reduce interest rates. But as shown by the volumes of the Federal Reserve Bulletin for the years 1950-1970, the Board was always very clear on the point that *the reduction of interest rates (other than the federal funds rate) is not within the Board's power*. If Mr. Greenspan now promises to work the miracle that his predecessors were frank enough to call impossible, it is because he, like the Sorcerer's Apprentice, relies on others to do the job for him, namely, on the speculators. The explosive growth in bond speculation is explained by the greatly reduced risks involved. Now, given Mr. Greenspan's testimony, the remaining risk is being taken out as well. But he won't be able to control speculators once he has allowed them free rein. Mr. Greenspan will, like the Sorcerer's Apprentice, be swept away by the tide he has fomented.

The consequences are terrifying. The pact Mr. Greenspan has made with the devil is a most dangerous kind. Further drop in interest rates would, albeit with a time lag, cause a fall in prices, and falling prices would cause interest rates to fall further, spelling deflationary spiral for the country.

I respectfully submit that the Joint Economic Committee, in search for an answer to Senator Bennett's query, may wish to hear the testimony of *independent* witnesses as well. Mr. Greenspan's testimony is self serving, and it shrouds the extreme danger implicit in his counter-productive plan. There are opposing views that may be worthy of the attention of your Committee. I take the liberty of enclosing a brief representing those views.

I remain,

Your most obedient servant,

Antal E. Fekete
Professor Emeritus

Enclosure

DEFLATION UNDER FIAT MONEY

According to Mr. Greenspan almost no economists believed that you could create deflation with fiat currencies because, by definition, the ultimate supply of those currencies comes from the government. This brief represents the view of those very few economists he refers to, never before carefully spelled out in detail.

Genesis of the long wave inflation-deflation cycle

In the Keynesian view, the gold standard is "contractionist" or "deflation-prone". The truth is the exact opposite. The gold standard is the flywheel regulator of the economy: it makes for stability. It was precisely the sabotaging of the gold standard by the banks and the government that started the inflation-deflation long-wave cycle. With the connivance of the government, banks expanded

credit beyond the limits set by their gold reserves. When they could no longer pay their sight liabilities, the government came to their rescue by declaring a “bank holiday”. Worse still, a double standard was introduced in the application of contract law. While every other firm was liable to be liquidated by its creditors in case it failed to deliver on its contracts, banks were given a privilege. They were exempted. Nay, they were *rewarded* for breaking their contract with their creditors. Their dishonored promissory notes were elevated to the status of money, at first temporarily, then permanently. This perverted system of incentives did not fail to have consequences.

The immediate effect was inflation. This was a sellers’ market and the new cash caused prices to rise. Higher prices caused interest rates to rise as well. Lenders demanded compensation for their expected losses in the form of an “inflation premium” to be added to the going rate of interest. As interest is a major cost for the producers, higher interest rates in turn caused further price rises.

The Spiral

In this way an inflationary spiral was set into motion: higher prices causing higher interest rates causing higher prices, and so on. Sooner or later the spiral would run its course and come to an end. When growing stockpiles remained unsold, there was panic. Retrenchment, *alias* deflation, started in earnest. Prices fell. Lenders were forced to drop the inflation premium. Interest rates fell. This was now a buyers’ market. Producers were squeezed by competition, and they had to cut prices further. Thus a deflationary spiral was set into motion: lower prices causing lower interest rates causing lower prices, and so on.

Oscillating money flows

The inflation-deflation cycle can be visualized as a money-flow oscillating back-and-forth between the bond market and the commodity market. In the inflationary phase money flows from the former to the latter. Prices are bid up. Bondholders sell their bonds. The tide in the commodity market is coupled with an ebb in the bond market. After the panic the flow is turned around. It now flows from the commodity market to the bond market. Bondholders buy their bonds back. Commodities are sold at fire-sale prices. Consumers hold back their purchases awaiting still lower prices.

Note that organized speculation has hardly any role in all this as long as the gold standard remains intact. Bond speculation is ruled out: interest rates are relatively stable under a gold standard and, as a result, there is not enough variation in the bond price to make speculation profitable. Commodity speculation exists only insofar as it addresses risks created by nature, to the exclusion of risks created by man. As a consequence, the inflation-deflation cycle is relatively moderate.

Destabilizing speculation

Everything changes drastically with the advent of fiat currency. In addition to stabilizing speculation (addressing risks created by nature) we now have to face destabilizing speculation (addressing risks created by man). This is what Keynesians have “forgotten” to take into account. None of the risks in the foreign exchange and bond markets is created by nature. These risks have all been created by man, in particular by the government, through the instrumentality of overthrowing the gold standard and imposing fiat currency. In the battle of wits more often than not it is the nimble speculator who outsmarts the clumsy central banker and other hired hands of the government.

The consequences of destabilizing speculation are enormous. Limits on the amplitude of price moves have been removed. Worse still, the natural limit on the total commitments in the bond market has also been removed: speculators can now amass long (or short) positions in bonds in any amount, regardless of the combined value of all outstanding issues. It is this fact that is at the heart of the problem of the explosive and malignant growth of bond speculation which has by now brought the total commitments of speculators to \$ 140 trillion in the derivatives markets, a figure that boggles the mind. The total value of bonds outstanding falls far short of the notional value of derivatives on bonds. This is as though speculators are allowed to hold futures contracts calling for delivery of wheat before the next crop in the amount several times greater than wheat in all the barns, freight cars, and elevators of the world combined!

Where the risks are man-made, speculation is *not* a zero-sum game. The total gains of successful speculators are *not* equal to the total losses of unsuccessful ones. Speculators in bonds and derivatives make money not by *resisting* the formation of price-trends (as they would in the commodity market under a gold standard). They make money by inducing and *riding* price trends. They congregate on the same side of the market, whether long or short, and create exorbitant price swings before they move in for the kill. The profits of bond speculators are at the expense of society at large. They come out of the hides of innocent people.

The Ratchet

The deflationary spiral changed its character under the regime of fiat currency. While it had its benign aspects before the gold standard was overthrown such as correcting the excesses of credit expansion, it has become totally malignant after. Speculation and bonds constitute an explosive mix which will, sooner or later, cause economic disaster. Oscillating money-flows get out of control. The process replicates the operation of a runaway vibrator, except the wave length is measured in years or decades, rather than seconds.

Ratchet is the name for the phenomenon that rising prices pull up interest rates and rising interest rates pull up prices (creating inflationary spiral). This is ratchet-up. But you can ratchet-down as well: falling prices pull down interest rates and falling interest rates pull down prices (creating deflationary spiral). Under the regime of fiat currency these ratchets are irresistible as they are powered and amplified by speculation.

Ratchet-up is uncontroversial and is accepted by most economist. It is ratchet-down the validity of which has been called into question. Critics say that falling interest rates need not cause falling prices, and they cite our current experience: falling interest rates have not produced a major fall in the price level. In fact, people in every walk of life complain about unwarranted price hikes. However, the jury is still out on this. Prices did drop in the 1980's when sugar fell from 70 cents a pound, silver from \$45 an ounce, and crude oil from \$40 a barrel. During the 1990's prices of computers and communication equipment have come down dramatically. Ford has recently reported that the company has lost its pricing-power, something it could formerly take for granted. Senator Bennett and Chairman Greenspan would not polemicize about downward pressure on prices and potential deflation if they were a mere figment of the imagination.

The reluctance of the mind to admit that the principle of ratchet-down is a valid one is due to the sway Quantity Theory of Money holds over economics. Under the regime of fiat currency ratchet-down appears as an oxymoron. People think that prices can only go up because the quantity of money in circulation is never reduced but always increased. However, the Quantity Theory is a very crude device. It presents a linear model that is valid only as a first approximation. New money can flow not only to the commodity market, but also to the stock, bond, and real-estate market. For a clue as to which one it will, we must study the behavior of speculators. In today's complex world we need a non-linear model such as the theory of oscillating money-flows. Without it we remain blind to the fact that Mr. Greenspan's anti-deflationary plan is counter-productive.

Falling interest rates squeeze profits

To understand the mechanism of ratchet-down consider the fact that falling interest rates squeeze profits. Conventional wisdom would suggest otherwise: lower interest rates are salubrious to business. However, we must distinguish between a *low* interest-rate structure and a *falling* one. Only the former is salubrious, the latter can be lethal. *Falling interest rates reveal that past investments in physical capital have been made at too high a rate in view of lower rates now available.* The difference of the two hits the profit margin, and hits it badly. There is no way to get around this if you want to keep your books straight. Falling interest rates make the cost of servicing debt on past investments soar. The present value of debt rises. As it does, the cost of liquidating liability rises as well. If you want to retire a loan of \$1,000 taken out at 6% after the rate has fallen to 3%, then you have to come up with \$2,000. As a consequence the value of capital falls. Firms with zero debt are not exempt either. Their capital is also decimated since its replacement can now be financed at lower rates. This should be reflected by writing down capital. Relaxed accounting standards do, however, allow firms to get away without reporting capital losses in the balance sheet. But a loss is a loss, admitted or not. Ignoring it won't eliminate it but will expose the firm to the danger of "sudden death". Like any other loss (such as physical destruction of plant and equipment during war, for example), capital loss should be charged against future earnings. If it isn't, the firm is reporting phantom profits. Creditors will not let themselves be hoodwinked. Long before capital is reduced to zero they will cut off debtors, forcing them into liquidation.

Some of my critics argue that companies refinance their debts to their advantage. Well, some debts may be refinanced, some may not. As things are, more and more lenders are reluctant to comply with requests to refinance. At any rate, debt that has been paid off cannot be refinanced. Yet paid-up capital should be written down in the same manner as capital financed by debt, since it was also subject to losses if it had been put in place when interest rates were higher. Most of the losses plaguing companies are of this variety. For example, several airlines (regardless whether well or badly managed) got blown out of the sky as falling interest rates wiped out their capital.

If you bought a house yesterday only to find out today that comparable houses have been reduced in price by half, then you have suffered a capital loss. No amount of sophistry can make the loss disappear. Nor does it make a difference whether you financed your purchase, or whether you paid cash. The situation is the same with plant and equipment owned by corporations.

Other critics say that falling interest rates drive real estate prices higher, especially that of homes, because buyers don't care how high the price is as long as the monthly payments fall within their budgets. Thus falling interest rates do not squeeze profits in the housing industry. However, this is a rather short-sighted view of deflation, leaving growing unemployment and escalating consumer debt out of the picture. And what about the scenario that the housing bubble may burst, too, as it probably will?

Another frequent criticism maintains, while confirming that losses occur in the liability column as a result of falling interest rates, that these are offset by gains in the asset column. Not only do falling interest rates increase the present value of debt, causing losses, they increase the present value of future earnings, too, leading to capital gains. Capital losses are compensated by capital gains — something, my critics say, I have overlooked. The trouble with this argument is that it ignores the accounting rule that prohibits putting values on assets higher than historic costs, regardless of any anticipated increase in future earnings. As the proverb says: "there is many a slip between cup and lip". Unforeseen liquidation of the enterprise would reduce all future earnings to zero. Why did Swissair fall out of the sky if it could capitalize its higher future earnings due to lower interest rates? Because it couldn't: by the time it would collect them it was no longer flying. The (upright) accountant has no choice. He must charge the increased cost of

liquidation to the liability column — without making any allowance for increased future earnings in the asset column. Net worth must be written down.

As profits are squeezed, firms are forced to retrench. They reduce inventory, causing prices to fall. Falling prices squeeze profits further. Some firms may be able to reduce labor costs through wage-cuts. Most will lay off workers. Either way, payrolls shrink, making demand weaken. This will reinforce the fall in prices. Many firms see their capital melt away and have to fold, in spite of low interest rates. You have to have capital in order to borrow. This is the mechanism whereby falling interest rates cause prices to fall.

To recapitulate: falling interest rates cause a blanket decrease in the net worth of the entire productive sector while the wide-spread capital losses go unreported. Instead, phantom profits are paid out, undermining capital further. Such is the true explanation of the wholesale failure of firms. In a depression collapsing demand is secondary; the primary effect is collapsing production due to fatal weakening of the capital structure, caused by falling interest rates.

The Linkage

Linkage is the name for the phenomenon that the price level and the rate of interest, apart from leads and lags, move in the same direction. Just as when a man is walking his dog on a leash: while it is possible for either one to get ahead of the other by a few steps from time to time, it is not possible for them to move in opposite directions for any great length of time. Linkage (also known as economic resonance) was recognized by several distinguished economists such as Knuth Wicksell, Wilhelm Roepke, Gottfried Haberler, Irving Fisher, and others. Apparently, Keynes himself recognized it under the name “Gibson’s paradox”. Economists who studied the phenomenon also agree that there is a causal relation between rising (falling) prices and rising (falling) interest rates.

But as far as the relation between rising (falling) interest rates and rising (falling) prices are concerned, they found linkage “puzzling”. Fisher went as far as saying that “it seems impossible to interpret this as representing a relationship with any rational basis”. He attributed the phenomenon to freak coincidence. In 1947 Gilbert E. Jackson in a little-known paper *The Rate of Interest* pointed out that causality works in both directions. He plotted the price level and the rate of interest in the same coordinate system with the horizontal axis representing time. The inflationary spiral appeared as a rising, and the deflationary as a falling trend of the curves. Inflationary and deflationary spirals alternated. Sometimes the price level led and the rate of interest lagged, at other times the rate of interest led and the price level lagged.

Jackson was writing at a time the country was still on the gold exchange standard, before the advent of the fiat dollar. We can augment his reasoning as follows. Speculation amplifies the oscillation of money-flows greatly. In 1971 the advent of the fiat dollar gave impetus to prices to rise. Speculators, ready to move in for the kill, kept buying commodities and hedged themselves by shorting the bond market. Commodity prices rose while bond prices fell. But this is the same to say that the rise in the price level caused interest rates to rise as well. The converse is also true. Rising interest rates, that is, falling bond prices, cause prices to rise as well. Speculators keep selling bonds and hedge themselves by establishing long positions in the commodity market. The inflationary spiral is on and assumes formidable dimensions.

When panic occurred in 1980, speculators switched allegiance. They closed out their short positions in the bond market and their long positions in the commodity market. They kept on buying bonds and hedged themselves with short positions in the commodity market. The speculative money-flow reversed. The deflationary spiral is definitely on, and we still don’t know where it will end.

Monetary policy: contra-cyclical or counter-productive?

The so-called contra-cyclical monetary policy invented by Keynes has been the guiding star of the Fed. Following the Keynesian prescription the Greenspan Fed is trying to contain weakening demand and falling prices through open market purchases of bonds, if need be, by climbing the yield curve. Contra-cyclical monetary policy backfires in the case of the deflationary spiral. To forestall the Fed speculators go long in bonds and hedge their exposure by going short in commodities. The Fed is helpless: it cannot stem the rising tide of money flowing to the bond market. As far as bond prices are concerned the sky is the limit. Interest rates in the United States will plunge to zero, as they have in Japan. Mr. Greenspan, like the Sorcerer's Apprentice, can make speculators charge, but has no idea how to stop them when enough is enough.

Incidentally, contra-cyclical monetary policy backfires in the case of the inflationary spiral as well. There the Fed's concern is rising interest rates getting out of hand. To rein them in and turn them back it resorts to open market purchases of bonds. Speculators correctly perceive that the new money so created will flow to the commodity market, reducing the risks of speculating. They go long and hedge their exposure by going short in the bond market. Once again, the Fed is helpless: it cannot stem the rising tide of money flowing to the commodity market.

To recapitulate, in a deflationary spiral the Fed combats weakening prices, causing the rate of interest to fall — which leads to still more weakness in prices. In an inflationary spiral it combats the high rate of interest, causing prices to rise — which leads to still higher interest rates. In either case, the contra-cyclical policy is counter-productive. For example, during the 1947-1980 inflationary spiral the rate of interest rose five-fold and the price level rose ten-fold in the United States, in spite (because?) of constant and vigorous contra-cyclical intervention of the Fed. In the present deflationary cycle that started in 1980 long term interest rates as measured by the yield on the 30-year Treasury bond have fallen by three-quarter (from 16 to 4 percent). So far apart from the initial fall in 1980 prices haven't fallen much, and some may have risen. But remember, Mr. Greenspan has just given the green light to speculators. Nobody knows how low prices will go by the time Mr. Greenspan and his speculators are through.

To recapitulate, the long-wave economic cycle is caused by huge money-flows oscillating back-and-forth between the bond and commodity markets, amplified by speculation and reinforced by the mindless and inept contra-cyclical monetary policy of the Fed.

Compulsive currency devaluations

Keynes was so obsessed with the idea of gold hoarding that he missed the key point that hoarding other goods, inevitable under the regime of fiat currency, is infinitely more menacing. Keynes is the prophet of anti-gold agitation. He preached that if the gold coin were taken away from "man's greedy palms", then there would be no economic contraction, no deflation. This was a monumental mistake, the kind only a doctrinaire can make. The Fed, blindly following the prophet, has brought the country to the brink of depression, fiat money notwithstanding. Gold is the philosopher's stone: in its presence hoarding is directed into its proper channels but, without it, the world becomes a plaything in the hands of speculators.

The deflationary spiral that started in 1980 has not run its course yet. Some liquidation of inventories has taken place, some producers have been eliminated. The worst may still lie ahead. Politicians and central bankers around the world congratulate each other upon their success of "squeezing inflationary expectations out of the system". They are unaware that, right now, they are fostering deflationary expectations. Otherwise they would not be tempting speculators so recklessly with reduced risks.

Mr. Greenspan has done nothing to neutralize the causes of world-wide deflation. The international monetary system is still the same rudderless ship it was in 1971, and it is still exposed to the same monetary storms, except for the direction of the gale that has changed course from inflationary to deflationary. This will lead to competitive devaluation of the fiat currencies of the world. The dollar has just been devalued, if not *de jure* then *de facto*. Other countries cannot afford to be priced out of the American market, and they will have to debase their currencies as well. Compulsive currency debasement is the hallmark of world depression. We know how ruinous that course is from the earlier episode in the 1930's. Yet the prospect of it is staring us in the face right now.

What is to be done?

The only road to stabilization and the removal of the threat of depression is through putting speculation into its proper place and confining speculators to fields where they can do no harm while they may do some good. Gold money eliminates foreign exchange and bond speculation not through the barrel of the gun but through the persuasion of reason. It confines speculation to the commodity market where supply is controlled by nature, not by governments or central banks.

The significance of the gold standard is not to be seen in its ability to stabilize prices, which is neither possible nor desirable. It is, rather, to be seen in its ability to stabilize interest rates at the lowest level that is still consonant with the state of the economy. The stabilization of interest and foreign exchange rates will then impart as much stability to the price level (and to all other important economic indicators) as is compatible with progress.

The solution is: open the U.S. Mint to the free and unlimited coinage of gold. Double standard in contract law should be abolished, together with bank privileges. Banks that cannot pay their sight obligations in gold coin should be allowed to fail. Nobody will miss them. Letting the saver withdraw gold coins (that is, bank reserves) whenever the rate of interest falls to a level that he considers unacceptable represents no danger, indeed, it would nip malevolent speculation in the bud. Benign bond/gold arbitrage would replace malignant bond/commodity speculation. Since the former is self-limiting and the latter is self-aggravating, economic stability would be restored. *Time has come to conclude, for once and all, that the wild experiment with fiat currencies has failed, and failed completely. It should be terminated forthwith before it causes further damage to the economy.*

The alternative is to continue the experiment. Naturally, Mr. Greenspan is in favor of that course. The consequences are too horrible to contemplate: unemployment more devastating than that of the 1930's, wholesale bankruptcies of productive enterprise, competitive currency debasement, collapse of the international monetary system, construction of unscalable protective tariff walls, world war in which governments are hoping to find the escape route from economic chaos.

~ NOTE ON RUNAWAY VIBRATION ~

The phenomenon of vibration is studied in physics. The most common varieties are even vibration (oscillation) and damped vibration, according as the amplitude remains constant or it is decreasing exponentially. But there is also a third variety, not as well known, called runaway vibration, where the amplitude is increasing exponentially. The collapse of the Tacoma suspension bridge in the State of Washington in 1940 was an example. Gusting winds caused the bridge to vibrate at one of its harmonic frequencies. The increasing amplitude of the runaway vibration ultimately caused the suspension cables to snap, and the whole structure was plunged into the river. The event has been preserved on film - it must be seen to be believed.

In general, the small parcels of energy represented by each thrust would get dissipated harmlessly through damping. In the case of resonance, however, not only are they not dissipated, they are allowed to be built up to a formidable force capable of causing huge destruction.

Resonance in economics, no less than in bridge design, is a problem to reckon with. I have discussed linkage in my talk *Kondratieff Revisited*. The price level and the rate of interest move together up or down, as they resonate with huge oscillating speculative money flows to and fro between the bond and commodity markets. Bond speculators try to maximize their profits. For them the problem is correct timing: they want to be the first to switch positions when the expected turn of the flow of money materializes. This is just the point where the runaway vibrator starts spinning out of control. As soon as speculators find that point, the oscillating speculative money-flows will become too big and too destructive for anybody to control, and they will drown the economy.

References

The Rate of Interest, address by Gilbert E. Jackson at the Annual Meeting of the Dominion Mortgage and Investments Association in Waterloo, Ontario, Canada, on May 29, 1947. Reprinted in: Bulletin #132 (1947) by Melchior Palyi (archived in the Library of the University of Chicago).

History of Economic Analysis by Joseph A. Schumpeter, 1954, New York: Oxford University Press

Deflation: Retrospect and Prospect by Antal E. Fekete, Monograph #45, April, 1986, Committee for Monetary Research and Education, 10012 Greenwood Court, Charlotte, NC 28215