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Who's running this ship, anyway?

This is a response to Ed Finn's article in the July/August, 2009, issue of the CCPA *Monitor*, "The Left Is Left Behind."

"If the left is right, politically, why isn't it more popular?

"Most voters still don't see socialism as a preferable alternative, either economically or politically. But that's a failing of socialist leaders, not of socialism itself." – Ed Finn

There is, broadly speaking, a division between those who support a society led by elites who command or control most of society's wealth and use it in their own interests, and those who prefer a society led by progressively-minded individuals who want society's wealth used in the interests of the members of society as a whole. Use of labels such as socialist, conservative or neo-liberal do not always help a discussion because they can mean different things to different people. I try to avoid their use where possible.

In my experience campaigning for the NDP, the explanation I most often heard at the door for not voting NDP was very straight forward, namely: "the NDP (and by extension all 'left' parties) don't know how to handle money and would bankrupt us." In the 2004 election, after years of letter writing and speaking at conferences by some members of COMER (the Committee on Monetary and Economic Reform), the NDP platform included a simple statement that the NDP would use the Bank of Canada (the Bank) to carry some of the public debt as it used to do (prior to 1974). The NDP General Secretary wrote to me on May 12/04 to say that "the platform had been set in February/04, and use of the Bank of Canada was not included and would not be." The next day the NDP Finance Critic, Judy Wasylycia-Leis, wrote to thank me for the information I had sent on the Bank and said it would be included in the platform – and it was, but nary a word about it passed the lips of Jack Layton during the campaign. Nevertheless, because it was in the platform I felt free to talk about it while campaigning.

The area in which I was campaigning had many Liberal supporters and usually voted Liberal. However, in 2004 many of the Liberal supporters I spoke to were in a quandary; they didn't want to vote for Paul Martin because of the sponsorship scandal and would not vote for Stephen Harper. They did not know what to do so I said, why not vote NDP? When they replied that the NDP didn't know how to handle money and would bankrupt the country doing all the things it said it would do, I referred to the NDP platform plank on use of the Bank of Canada explaining that the Bank was owned by the government and that all the interest paid into it was returned to the government minus a small amount for administration. In this way an NDP government could do the things it said it would do without building a huge interest-bearing debt.

In contrast I told them how Liberal and Conservative governments had increased the federal debt over 3,000% ($18 billion to $588 billion) between 1974 and 1997 during which time the government did not use the Bank to carry public debt as it had prior to 1974, and that we were paying over $63 billion a year on interest as a result. (I also mentioned that $63 billion is 630 times the $100 million sponsorship scandal that was getting so much attention, and briefly talked about reinstating the statutory reserves to control inflation. I was pleasantly surprised at how quickly the basic concepts were grasped and,

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later, that the results for that poll showed a marked increase in NDP support.

What this says to me is that the "left" could get a lot more support if it showed how it could achieve its goals by using the government's own bank to finance public investment. There is much irony in the NDP's neglect to implement, or even talk about, the resolution adopted at its 1995 leadership convention to increase Bank of Canada funding of public debt. We have to ask, who is running this ship; who is pulling the strings? Why do political leaders appear to be afraid to even talk about using the Bank to finance public debt? Why aren't more economists talking about it? What are they afraid of? Why aren't unions demanding that the Bank be used to finance massive public infrastructure development and investment in education and health services? Surely the jobs so created and increased skill development would dramatically reduce unemployment!

It is ironic that the chase for power has not yet brought the NDP to power while the resolution on the Bank, which would show Canadians that the NDP *does* understand money and how to control it's supply, is ignored. More ironically the Liberals and Conservatives, who are responsible for putting the nation into a deep, deep financial hole, have shown that they do *not* know how to control the supply of money.

Other organizations which also shy away from discussing use of the Bank to finance public investment include the Council of Canadians (the Council), the Federation of Canadian Municipalities (FCM), the Canadian Labour Congress (CLC) and the Canadian Centre for Policy Alternatives (CCPA).

At its 1994 Annual General Meeting, the Council of Canadians resolved to carry out "an education and lobbying program on economic issues including the links between economic policy and social and environmental issues and the need to reassert control over our financial sector." Among other things the resolution referred to the "explosion of debt" resulting from "loss of public control over the Canadian financial system," linking the attack on social programs to the demands of the financial sector.

However, like the NDP, the Council has ignored its resolution. While the Council has campaigned on issues of economic policy and its relationship to social programs, employment, the environment and public pensions, how tax cuts undermine the ability of our governments to provide social services, protect the environment and stop the growing polarization between rich and poor, it has avoided the one step which would remove the influence that private money has over government decisions namely, *use of the Bank of Canada to finance public debt* – not only for the federal government but for provinces and municipalities, too. The government is up to its eyeballs in debt, is taking on more and crying about how this will be a burden on our children and grandchildren, but continues to borrow as usual from the private sector.

The Federation of Canadian Municipalities (FCM) adopted a resolution in 2001 on using the Bank to finance municipal infrastructure, but then rescinded it in 2005. This back-peddling carries an interesting and revealing tale. In April, 2001, the City of Kingston adopted a resolution supporting use of the Bank to finance public infrastructure and to pay off public debt. About the same time, the District of Squamish in BC adopted a similar resolution in addition to those earlier adopted by about a dozen other BC and Ontario municipalities including the City of Toronto. The Squamish and Kingston resolutions, and possibly some of the other BC resolutions, were forwarded to the FCM for consideration by their board of Directors in September, 2001. The FCM adopted resolution FIN01.2.06CA:

"That the Federation of Canadian Municipalities urge the federal government to:

"(a) instruct the Bank of Canada to buy securities issued by municipalities and guaranteed by the federal government to pay for capital projects and/or to pay off current debt; and

"(b) refund to municipalities any interest paid by municipalities to the Bank of Canada."

Weeks and then months went by. Follow-up letters were sent to the FCM by some COMER members. Then, in September, 2005, the Board of the FCM rescinded its earlier resolution by re-categorizing it as "not within municipal jurisdiction," adding that the government was "Providing municipal governments with additional financial resources, starting with refunding 100% of the GST…and sharing a portion of the federal gas tax…key elements of the New Deal." It further stated that, "In FCM's most recent discussions with the Bank of Canada, the Bank clearly stated that it is not a commercial lending institution…. Does not act as a lender to governments except in the most unusual of circumstances…and… While the Bank could conceivably make a

loan to a municipal government, it could only do so through a provincial government and only for short periods…."

As a member of the FCM board remarked on hearing that the resolution was "not within municipal jurisdiction." "If getting loans for its infrastructure is 'not within municipal jurisdiction,' what the hell is!" As for the statement ascribed to have come from the Bank:

– No one has suggested that the Bank is a commercial lending institution;

– The Bank has consistently purchased government securities, ranging from a low of 3.7% in 1936 to a high of 20.8% in 1975, and continues to do so today;

– The Bank's admission that "while it could conceivably make a loan to a municipal government, it could only do so through a provincial government …." serves to confirm that financing for municipal governments through the Bank can be done. Furthermore, the *Bank of Canada Act*, section 18(c) does not limit loans to short periods.

Regarding the "new deal," the FCM calculated that up to and including 2005-06 the two initiatives had provided about $1.87 billion to municipal governments, adding that both initiatives would continue to at least 2009-10 while the gas tax transfer would continue for two years beyond that. Contrast this amount to the more than $123 billion municipal deficit, reported in the November, 2007, "Municipal Infrastructure Report" which shows the deficit increased from $60 billion in 2003 to $123 billion in 2007.

The Canadian Labour Congress represents 3.2 million Canadian workers. It has organized a campaign for change to "amplify the voices of the…victims of this crisis until our governments hear them and… give people an outlet for their anger and frustration." Through its president, Ken Georgetti, the CLC has written extensively about the 1.6 million unemployed and part-time workers. It wants the government to "launch a major public investment program to create good jobs in infrastructure, manufacturing and public services, and link this program to a Made-in-Canada procurement policy" but there has been little impact to date from the federal government's stimulus package on the unemployment numbers. Government funding for such a program is not sufficient to provide the massive investment needed for infrastructure renewal (e.g., $123 billion for municipal infrastructure). Added to this are the billions needed for education, retraining, health services and social support services.

The government has used the debt and interest as an excuse for not putting up more money. The current proposal of the government to run deficits to pay for these things will be financed by the private sector which will add to the interest we are now paying. The alternative to private financing is to finance public investments through the Bank of Canada at zero interest. Not only would this lower taxes for Canadians and

When New Research Rattles Old Certainties

A clearer view of the worst methane emissions could come next year when Japan plans to start releasing data from Gosat, a satellite that began orbiting the Earth in January. It may be able to identify the top hot spots within a few miles.

"That might increase pressure on countries with particularly large leaks of hothouse pollutants.

"As the biggest methane emitter, Russia has begun seeking high-tech solutions. In April, for Example, Gazprom, the Russian Defense Ministry and an Israeli aerospace company began discussing use of miniature remotely piloted helicopters to monitor pipeline leaks.

"But gadgets alone will not halt the vast exhalation of methane from Russia, environmentalists say. There is some hope that a successor to the 1997 Kyoto climate change pact will include more incentives for money to flow to Russian methane-reduction projects.

"Starting around 2000, BP began introducing methane-catching techniques at 2,300 well sites in New Mexico. At well after well gas that would have otherwise escaped now flows through meters that field crews call the 'cash register.'

"Among other actions, BP engineers have fine-tuned a system for purging fluids that can stop up wells. This uses the pressure of gas in the well to periodically raise a plunger through the vertical well pipe. This removes the liquids but typically allows gas to escape.

"The new computerized process, which BP calls smart automation, tracks well-pressure and other conditions to more precisely time the plunger cycles in ways that avoid gas emissions. From 2000 to 2004, emissions from BP wells in the region dropped 50%, the company says. By 2007, they had essentially ended.

"On average, installing the system has cost about $11,000 per well, but they have returned three times that investment, said Reid Smith, an environmental adviser for BP working on the project.

"'We spend a lot of money to get gas to the surface,' Mr. Smith said, 'It makes a huge amount of sense to get all of it through the sales meter.'"

There is still another lesson for our governments and economists at large in this exemplary handling of a complicated situation. They were not satisfied to consider that air-pollution could be taken as a linear equivalence – the so-called "hot-house effect" – and ended up much more powerfully dangerous than the hot-house effect alone could ever be.

Their minds were opened to "those other factors" that contributed, it turned out, pollution far more powerful than the hothouse effect that had occupied the center of the stage in official concerns.

Another instance of such ignored but important factors that governments' and universities' minds must open up to: economists, especially those in official service, don't ever question that prices going up might reflect quite other vital factors than too much demand and not enough supply which is taken to be the sole possible cause of higher prices. However, the ever accelerating urbanization, the need for an ever better-educated population, and indeed the longer life-spans are other even more important factors than an excess of demand over available supply, which is the only thing that could rightfully be tagged as "inflation." A defective accountancy that writes off investment in a single year while "amortizing" the government spending for its investment in human investment over the likely period of usefulness of the investment but writes of the asset value of the investment in a single year distorts society's accountancy and brings on crises that today – confirming COMER's warnings – threaten society's survival.

William Krehm

Canadian business, it would also reduce the control of lenders and make it possible to do what needs to be done. So far the CLC has not supported use of the Bank to carry public debt.

Not too many years ago, the Canadian Centre for Policy Alternatives would include in its annual Alternative Federal Budget (AFB) a statement about using the Bank of Canada to carry some of the government's debt. In 1999, for example, it spoke of the benefits from "refinancing of a share of outstanding debt (2% per year for 5 years) through the government's own bank, the Bank of Canada, instead of relying on commercial lenders." After 1999 I did not see any mention of this, so I wrote and asked why. The reply was that "There was lots of money in the system, and discussion of using the Bank of Canada would only confuse the issues." This ignores the fact that the government uses the debt and the huge interest costs as an excuse for cutting more social programs – and is left vulnerable to pressures from banks and large corporations. The CCPA should get back on board.

When the government sells a bond it is borrowing from the purchaser of that bond; it is as simple as that! When the government borrows from the Bank of Canada there is effectively no interest on that debt because interest paid comes back to the government as a dividend. In this way, the government can borrow whatever is necessary to get the economy moving again without hanging a huge debt burden on the necks of future generations, while inflation can be controlled through reinstatement of the statutory reserves. We pay enough interest now on the debts of our three levels of government *(over $63 billion a year or $175 million a day)* for money borrowed privately instead of from the Bank of Canada. We don't need any more privately financed public debt! This procedure can be used to provide cash for our three levels of government to invest in public services such as housing, infrastructure, education, research, the CBC, health care, recreation facilities etc. Investments of this nature provide big dividends, some of the biggest coming from education and research. Among others who support government investment in public works to get out of the recession is David Dodge (former Governor of the Bank of Canada).

So what to do? Press the organizations mentioned above to talk about this issue – and, *vote only for candidates who support use of the Bank of Canada to carry public debt!*

Richard Priestman

On the Sanctity of Maths

From a maths and physics course snipped incomplete in the depth of the Depression of the 1930s I carried away a bit of knowledge in that field. And a sense of the sanctity of the subject has never left me. That in fact has provided the most powerful means of distinguishing fact from fiction in the rollicking world of economists. *Amongst much else it rules out the fiction of a supposedly self-balancing world where equations can be read backwards as well as forwards.*

It laid bare the attempt to turn around relationship in a way that confused cause and effect; And that is why the article in *The Wall Street Journal* (07/11, "Mathematics – Russia's Conquering Zero" by Masha Gessen) had special wings of promise: "Moscow – It was no accident that, while some of the best mathematical minds worked to solve one of the century' hardest problems – The Poincare Conjecture – it was a Russian mathematician who, early this decade, finally triumphed.

"Decades before, in the Soviet Union, maths set a premium on logic and consistency in a culture that thrived on rhetoric and fear; it required highly specialized knowledge to understand, and worst of all, mathematics lay claim to singular and knowable truths – when the regime had staked its own legitimacy on its own singular truth. All this made mathematicians suspect.

"But three factors saved math. First, Russian math happened to be uncommonly strong right when it might have suffered most, in the 1930s. Second, math proved too obscure for the sort of meddling Joseph Stalin liked most to exercise: it was simply too difficult to ignite a passionate debate about something as inaccessible as the objective nature of natural numbers (although just such a campaign was attempted). And third, at a critical moment math proved immensely useful to the state.

"Three weeks after Nazi Germany invaded the Soviet Union in June 1941, the Soviet air force had been bombed out of existence. The Russian military set about retrofitting civilian airplanes for use as bombers. The problem was, however, the civilian airplanes were much slower than the military ones, rendering moot everything the military knew about aiming.

"What was needed was a small army of mathematicians to recalculate speeds and distances to let the air force hit its targets.

"The greatest Russian mathematician, Andrei Kolgomorov, led a classroom of students, armed with adding machines, in recalculating the Red Army's bombing and artillery tables. Then he set about creating a new system of statistical control and prediction for the Soviet military.

"Following the war, the Soviets invested heavily in high-tech military research, building over 40 cities where scientists and mathematicians worked in secret. The urgency of the mobilization recalled the Manhattan Project – only much bigger and lasting much longer. Estimates of the number of people engaged in the Soviet arms effort in the second half of the century range up to 12 million people, with a couple of million of them employed by military-research institutions.

"These jobs spelled nearly total scientific isolation. For defense employees, any contact with foreigners would be considered treacherous rather than simply suspect. In addition, research towns provided comfortably cloistered social environments but no possibility for outside intellectual contact. The Soviet Union managed to hide some of its best mathematical minds away from plain sight."

After Stalin's Death, the Opening of a Tiny Crack

"In the years following Stalin's death in 1953, the Iron Curtain began to open a tiny crack – not quite enough to facilitate much-needed conversation with non-Soviet mathematicians but enough to show off some of Soviet mathematicians' proudest achievements.

"By the 1970s, a Soviet math establishment had taken shape. A totalitarian system within a totalitarian system, it provided its members not only with work and money but also with apartments, food, and transportation. It determined where they lived and when, where and how they traveled for work or pleasure. To those in the fold, it was a controlling and strict but caring mother: her children were undeniably privileged.

"Even for members of the math establishment, though, there were always too few good apartments, too many people wanting to travel to a conference. So it was a vicious back-stabbing little world, shaped by intrigue, denunciation, and unfair competition.

"Then there were those who could never join the establishment: those who happened to be born Jewish or female, those who had the wrong advisers at university or those who could not force themselves to join the Party. For these people, 'the most they could hope for was being able to defend their doctoral dissertation at some institute in Minsk, if they could secure connections there,' says Serge Gelfand, publisher of the American Mathematical Society – who also happens to be the son of one of Russia's top 20 mathematicians, Sergei Gelfand, adds, a student of Mr. Kolmogorov. Some Western mathematicians even came for an extended stay because they realized there were a lot of talented people around This was unofficial mathematics.

"One such visitor was Dusa McDuff, then a British algebraist and now a professor emerita at the State University of New York at Stony Brook. She studied with the older Mr. Gelfand for six months, and credits that experience to opening her eyes both to what mathematics really is: a wonderful education. 'Gelfand amazed me by talking of mathematics as though it were poetry.'

"In the mathematical counterculture, math 'was almost a hobby,' recalls Sergei Gelfand. 'So you could spend your time doing things that would not be useful to anyone for the nearest decade.' Mathematicians called it 'maths for math's sake.' There was no material reward in this – no tenure, no money, no apartments, no foreign travel; all they stood to gain was the respect of their peers.

"Math not only held out the promise of intellectual work without state interferences (if also without its support) but also something found nowhere else in late-Soviet society: a knowable truth. 'If I had been free to choose any profession, I would have become a literary critic,' says Georgii Shabat, a well-known Moscow mathematician. 'But I wanted to work, not spend my life fighting the censors.' The search for that truth could take long years – but in the late Soviet Union, time seem to stand still.

"When it all collapsed, the state stopped investing in math and holding its mathematicians hostage. It's hard to say which of these two factors did more to send Russian mathematicians to the West, primarily to the US, but leave is what they did. It was probably one of the biggest outflows of [brain power] the world has ever known. Even the older Mr. Gelfand moved to the US and taught at Rutgers University for nearly 20 years, almost until his death in October at the age of 96. The flow is probably unstoppable by now. A promising graduate student in Moscow or St. Petersburg. unable to find a suitable adviser at home, is most likely to follow the trail to the US.

"But the math culture they find in America, while less back-stabbing than that of the Soviet math establishment, is far from the meritocratic ideal that Russia's unofficial math world has taught them to expect. American math culture has intellectual rigor but also suffers from allegations of favoritism, small-time competitiveness, occasional plagiarism scandals, as well as the usual tenure battles, funding and administrative pressures that characterize American academic life.

"This culture offers the kinds of opportunities for professional communication that a Soviet mathematician could hardly have dreamt of, but it doesn't foster the sort of luxurious, timeless creative work that was typical of the Soviet math counterculture.

"For example, the American model may not be able to produce a breakthrough like the proof of the Poincare Conjecture, carried out by the St. Petersburg mathematician Grigory Perelman.

"Mr. Perelman came to the US as a young post-doctoral student in the early 1990s and immediately decided that America was math heaven, he wrote home demanding that his mother and his younger sister, a budding mathematician, move here. But three years later, when his hiatus was over and he was faced with the pressures of securing an academic position, he returned home, disillusioned.

"In St. Petersburg he went on the (admittedly modest) payroll of the math research institute, where he showed up infrequently and generally kept to himself for almost seven years. one of the greatest mathematical discoveries of at least the last hundred years. It's all but impossible to imagine an American institution that could have provided this kind of near-solitary existence, free from teaching and publishing with the people who practice it. (He now lives with his mother on the outskirts of St. Petersburg.)

"A child of the Soviet math counterculture, he still held a singular truth to be self-evident: math as the ultimate flight of the imagination, is something money can't buy." Masha Gessen's latest book is *Perfect Rigor: A Genius and the Mathematical Breakthrough of the Century,* a story of Grigory Perelman and the Poincare Conjecture.

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"Besides Grigory Perelman and the Poincare Conjecture, there are numerous other famous math solvers, and there are still problems to be solved.

"Andre Wiles (1953-). This Princeton mathematician resolved the most famous problem in numbers – Fermat's last Theorem – in 1995.

"Leonhard Euler (1707-1783). A Swiss mathematician who made so many contributions particularly in the early foundations of calculus, that it gets hard to keep track of all that's named for him.

"Kurt Goedel (1906-1978). This Austrian logician demonstrated that any reasonably powerful system contains true statements that can't be proven."

The Riemann Hypothesis

"To the enduring befuddlement of mathematicians, prime numbers – numbers divisible only by themselves and 1 – exhibit no pattern at all – 2, 3, 5, 7, 11, 13 are the first few. They aren't very evenly spaced but get scarcer the further out you go. No formula can tell you what the next one will be. In 1859, the German mathematician Bernhard Riemann discovered that a function – known now as the Riemann zeta function – appeared to give signposts – 'zeros' of the function – all lie on a single straight line out to infinity, that none are flung off in strange places. In the 150 years since, no one has proved his hypothesis: All non-trivial zeros of the Riemann zero function have a real part equal to rows of x's." (Charles Forelle)

What is notable, as we have and others have proved otherwise and elsewhere over the past forty years, that is enough to reveal the self-balancing market as taught in our universities and forced down the throats of academics as a heap of nonsense.

But that figure was only what survived the erosion process. We still have to test its equivalent for the investment in human capital. For this we must integrate the increase and see where it leads us. But there are a couple of key points that we must keep in mind: the rate of growth of government in human capital exceeds substantially that of physical investments. That is because what is taken to be the expenditure of human capital has many of the characteristics of reinvestment: the children of educated parents tend to be healthier, easier to educate, quite apart from strictly genetic factors. That would warrant a higher multiple of return.

Thereby there is a tale or two that warrants telling: At the end of World War II, Washington sent to Japan and Germany hundreds of economists to study the extent of the destruction in order to foretell how long it would be before the two defeated great trading powers, could resume their trading careers in full. Sixteen years later one

How Different the Standards that Gave Us Our Present World Crisis and Those in the World of Serious Scholarship

The Globe and Mail (26/08, "From autism to determinism, science to the soul, Norway rewards Canadian thinker for his curiosity" by Michael Valpy) tells the story of an enquiring Canadian Ian Hacking, a 73-year-old professor of both University of Toronto and College de France in Paris. "Like a beagle following his nose, Canadian philosopher Ian Hacking has followed his curiosity for 45 years into the intellectual puzzles of physical and social science. And yesterday, Norway's parliament rewarded his work with an academic prize worth $750,000.

"He has written books on physics, the history and philosophy of the mathematical field of probability and statistical inference, autism, obesity, multiple personality disorder and other psycho-pathologies, child abuse, memory and the soul, weapons research, free will, determinism and the phenomenon of people classifying each other and are changed by the classifications – what he calls 'making up people.'

"His 1990 book, *The Taming of Chance,* was rated by Random House publishers' Modern Library as one of the best 100 nonfiction books of the 20th century.

"A reviewer of another of his books wrote that reading it was 'like a casual visit to the British Museum.' In one room we find studies of suicide by Quetelet and Durkheim, in another an assessment of the French judicial process of the time of Condorcet, and in yet another the demographics of Prussian Jews during a wave of anti-Semitism in the 1870s.

"University of Toronto president David Naylor called the Vancouver-born philosopher 'one of the great scholars in the history of the University of Toronto.' He has transformed how we think about the concepts of probability and chance and made major and subtle contributions in topics such as the classification of mental illnesses and the nature of objectivity.

"Prof. Hacking began an interview in his Toronto back garden yesterday by pointing to a wasp flying past a rose, and then describing the physics principle of non-locality, the direct influence of one object on another distant object. It was the subject of a talk he had heard earlier in the day by University of Geneva physicist Nicolas Gisin, who received a University of Toronto prize for quantum mechanics research.

"Just suppose, Prof. Hacking said enthusiastically, that the whole universe is governed by non-locality, that everything in the universe is aware of everything else. 'That's what you should be writing about,' he said. 'Not me.'

"I'm a dilettante, My governing word is 'curiosity.' That's why I'm fascinated by this work on non-locality. I would be very happy if you were to note that one of the features of me is that I'm curious. Or I would really be happy if you were to say up front was that the first thing I wanted to talk about was another prize given at the University of Toronto this very day."

"U. of T. philosopher Ronald de Souza said Prof. Hacking once told him that he was good at starting things.

"In his book, *Rewriting the Soul: Multiple Personality and the Sciences of Memory,* Prof. Hacking argued that possession of memory is possession of the soul, and the soul is a form of self-consciousness or an awareness of how we have created ourselves, the politicization of personal memory.

"'Child abuse, and repressed memories of child-abuse,' he has written 'are supposed to have powerful effects on the developing adult. What interests me is less the truth or falsehood of that proposition than the way in which assuming it [to have taken place] leads people to describe their own past anew. Each of us becomes a new person as we re-describe the past.'"

W.K.

of these, Theodore Schultz, wrote a book in which he acknowledged how wrong he and his colleagues had been. The reason was 'we had underestimated the detail that the human capital had come out of the struggle almost intact.' For this insight Schultz was celebrated and decorated, but within a few years wholly forgotten. At the moment I am afraid that COMER is probably the only organization to remember his name and the stroke of real genius in his conclusion – probably the greatest positive lesson to come out of the Second World War.

What we are dealing with is in fact a reinvestment of a prepaid reinvestment.

Of course this has an immense relevance to the brambles in which President Obama seems to be losing his once announced goals.

Whatever it was that Stratford-on-Avon spent teaching one Billy Shakespeare the glories of the English tongue and the follies of governments is still bringing in revenue, as is what Lincolnshire may have invested in teaching Izzy Newton algebra.

Your automobile local is the local representative of the first really modern manufacturing labor body. As thus it represents an inheritance that must not cast away. It will lead us to an adaptation of the manufacturing tradition that must not be lost but preserved for modern needs. The inheritance that it brings us will remind us that human capital is an invariable and fungible capital, precious, adaptable, once lost not readily recovered. Your union is an invaluable medium for the retraining, the reeducating and the preservation of human capital. We must not lose that inheritance or sell it short.

Where is the money coming from? From recognizing that the prepaid human capital whose reinvestment in further better-updated human capital is the most productive a government can make.

William Krehm

Is Microsoft's Page of Glory Over, Victim of the Economic Crisis and Generational Inertia?

I must begin this purely exploratory discussion with an apology. Feeling at home with computers is to a disconcerting extent a generational thing, and I am just now 96. Though I make considerable use of computers I will never be as much at home with them as my grandchildren. The fact is, apart from the effects of the economic crisis, some such generational disadvantage seems to be afflicting Microsoft itself.

I am sensitive not only to generational biases, but the degree to which the basic technological transformation witnessed by a particular generation will tend to invade and shape its views of humanity, and of its past and its future. That makes a member of my generation particularly disadvantaged in assessing what significant changes are under way in the world of computers.

My reason for raising the subject at all is an impressive review of Microsoft's position in the world of the computer in *The New York Times* (10/18, "Forecast for Microsoft: Partly Cloudy – Microsoft and its CEO Steven A. Ballmer, talk about 'three screens and a cloud' – computers, phones, and TVs, linked to common services"). The writer is Ashlee Vance: "Ray Ozzie, the chief software architect at Microsoft, bristles when asked whether people think that new versions of his company's software – like Windows and Office – are exciting.

"It's tremendously exciting,' he exclaims defensively, wheeling back from an office table and allowing his hands to flail. 'Are you kidding?'

"Normally subdued and cerebral Mr. Ozzie inhabits a spacious office at Microsoft's headquarters here that feels equal parts Ikea showroom and computer museum. His shelves and desks are uncluttered and one of the first IBM personal computers ever made sits centered like an artifact atop a long, squat bookcase.

"If only the world – or at least the business world – were so immaculate and neatly organized. But Mr. Ozzie and his colleagues at Microsoft recognize, of course, that very little in the technology universe stays the same. "Technology companies either move forward, too, or they die. They become less relevant.

"And according to Mr. Ozzie, we have entered an age that's a far cry from that of the PC enshrined on his altar to beige-box antiquity. Consumers and workers have been gripped, he says, by a 'gizmo revolution.'

"But gizmos are only half the battle for Microsoft. True, fashionistas obsess over whether a new laptop will fit into their purses and what type of fashion statement the device will make. Corporate road warriors, meanwhile, exude pride as they whip ultra-thin computers with exotic finishes out of their satchels. Yet the most desirable devices these days are those that also allow information addicts on the move to untether themselves from the desktop PC and communicate through the so-called 'cloud.'

"With the arrival this week of Windows 7 and a host of complementary, slick computers, Microsoft intends to undermine those Apple ads that mock PCs and their users as stumbling bores. Mr. Ozzie, who plays the role of visionary and strategist at Microsoft, says Windows 7 will let PCs keep pace with other computing devices and, finally make them sexy.

"In a play for its piece of the cloud, Microsoft plans to release a software platform, Windows Azure, next month that represent its bid to lure businesses with online services. While late to cloud computing in spots and a lackluster participant in the mobile market, Microsoft, Mr. Ozzie says, has a shot at reinventing itself and moving beyond the desktop.

"'This gives us an opportunity as a software vendor to refresh our value proposition,' he says. 'I just think it's an exciting time for Microsoft.'

"For many years Microsoft and its leaders could make sweeping statements like this with little public push-back. Microsoft embodied the technological industry and was the grand arbiter of the tools people used to conduct business and navigate the digital era.

"These days, however, Microsoft has legions of doubters. While it still commands a prominent and profitable position in computing, brand experts say consumers stumble when trying to define what the company stands for and whether it can create a grander technological future."

And make no mistake firms who determine the future technology of a society, determine how they look at much else in the heavens and upon this earth.

"'Microsoft sort of disappeared from the scene,' says Regis McKenna, a Silicon Valley marketing and strategy expert. 'Every once in a while, they have a delayed Window release or something like that. By and large, I think the marketplace is focused on what Google and Apple are up to.'

"'Microsoft is trapped in their own psy-

chosis that the world has to revolve around Windows on the PC,' says Marc Benioff, the CEO of Salesforce.com, which competes against Microsoft in the business software market. 'Until they stop doing that, they will drag their company into the gutter.'"

Welcome or Not, the Gizmo Revolution has Taken Over

"While Mr. Ozzie welcomes the gizmo revolution, much of what it appears to entail runs counter to Microsoft's historical strengths. The revolution stretches well beyond a fascination with the aesthetic appeal of a computing device; it also marks a transition to the consumer, not the office worker, as the dominant force shaping the tech landscape.

"Consumers now buy more PCs than businesses do, and their wants and desires for better-looking devices have invaded the cubicle. The current breed of consumer has shown an ability to turn something like the Apple iPhone into an overnight sensation, then demand that companies embrace it. Google, meanwhile, uses its influential Web search and YouTube properties to introduce people for its e-mail, document and browser software, and Facebook now provides inspiration to business software makers.

"For Google, winning over consumers is crucial to its strategy of infiltrating corporations and deflating Microsoft's core business products division. 'We are the next generation,' says Dave Girouard, the president of Google's business products division. 'The big difference in technology is the pace of innovation.'

"While the Internet and network-connected devices are anything but novel, the ability to snatch data anywhere off of the Web – the so-called cloud computing – has started to catch on with consumers and businesses in a more meaningful way. As such services become more popular, Microsoft's grip on computing loosens, critics say.

"'They are not the company they once were in terms of market position,' says Bruce R. Chizen, a former Microsoft employee and former CEO of Adobe Systems, the publishing software maker. 'They no longer have a monopoly that is critical to the future of computing.'

"Mr. Ballmer, Mr. Ozzie, and others at Microsoft see things rather differently, and for the last year have argued that coming software releases for PCs, data centers, mobile devices and game consoles will remain a pivotal force on the tech. landscape.

"Mr. Balmer contends that Microsoft is the only company prepared and positioned to merge computing from both ends – the desktop and the cloud. 'We're just investing more broadly than everybody else,' adding that, when it comes to software, 'I want us to invent everything that's important on the planet.'

RENEW TODAY!
(SEE PAGE 2)

"Pundits and investors are ready to judge how well Mr. Ballmer lives up to these claims, and his tenure may ultimately be decided by how well his enterprise floats up to the cloud.

"Like almost all companies in the PC industry, Microsoft has been punished by a historic decline in computer sales during the recession. Over the past year, it has endured a string of humbling company firsts. In January it began laying off up to 5,000 people – its first-ever broad personnel cuts.

"Despite such setbacks, Microsoft continues to produce profits that are the envy of the technology industry. In July, it ended the fiscal year with a 3% drop in revenue, to $58.4 billion, still bringing in a $14.6 billion profit. Microsoft has a war chest of $31.45 billion including cash and short-term investments, and its shares have recovered from a low of $14.87 in March and now trade at $26.50.

"Microsoft does, in fact, have a dazzling array of long-term bets. It has ear-marked close to $10 billion for research and development over the next year. These funds cover work in desktop software, data center software, developer tools, health care systems, video game consoles and games, music players, phones and phone software, Web properties, and office collaboration products. In Internet research Microsoft more often than not finds itself playing the role of following, trying to buy its way into markets the other companies dominate.

"According to a new CoreBrand study, Microsoft's reputation of its management and investment potential has been declining for over a decade, with the drop-off accelerating over the last five years.

"Microsoft released the Windows Vista operating system in 2007 to widespread ridicule. The software arrived years late and had lost many of its planned ground-breaking features. Microsoft also faced hurdles in the mobile phone market. For many years, it has sold software for a broad array of phones, but Mr. Balmer has been disappointed with his mobile division, particularly when devices like the iPhone blindsided his company.

"While Microsoft has tried to bolster its phone business through acquisitions and internal development, it remains months away from announcing the fruits of a project, code-named Pink, to revitalize its phone technology. And former insiders claim that Pink, like so many Microsoft efforts, has been dragged down by bureaucracy and compromise.

"Microsoft says the cloud acts as a natural complement to its traditional software products, and the company often talks about the 'three screens and a cloud' strategy – which covers computers, phones, and TVs all connected to common services.

"'I would say there's clearly a change in the fundamental platform of computing,' Mr. Ballmer says. 'The cloud is not just the Internet. It's really a fundamental computing resource that's getting thought about and looked at in a different way.'

"But the cloud presents Microsoft with a host of challenges to its time-tested model of selling desktop and computer server software for lucrative licensing fees. Fast-paced rivals like Salesforce, Amazon and Google hope to undercut its prices while adding software features every few weeks or months or years.

"Rivals now simply see Microsoft as a laggard rather than hitting it with the Evil Empire criticisms so familiar in the 1990s. In its place stands Google, which now has Microsoft's mantle as a game-changing technology behemoth and is also increasingly perceived as a dominant competitor whose power warrants concern.

"Even Microsoft's loudest critics consider the company itself durable.

"'They won't fade away as long as there are PCs,' Mr. Benioff says. 'But they are not delivering [the future] of our industry either.' Executives at Microsoft talk in far more pragmatic terms. Slick laptops, cloud services and fancy cell phones all play into its strengths of making software that hundreds of millions of people can use. The trends come and go, but Microsoft's reach and ability to plan on the grandest scale remain constant.

"'We can never become complacent, because just when the services transformation has gotten to this point, the next transformation comes,' Mr. Ozzie says. 'That's the way our company works.'"

W.K.

"Web of Debt" — A Very American Perspective on Money's Essence

Even our greatest thinkers were oriented by the conditions into which they were born.

Karl Marx's view of the pattern of social development remind us that he grew up in an age when the first railways were being created. And surely that is reflected in his notion of human development as a process of preordained sequence from one social form to the next, leading to the socialist terminal at which all passengers would ultimately step down with a beatific expression on their faces. And for the British colonies in North America to have been stricken in a very special way by the vast potentialities of paper currencies, certain conditions were needed – remoteness far vaster than the British Channel or the Irish Sea – to lessen the influence in both time and space of the institutions of the Motherland with its deeply imbedded adhesion to moneys based on silver or gold. But with North American colonies of the British Crown, sheer distance granted great independence in conceiving other ways of financing societies.

The circumstances of the main actors directed the angle taken by their talents or genius. Even before Ms. Ellen Brown reminded us of this, we knew about the ingenuity of the goldsmiths, keen of eye and appetite that had taken to accommodating traveling merchants. These had enough to worry about trundling their merchandise from city to city, and into foreign lands, without carrying the money collected from sales in centers left behind or to pay for purchases in markets ahead. Better to carry notes from a goldsmith in the center left behind to a colleague of the same trade in some center ahead. Nor were the goldsmiths less bright than the metal they manipulated. Before you might know it, the goldsmiths were dealing in many times the amount of credits for gold or silver held, after having noted how long it might take before every bit of other people's gold entrusted to them had been claimed. They doubtless even learned to associate the mark-up in terms of interest charged by these goldsmith-bankers with the prevailing wretchedness of the roads – a relationship that many economists have noted in our own times.

Ellen Hodgson Brown thus has a very special field to romp in, and that she does well and charmingly most of the time. We learn on page 37 that "Benjamin Franklin was such an enthusiast for the new medium of exchange that he has been called 'the father of paper money.' He learned his destiny on the job, and his trade happened to be printing, exactly as the original business of the goldsmiths who were prominent forerunners of banking was working in gold. In 1729, he wrote and printed a pamphlet called *A Modest Enquiry into the Nature and Necessity of a Paper-Currency*, which was circulated throughout the colonies. It became very popular, earning him contracts to print paper money for New Jersey, Pennsylvania and Delaware."

A Generic View of Paper Money

What emerged from this was a generically American view of paper currency and its origins. It reads very differently from the numerous learned volumes of German, British, Italian or French specialists on money and banking. Let me provide our readers with a sampling of Ellen Brown's impressive work, complete with beauty spots and some dreadful boners that should be plowed under.

"Franklin said [in his pamphlet], 'Experience more prevalent than all the logic in the World, has fully convinced us all, that [paper money] currency secured against future tax revenues turned prosperity tomorrow into ready money today. The government did not need gold to issue this currency, nor did it need to go into debt to the banks. In America, the land of opportunity, this ready money would allow even the poor to get ahead.'

"He also said: 'The riches of a country are to be valued by the quantity of labor its inhabitants are able [to perform] and not by the quantity of gold and silver they possess.' When gold was the medium of exchange, money determined production rather than production determining the money supply. When gold was plentiful, things got produced, When it was scarce, men were out of work. The virtue of government-issued paper scrip was that it could grow along with productivity, allowing potential wealth to become real wealth. The government could pay for services with paper receipts that were basically community credits. In this way, *the community actually created supply and demand at the same time.* The farmer would not farm, the teacher would not teach, the miner would not mine, unless the funds were available to compensate them for their labors…. Anything for which there was a buyer and a producer could be produced and traded…. They did not need the moneylenders' gold, which could be manipulated, or lent only at usurious interest rates.

"The new paper money actually allowed the colonies to finance their local governments without taxing the people. Alvin Rabushka, a senior fellow at the Hoover Institution at Stanford University, traces this development in a 2002 article called 'Representation Without Taxation.' He wrote that there were two main ways the colonies issued money. Most colonies used both in varying proportions. One of these was by the direct issue of notes, usually called 'bills of credit' or 'treasury notes.' These were IOUs of the government backed by specific future taxes; but such tax payments were deferred well into the future, and sometimes funds never got returned to the treasury at all. Like a man in a bathtub without a drain, the money supply kept increasing without a means of recycling it back to its source. However, the funds were at least not owed to private foreign lenders, and no interest was due on them.

"The recycling problem was solved when a second method of issue was devised. Colonial assemblies discovered that provincial loan offices could generate a steady stream of revenue in the form of interest *by taking on the lending functions of banks.* A government loan office called a 'land bank' would issue paper money and lend it to residents (usually farmers) at low rates of interest. The loans were secured by mortgages on real property, silver plate, and other hard assets. Franklin wrote, 'Bills issued upon Land are in Effect Coined Land.' New money issued and lent to borrowers came back to the loan office on a regular payment schedule, preventing the money supply from over-inflating and keeping schedule, thus keeping the values of paper loan-office bills stable in terms of English sterling. The

interest paid on the loans also went into the public coffers, funding the government. Colonies relying on this method of issuing paper money thus wound up with more stable currencies than those relying heavily on new issues of bills of credit.'

"The model that earned the greatest admiration of all was the loan office established in Pennsylvania in 1723. That proved it possible for the government to issue new money in place of taxes *without the provincial government collecting taxes at all.* The loan office was the province's chief source of revenue, supplemented by import duties on liquor. During this period the wholesale prices remained stable. The currency depreciated by 21% against English sterling, but Rabushka shows that this was due to external trade relations rather than to changes in the quantity of currency in circulation.

"Before the loan office came to the rescue, Pennsylvania had been losing both business and residents due to the lack of available currency. The loan office injected new money into the economy, and it allowed people who had been forced to borrow from private bankers at 8% to refinance their debts at the 5% rate offered by the provincial government. Franklin said that this money system was the reason that Pennsylvania 'has greatly increased in inhabitants,' having replaced 'the inconvenient method of barter' and given 'new life to business [and] promoted greatly the settlement of new lands (by lending small sums to beginners on easy interest).' When he was asked by the directors of the Bank of England why the colonies were so prosperous, he replied that they issued paper money 'in proper proportions to the demands of trade and industry.' The secret was not issuing too much, and in recycling the money back to government as principal and interest on government-issued loans.

"Rapid depreciation of the New England bills eventually threatened the investments of British merchants and financiers who were doing business with the colonies, and they leaned on Parliament to prohibit the practice. In 1751 King George II enacted a ban on the issue of new paper money in the New England colonies, forcing the colonists to borrow instead from British bankers. This ban was continued by King George III, who succeeded his father in 1752.

"In 1764, Franklin went to London to petition Parliament to lift the ban. When he arrived, he was surprised to find rampant unemployment and poverty among the British working classes. When he asked why, he was told the country had too many workers. The rich were overburdened with taxes and could not pay more to relieve the poverty of the working classes. Franklin was then asked how the American colonies managed to collect enough money to support their poor houses. He reportedly replied: 'We have no poor houses in the Colonies; and if we had some, there would be nobody to put in them, since *there is, in the Colonies, not a single unemployed person, neither beggars nor tramps."*

King George Steps In

"His English listeners had trouble believing this, since when their poor houses and jails became too cluttered, the English had actually shipped their poor to the colonies. The directors of the Bank of England asked what was responsible for the booming economy of the colonies. Franklin replied: "That is simple. In the colonies we issue our own money. It is called Colonial Scrip. We issue it to pay the government's approved expenses and charities.... In this manner, creating for ourselves our own paper money, we control its purchasing power, and 'we have no interest to pay to no one.' A legitimate government can both spend and lend money into circulation, while banks can only lend significant amounts of their promissory bank notes…for they can neither give away nor spend but a tiny fraction of the money the people need. Thus, when your bankers here in England place money in circulation, there is always a debt principal to be returned and usury to be paid. The result is that there is always too little credit in circulation to give the workers full employment.

"You have not too many workers, but too little money in circulation.

"Jason Goodwin observes it was a tricky argument to make. The colonists had been stressing to the mother country how poor they were – so poor, they were forced to print paper money for lack of precious metals. Franklin's report demonstrated to Parliament and the British bankers that the pretext for allowing paper money had been removed. The point of having colonies was not, after all to bolster the colonies' economies. It was to provide raw materials at decent rates to the mother country. In 1764, the Bank of England used its influence on Parliament to get a currency act passed that made it illegal for any of the colonies to pay all future taxes to Britain in anything but silver and gold. Anyone lacking those precious metals had to borrow them at interest from the banks.

"Only a year later, Franklin said, the streets of the colonies were filled with unemployed beggars, just as in England.

"Alexander Hamilton, the nation's first Treasury Secretary, said that paper money had composed three-quarters of the total money supply before the American Revolution. When the colonists could not issue their own currency, the money supply had suddenly shrunk, leaving widespread unemployment, hunger and poverty in its wake. Unlike in the Great Depression of the 1930s, people in the 1770s were keenly aware of who was responsible for their distress. One day they were trading freely with their own paper money. The next day it was gone, banned by order of a king an ocean away, who demanded tribute in the coin of the British bankers. The outraged populace ignored the ban and went back to issuing their own paper money. Alexander Del Mar, wrote in 1895: 'The creation and circulation of bills of credit by revolutionary assemblies…coming as they did upon the heels of the strenuous efforts made by the Crown to suppress paper money in America [were] acts of defiance so contemptuous and insulting to the Crown that forgiveness was thereafter impossible.

"The first act of the new Continental Congress was to issue its own paper scrip, as IOUs or debts of the revolutionary government, to be redeemed in coinage later. Eventually, 200 million dollars in Continental scrip were issued. By the end of the war, the scrip had been devalued so much that it was essentially worthless, but it still invoked the wonder and admiration of foreign observers because it allowed the colonists to do something that had never been done before. They financed a war *without taxing the people.* Franklin wrote from England during the war, 'the whole is a mystery even to the politicians, how we could pay with paper that had previously no fixed fund appropriated specifically to redeem it. *This currency as we manage it is a wonderful machine.'* Thomas Paine called it a 'cornerstone' of the Revolution.

"The British engaged in a form of economic warfare that would be used again by the bankers in the nineteenth century against Lincoln's Greenbacks and in the twentieth century against a variety of currencies: they attacked their competitor's currency and drove down its value. In the 1770s, when paper money was easy to duplicate, and could be diluted by physically flooding the market with counterfeit money. In modern times, the same effect is achieved by another form of counterfeiting known as the 'short sale.' During the Revolution, Continentals were shipped in by the boatload and could

be purchased in any amount, essentially for the cost of the paper on which they were printed. Thomas Jefferson estimated that counterfeiting added $200 million to the money supply, effectively doubling it.

"The Continental was battered, but remained viable. J.W. Schuckers, a historian writing in the 19th century quoted a confidential letter from an English general to his superiors, stating that 'the experiments suggested by your Lordships have been tried, *but still the currency has not failed.'*

'The beating that did take down the Continental was from speculators – mostly north-eastern bankers, stockbrokers and businessmen – who bought up the revolutionary currency at a fraction of its value, after convincing people that it would be worthless after the war. This gave rise to the expression 'not worth a Continental.'

"The discovery by Benjamin Franklin and others that it is enough for the government to make available both for spending and lending money into circulation for the state…to use the government credit – the 'Colonial Scrip' – to take care of both approved government expenses and to finance the employment of any private citizen who wished to take on a worthwhile farm or non-farm job."

From there Ellen Brown leaps to an espousal of confining the private banks to lend out the entire amount of their own capital or deposits. In short, by concentrating on her principal villain – which happens to be the principal villain of any monetary reformer – she overlooks the effect of her proposal of restricting our banks to lending out dollar for dollar of its own capital or the deposits made with it. For that is what doing away with fractional reserve banking means.

Under the F.D. Roosevelt regime, the banking system had taken such a beating from its speculative activities that some 38% of the existing banks had already shut their doors by the time he assumed office. And to find a way out of the resulting mess, one of the first steps the newly inaugurated president took was to declare a moratorium for what banks still remained open. That lasted a full month and shortly after, the banks reopened their doors the commercial banks were severely restricted by the *Glass-Steagall* law that barred them from acquiring an interest in any of the non-banking financial "pillars." In those remote times these consisted wholly of stock brokerage, insurance and mortgage companies – credit cards in their great variety, investment funds, and derivatives had still not made an appearance.

Economic Warfare: The Bankers Counterattack

The reader must not overlook that it was primarily the first three types of financial non-banking "pillars" that most prominently brought on the present unrelenting world crisis. Unfortunately Ms. Brown pays little attention to the *Glass-Steagall* law, which after being more and more disregarded, was repealed towards the end of the millennium. Yet it is in the *Glass-Steagall* that Ms. Brown should be finding the protection that she seeks in the simple financial landscape when banks are deprived of fractional reserves. For make no mistake about it, especially in the mesh of fragilities that almost any business is exposed to, having banks put up 100% of their own capital to finance almost anybody in business is demanding a great deal of them. No matter how much you may dislike your banker, you must never expect them to lend 100% of their capital to cope with the end of fractional reserves that Ms. Brown proposes. Confining commercial banks to the restrictions of the *Glass-Steagall* law brought back again, is a far less onerous way of keeping them to socially useful banking, than setting up banking as a department of a government office, which would clearly be necessary, if fractional reserve banking were banned.

This is undoubtedly closely connected with her identification of our problem with the fact that they do not create the money to pay for the interest charged on their loans. Were it only that! I have to avoid saying that she is barking up the wrong tree, which would be amiss in a discussion with anyone who can write so charmingly. The trouble with paying so little attention to the former *Glass-Steagall* law in the US is this: all those interests in the "other non-banking financial pillars were immeasurably greater than the relative detail that the banks did not create the credit to cover the interest charged on their loans. Its far more destructive consequence was that each of these other non-banking pillars had its cash reserves needed against unpleasant surprises in their own businesses. Allow our banks to get their sweaty palms on those reserves and they will use them as the cash basis for their own credit creation. And the process will move up storey by storey with each annexation of the cash reserves of one of these non-banking pillars serving as basis for the bank's further money creation in turn. What has resulted has been a skyscraper of bank money-creation moving ever upward, never downward, and ever faster. I used to calculate the resulting multiple attained and at the end of the previous millennium it had attained a figure of just under 400. At which point, with the appearance of derivatives and bogus insurance the stench of sulfur and fake insurance based on a total confusion of what mathematics are about had completely taken over, to the point of break-down. The figures I encountered by the time we approached the 400 to one ratio of bank-created credit to the legal tender that actually supported it, enabled me to predict the present meltdown with a fair degree of accuracy.

A word on the process involved. The empirical content that mathematics can bring to a problem is zero, it is the *analytical* power of mathematics that is unbounded. That brings us to the question of what can and what cannot be insured. 2 + 2 = 5, for example, is not just risky – and risks are insurable no matter how high the premium. But that equation, rather than just "risky," is wrong – a completely different matter. Insure something that is wrong, and both the insurer and the insured will go bust sooner rather than later – as happened in the case of AIG. The one-way elevator, ever rising ever faster, is based on the exponential curve, which is the maths of the atomic bomb.

Especially since the New York Stock Exchange, whose business has dropped to well below 40% of what it used to be a very few years ago, is opening new types of exchanges – to begin with in New Jersey and London, England, where, not only quotes and purchases are recorded in the minute fraction of a second, but for a fee can be made known to other bidders in their prices and quantities, to help them in their strategies. There could surely be no greater evidence that Obama is leading us where reformers have absolutely no legitimate business. Confining our reasoning to the interest not being covered in the supposedly new careers that our banks are embarking on, is to miss the essence of the world's dilemma which throws the gates open to the next world war.

"While the Founding Fathers were pledging their faith in gold and silver as the only 'sound money,' those metals were quickly proving inadequate to fund the new country's expanding economy. The debt might have been avoided if the government had funded the war with Continental scrip that was stamped 'legal tender,' making it 'money' itself.

"The solution of Treasury Secretary Hamilton was to 'monetize' the national debt. (To *'monetize'* means to convert gov-

ernment debt from securities evidencing debt – bills, bonds and notes – into currency used to purchase goods and services.) He proposed that a national bank be organized to print banknotes and swap them for the government bonds. The government would pay regular interest on the debt, using import duties and money from the sale of public land. He thought the government needed the support of the speculators, or they would do to the new country's money what they had done to the Continental.

"But Hamilton's plan had other strategic advantages. Besides disposing of a crippling federal debt and winning over 'men of wealth,' it secured the loyalty of the individual States by making their debts too exchangeable for stock in the new Bank. The move was controversial, but by stabilizing the States' shaky finances, Hamilton got the States on board, thwarting the plans of the pro-British faction that hoped to split them and establish a Northern Confederacy.

"Senator Henry Clay later called this the 'American system' to distinguish it from the 'British system' of 'free trade.' The British model assumed that one man's gain could occur only through another's loss. In the American vision of the 'Common Wealth.' all men would rise together by leavening the whole heap at once.

"That was the vision, but in the sort of negotiated compromise that has long characterized politics, it got lost in the details. Jefferson remained suspicious of Hamilton and his schemes, but felt strongly that the new country's capital city should be in his state of Virginia. Hamilton agreed on that location of the national capital in exchange for Jefferson's agreement on the bank.

"To maintain public confidence in the national currency, the new Republic needed the *illusion* that its dollars were backed by the bankers' gold, and Hamilton's bank met the challenge. Worse, the government ended up in debt for money it could have generated itself under the Constitution.

"The charter for the new bank fixed its total initial capitalization at ten million dollars. Eight million were to come from the government. But the government did not actually have two million dollars, so the bank (now a chartered lending institution) lent the government the money at interest. The bank, of course, did not have the money either The whole thing was sleight of hand.

"The rest of the bank's shares were sold to the public, who bought some in hard cash and some in government securities (the IOUs that had been issued by the revolutionary government and the States). The government had to pay 6% interest annually on all the securities now held by the bank – those exchanged for the 'loan' of the government's own money, plus the bonds accepted by the bank from the public."

How the Government Wound Up Borrowing its Own Bonds

"Within five years, the government had borrowed $8.2 million from the bank. The additional money was obviously created out of thin air, just as it would have been if the government had printed the money itself, but the government now owed principal and interest back to the bank. To reduce its debt to the bank, the government was eventually forced to sell its shares, largely to British financiers…. The first Bank of the United States ended largely under foreign ownership and control.

"Hamilton was widely acclaimed as a brilliant writer, orator and thinker; but to Jefferson he remained a diabolical schemer, a British stooge pursuing a political agenda for his own ends. Jefferson had always suspected Hamilton of monarchist sympathies, and his schemes seemed tainted with corruption. Jefferson would go so far as to tell Washington he thought Hamilton was a dangerous traitor. He complained to Madison about Hamiltonian bookkeeping: 'I do not wonder at the condition in which the finances of the United States are found. Hamilton's object from the beginning was to throw them into forms which should be utterly indecipherable.'

"Hamilton, for his part, thought little better of Jefferson. The feud between the two Founding Fathers resulted in the two-party system. Hamilton's party, the Federalists, favored a strong central government funded by a centralized federal banking system. Jefferson's party, the Democratic Republicans or simply Republicans, favored State and individual rights. Jefferson's party was responsible for passing the Bill of Rights.

"Hamilton had worked with Aaron Burr in New York City to establish the Manhattan Company, which would eventually become the Manhattan Bank. But Hamilton broke with Burr and the Boston Federalists when he learned that they were plotting to split the northern States from the Union. Hamilton's first loyalty was to the Republic, Burr and his faction were working closely with British allies, who would later try to break up the Union by backing the Confederacy in the Civil War. Hamilton swung his support to Jefferson against Burr in the presidential election of 1800, and other patriotic Federalists did the same.

"In 1801, Jefferson became President with Hamilton's support, while Burr became Vice President. In 1804, when Burr sought the governorship of New York, he was again defeated largely through Hamilton's opposition. In the course of the campaign Hamilton accused Burr in a newspaper article of being 'a dangerous man' who 'ought not be trusted with the reins of government.' When Hamilton refused to apologize, Burr challenged him to a duel, and at the age of 49, Hamilton was dead.

"Those were his positive contributions, but Hamilton also left a darker legacy. Lurking behind the curtain in his new national bank, a privileged class of financial middlemen were now legally entitled to siphon off a perpetual tribute in the form of interest, and because they controlled the money spigots, they could fund their own affiliated businesses with easy credit, squeezing out competitors and perpetuating the same class divisions that the American system was supposed to have circumvented.

"It sounds harmless enough when you are borrowing your neighbor's lawn mower. But when short sellers sell stock they don't own, they don't actually get the permission of the real owners, and selling your neighbor's lawn mower won't affect lawn mower prices at Sears. In the stock market, by contrast, prices fluctuate from moment to moment according to the number of shares for sale. The price is not responding to 'free market forces.' It is responding to speculators with the collusive battering power to overwhelm the market with sell orders – orders that are actually phony, because the 'sellers' don't own the stock. Like fractional reserve lending, in which the same 'reserves' are lent many times over, short-selling has been called a fraud, one that damages the real shareholders and the company.

What Ms Brown writes about the Russian Revolution is mostly nonsense. She makes no distinction between a serious historic source, and the propaganda of oppressive regimes on either side of the great waters. Thus on page 224 we read: "There were actually two Russian revolutions. The first, called the February Revolution, was a largely bloodless transfer of power from the Tzar to a regime of liberals and socialists led by Kerensky, who intended to instigate political reform along democratic lines."

However, the facts were quite different. Conditions in the Russian armies were so bad, that troops dispatched to the front were

even short of rifles, and were instructed to wait until the man ahead was killed to pick up his rifle and push ahead. That incompetent determination to continue with the hopeless offensives on the East to distract the Germans from concentrating on the Western front was a key factor in bringing on the Bolshevik revolution. Its purpose was to end what for the mass of Russians was a senseless slaughter.

What is astounding is that in the third edition of what by and large is an impressive work, the references to the detail of the Russian events are taken from First World War or Stalinist propaganda at its rawest. And in all this time the authoress should not have felt the need to distinguish between First World War propaganda during the anti-Communist raids where anything left of center in the US, even against the apolitical International Workers of the World ("wobblies"). I quote

Questions from Our Readers Answered

Replying to letter from Martin Jelinowicz forwarded to me from Herb Wiseman. Would you know, if this method is still in use or has been replaced by standard accounting procedures?

"Accrual accountancy was brought back from the Holy Land. It introduced the notion of double entry to Central and Western Europe by an Order of Crusaders – the Templars I believe. It had been developed in Islam to enforce the Muslim law that interest can be charged by whoever helps finance an expedition only if he has exposed himself to any losses of the expedition.

It made possible the extensive trade of the Venetian Republic with Islam – for centuries the only Christian state managing this.

Its essence was that every transaction is entered twice on the books of a firm or government. Its costs (whether in cash or credit) is amortized (i.e., paid off "to the death" – i.e., until retired according to a prearranged schedule over the expected usefulness of the investment itself), and the physical assets resulting from the investment were "depreciated," i.e., written off according to their changing value (Latin: *de pretio*). It was thus possible to follow the progress of the investment.

Historically such accrual accountancy made possible the costly and lengthy transatlantic voyages that led to the discovery of the Americas, and the Portuguese circumnavigation of the Cape of Good Hope that resulted in encountering a sea route to southern Asia and Pacific Asia.

It also made possible the financing of the wars that led to the consolidation of the local European feudal principalities into modern nations, although in financing those wars many banks went broke.

These had become the standard accounting over a large part of Western and Central Europe. Our taxes are largely levied by some approximation of accrual accountancy. It is the central government's own books that abandoned all approximation to accrual accountancy.

However, in 1988 the IMF had declared that on proof of sufficient capital – not liquidity – nations would be able to acquire government bonds with no down payment. This precipitated a major crisis in Mexico and threatened to bring down the entire financial system when in 1992 the IMF raised interest rates until zero inflation were achieved. In the IMF's haste, it overlooked that when interest rates are pushed up high enough bonds with low interest rates lose their market value. IMF, the USA and Canada put together a safety fund to prevent the resulting world financial crisis. The money was not needed, but the repercussions of the happenings in Mexico not only resulted in the passing of the control of 85% of Mexican banks into foreign hands, but President Clinton, badly shaken, brought in accrual accountancy for the government's *physical* investments. This carried back to 1959 led to the discovery of some $1.5 trillion of prepaid assets. That not only stopped the panic, but turned the depression into a boom that lasted until the high-tech bust of 1998.

Canada has a very poor partial version of accrual accountancy, even though the auditor-general of the day emboldened by the adoption of accrual accountancy for government physical investments in the US resisted the attempt to have something similar done in Canada.

By far the greater issue that remains today, both in the US and Canada, has to do with either government's investment in human capital. That has a very special record that goes back to the very end of the Second World War. That struggle had hardly ended when Washington sent many hundreds of economists to Germany and Japan to study the wartime damage to foretell how long it would be before those two once great trading nations would be able to return such prowess, Sixteen years later, one of these economists, Theodore Schultz, wrote a book in which he stated that it was amazing how wide of the mark he and his colleagues had been. He referred to the rapid rebirth of the trading leadership of the two defeated lands, and ascribed their surprisingly rapidly and brilliantly planned recovery in large part to the fact that their talented work force had come through the struggle basically intact. But his genius did not stop there: he went on to conclude that the most productive investment a government could make was in *human capital.*

If we utilize the statistics already cited for the physical capital previously recognized we would find that even in the purchasing power change since 1959 would account for something in the region of some $2.5 trillion in the US and of some $250 billion in Canada. That is probably the most important lesson to come out of World War II. And a more timely addition to our resource stock would be hard to imagine. For a few years Schultz was feted and even decorated, and then completely forgotten.

And yet there are some very unique features of human capital investment, a bit more information than he brought to light. For there is this about investment in of governments in human capital, the return – even if not formally related to their origins most often continue coming in health, in education, and in enlightenment. Britain is still receiving dividends on what Stafford-on-Avon may have spent on educating Billy Shakespeare in the glories of English language and the follies of governments. It is hard if not impossible drawing the line between the reinvestment of previous capital and the creation of new investment.

When we talk about governmental deficits, do we refer to results of income Statement or Balance Sheet. It would seem that I am talking balance sheet since we are referring both to reinvestment and expenditure – often in the same transactions. Clearly the lower levels of government should be fully addressed in this restructuring of accounts, and the resources of our central bank should be fully brought into play.

My best regards to both of you,

Bill Krehm

from Ms. Brown's third edition: "The far bloodier October Revolution was essentially a coup, in which Kerensky was overthrown by Vladimir Lenin with the support of Leon Trotsky and some 300 supporters who came with him from New York."

The fact is that he traveled alone with his family, and was removed from the ship and imprisoned in Halifax by the British until the message came from Kerensky, head of Russian government, asking that he be released and allowed to continue to Russia. The reason for that was that in his mid-twenties Trotsky had been head of the St. Petersburg Soviet that led the 1905 revolution that was eventually suppressed.

"Born Lev Bronstein, Trotsky was a Bolshevik revolutionary who had come to New York after having been expelled from France in 1916."

Incorrect; he was neutral between the Bolsheviks (which incidentally means "majority" hence debunking the statement on Brown's next page, "They represented the smallest of the Russian radical movements." How then did they turn up as the majority at the Congress when the Russian socialists split into Bolsheviks (majority) and the Mensheviks (minority)?

By now there is a rich literature reporting and correcting every bend of the Stalinist rewriting of history to justify the slaughter not only of Trotskyists but of any one seen as straying from absolute loyalty to Stalin. That Trotsky was Lev Bronstein should not seem surprising since as an underground movement in the days of the Czars, *noms de guerre* were a must. Stalin – meaning "man of steel" had the original Georgian name of Dzhugashvili, and few revolutions in Russia used their own name. As for Trotsky's 300 supporters who accompanied him from New York – where for some months he had edited a Russian socialist paper – they simply did not exist.

But why should the authoress refer to an Ed Griffin, author of *The Creature from Jekyll Island* on the support the Bolsheviks receiving strong support from the highest financial and political power centers in the US men who were supposedly "capitalists" and should have strongly opposed socialism and communism? Griffin maintains that Lenin, Trotsky and their supporters were not sent to overthrow the Tzar. Rather their assignment from Wall Street was to overthrow the revolution. There exists a wealth of literature on the subject. A particular source of misinformation has to do with the rigged trials that sent thousands of good revolutionaries because of suspected disloyalty to Stalin. Why in the midst of all this should Ms. Brown refer to an American writer concerned with the establishment of the Federal Reserve Bank as the source of who did what, and in Russia, of all places.

Of the Bolshevik movement Mr. Griffin wrote, "But theirs was a movement that scoffed at numbers and frankly mistrusted multitudes. Lenin always sneered at the obsession of competing socialist groups with their 'mass base.' Give us an organization of professional revolutionaries, he used to say, 'and we will turn Russia upside down.'"

Not the Time for Foreign Banks

It required a mass party to sustain a civil war when Communist Russia was invaded from almost every point of the compass. During this period there was little time for foreign banks. When Stalin finally brought in the first Five Year Plan in the latter 1920s, Trotsky from exile wrote that Stalin had resisted such plans advocated by him for some years. That curtailed the possibility of the imaginary supporters of American bankers on the say-so of American authors writing to set the US bankers in an unflattering light rather than from any serious acquaintance with what was going on or had gone on in Russia.

But the most insensitive use of irresponsible rumor by Ms. Brown occurs when on page 231 when she cites the 1938 interrogation of C.G. Rakovsky, one of the founder of Soviet Bolshevism – though a native Bulgarian and an intimate of Trotsky, who was arraigned in one of the countless show trials in the USSR under Stalin. Rakovsky maintained that Hitler had actually funded the international bankers through their agent Hjalmar Schacht in order to control Stalin, who had usurped power from their agent Trotsky. Surely a need to distinguish historic record from the answers of a prisoner of Stalin fighting for his life, assembling serious evidence should be a clear and urgent task.

If you went through the hundreds of prosecutions by the Stalinist government of alleged Trotskyist counter-revolutionaries and took the evidence given by the prisoners as gospel you would end up with a strange view of what had gone on in this world. An excellent corrective is the work of Albert Glotzer, *Trotsky Memoir and Critique*, Prometheus Books, 1989. Glotzer, for years one of the younger leaders of the US Trotsky movement, spent some months with Trotsky during his first exile on the Turkish Island of Prinkipo. From there he reported his fishing in the Black Sea with Trotsky to catch the fish that this alleged ally of US bankerdom was reduced to catching to feed his wife, himself, and whatever house guests were with him. Wrote Glotzer, "Never had I been fed so poorly before or after."

Since then Glotzer had separated from the Trotskyites largely because of their rigid Marxism which led him to criticize the Spanish Trotskyists for not breaking with the anarchists – as rigid Marxist beliefs would require. The Marxist faith holds that who has control of the means of production controls society. In Barcelona and Catalonia as a whole, however, the Trotskyites who had merged with other Marxist groups managed to survive largely thanks to the protection of the Anarchists. It was the Anarchists that had suppressed the Franquista rebellion in Barcelona harbor a the outset of the Spanish civil war. The anarchist unions – the CNT – went on to take over the telephone central instead of what Trotsky deduced by orthodox Marxist logic would have been the factories. But the POUM survived when the Soviets became the one source of arms – paid in gold as well as blood. Trotsky always had a lack of empathy towards anarchists. He had put down an anarchist uprising in Kronstadt in the early years of the Bolshevik revolution. To ask his followers to follow that line when the anarchists protected them from their Stalinist foes seeking principals for future Moscow trials was an awfully long hop. And one that Glotzer – for all his admiration of Trotsky, the revolutionary and martyr to revolution, was not prepared to make. I would recommend his book to Ms. Brown to help her straighten out her view of the 300 Trotskyites whom she mentions as having supposed to have accompanied Trotsky back to Russia in 1917.

As for Trotsky's backing by US bankers, let me mention that not only was Trotsky refused entrance to the US when alive, but even when assassinated, he was still not allowed into the US. In Mexico City there is a beautiful park, the Alameda, bounded by the White marble Bellas Artes music hall on the East and the Quemadero (the Burning ground where earlier Protestants and Jews had been burned in Spanish times). Towards the other Western end of the Street to the north is a modest funeral parlor where Trotsky was laid out when his corpse was refused entry to the United States. And instead of giving the murdered hero of the 1905 and 1917 revolutions a worthy funeral in New York. Max Schachtman, leader of the more humane wing of American Trotskyism

came down from New York and stood lone vigil over the coffin in a near empty funeral parlor. When I appeared to pay my tribute – I had never met Trotsky alive – he asked whether I wanted to share his duty with him. And of course I did. That is why it is tragic to the point of the ludicrous to accuse this leader of two great revolutions in Russia that of 1905 and that of 1917 of being an agent of American bankers.

Ms. Brown would help wipe out these astounding weaknesses in appraising sources especially those that go back to the Stalinist accusations where the accused were desperately trying to escape a bullet in the back of their heads. Or the prosecution of the Palmer raids directed against anyone showing a sympathy for what was happening in Soviet Russia – for example, the IWW – the "wobblies" – who were essentially just trade unionist non-political "syndicalists."

Reverting to the More Helpful Parts of the Brown Opus

"The 19th century Opium Wars allowed the British to impose economic imperialism on China. The Chinese government, alarmed at the growing number of addicts in the country, made opium illegal and tried to keep the British East India Company from selling it in the country. Britain then forced the issue militarily, acquiring Hong Kong in the process.

"To the Japanese it was an early lesson in the hazards of 'free trade.' To avoid suffering the same fate themselves, they tightly sealed their own borders. When they opened those borders later, it was to the US rather than to Britain. The Japanese Meiji Revolution of 1868 was guided by Japanese students of Henry Carey and the American nationalists. It has been called an 'American System Renaissance,' and Yukichi Fukuzawa, is intellectually 'the Benjamin Franklin of Japan. The feudal Japanese warlords were overthrown and a modern central government was formed. The new government abolished the ownership of Japan's land by the feudal Samurai nobles and returned it to the nation, paying the nobles a sum of money in return.

"How was the massive buyout financed? President Ulysses S. Grant warned against foreign borrowing when he visited Japan in 1879. He said, 'Some nations like to lend money to poor nations very much. By this means they flaunt their authority, and cajole the poor nation. The purpose of lending money is to get political power for themselves.' Great Britain had a policy of owning the central banks of the nations it occupied, such as the Hong Kong and Shanghai Bank in China. To avoid that trap, Japan became the first nation in Asia that bought out the nobility. The nobles were then encouraged to deposit their money in the state bank and to put it to work creating new industries. Additional money was created by the government to aid the new industries. No expense was spared in this process of industrialization. The funds were, after all, just government credits – money that was internally generated – based on the credit of the government rather than on the debt to foreign lenders.

"The Japanese economic model that evolved in the 20th century has been called a 'a state-guided market system.' The state determines the priorities and commissions the work, then hires private enterprises to carry it out. The model overcame the defects of the communist system, which put ownership and control in the hands of the state. Chalmers Johnson, president of the Japan Policy Research Institute, wrote in 1989 that the closest thing to the Japanese model in the US is military/industrial complex. The government determines the programs and hires private companies to implement them. The US military/industry complex is a form of state-sponsored capitalism that has produced one of the most lucrative and successful industries in the country. The Japanese model differs, however, in that it achieved this result without the pretext of war. The Japanese managed to transform their warrior class into the industrial industrialists, successfully shifting their focus to the peaceful business of building the country and developing industry. The old Japanese corporations we know today – Mitsubishi, Mitsui, Sumitomo, and so forth, have this origin.

The Japanese state-guided market system was so effective and efficient that by the end of the 1980s, Japan was regarded as the leading economic and banking power in the world. Its Ministry of International Trade and Industry (MITI) played a heavy role in guiding national economic development. The model also proved highly successful in the "Tiger" economies – South Korea, Malaysia and other East Asian countries. East Asia was built up in the 1970s and 1980s by Japanese state development aid, along with private investment and MITI support. When the Soviet Union collapsed, Japan proposed its model for the former Communist economies, and many began looking to Japan and South Korea as viable alternatives to the US free-market system. State-guided capitalism provided for the general welfare without destroying capitalist incentive. Engdahl writes: "The Tiger economies were a major embarrassment to the IMF free-model agenda. So long as the Tigers appeared to succeed with a model based on a strong state role, the former communist states and others could resist taking the extreme IMF course. In east Asia during the 1980s, economic growth rates of 7-8 per cent a year, rising social security, universal education and a high worker productivity were all backed by state guidance and planning, albeit in a market economy – an Asian form of benevolent paternalism."

However, the model represented a major threat to the bankers' system of debt-based money and IMF loans. To diffuse the threat, the Bank of Japan was pressured by Washington to take measures that would increase the yen's value against the dollar. The stated rationale was that this revaluation was necessary to reduce Japan's huge capital surplus (excess of exports over imports). The Japanese Ministry of Finance countered that the surplus, far from being a problem, was urgently required by a world needing hundreds of billions of dollars in railroad and other economic infrastructure after the Cold War. But the Washington contingent prevailed, and Japan went along with the program. By 1987, the Bank of Japan had cut interest rates to a low of 2.5%. The result was a flood of 'cheap' money that was turned into quick gains on the rising Tokyo stock market, producing an enormous stock market bubble. When the Japanese government tried cautiously to deflate the bubble by raising interest rates, the Wall St. bankers went on the attack, using their new 'derivative' tools to sell the market short and bringing it crashing down.

"No sooner did Tokyo act to cool down the speculative fever, than the major Wall Street investment banks, led by Morgan Stanley and Salomon Bros., began using exotic new derivatives and financial instruments. *Their intervention turned the orderly decline of the Tokyo market into a near panic sell-off, as the Wall Street bankers made a killing on shorting Tokyo stocks in the process.* Within months, Japanese stocks had lost nearly $5 trillion in paper value. Japan**,** the 'lead goose' had been seriously wounded. Washington officials proclaimed the end of the 'Japanese model' and turned their attention to the flock of Tiger economies flying in formation behind.

"Most of the Asian geese succumbed to

these tactics, but Malaysia stood its ground. Malaysian Prime Minister Mahathir Mohamad said the IMF was using the financial crisis to enable giant international corporations to take over Third World economies. He contended: "They see our troubles as a means to get us to accept certain regimes, to open our market to do business without any conditions. [The IMF] says it will give you money if you open up your economy, but doing so will cause all our banks, companies and industries to belong to foreigners.

"'They call for reform but this may result in millions thrown out of work. I told the top official of the IMF that if companies were to close, workers will be retrenched, but he said this didn't matter as bad companies must be closed. I told him that companies became bad because of external factors, so you can't bankrupt them as it was not their fault. But the IMF wants the companies to go bankrupt.' Mahathir insisted that his government had not failed. Rather, it had been victimized along with the rest of the region by the international system. He blamed the collapse of Asia's currencies on an orchestrated attack by giant international hedge funds. Because they profited from relatively small differences in assets value, the speculators were prepared to create sudden, massive and uncontrollable outflows of capital that would wreck national economies by causing capital flights. He charged, 'This deliberate devaluation of the currency of a country by currency raiders purely for profit is a serious denial of the rights of independent nations.' Mahathir said he had appealed to the international agencies to regulate currency trading to no avail, so he had been forced to take control with a policy aimed at shifting the focus from catering to foreign rate of the *ringgit* (the Malaysian national currency). These measures did not affect general investors, he said, who could bring in foreign funds, convert them into ringgit as needed. Before controls were imposed, Malaysia's economy had contracted by 7.5%. The year afterwards growth projections went as high as 5%. Joseph Stiglitz, chief economist of the World Bank acknowledged in 1999 that the Bank had been 'humbled' by Malaysia's performance.

"David had stood up to Goliath, but the real threat to international bankers was Malaysia's much more powerful neighbor to the north. The Chinese Dragon was not only still standing; it was breathing fire."

William Krehm

Review of the Brown book will be continued in our next issue.

A Look at What Passes as Fundamental Research in Upper US Academia

The Wall Street Journal (10/03, "Crisis compels Economists to Reach for New Paradigm" by Mark Whitehouse) will make you blink in wonder: "The financial crisis has economists striving to understand precisely why it happened and how to prevent a repeat. For that task, John Geanakoplos of Yale University takes inspiration from Shakespeare's *Merchant of Venice*.

"The play's focus is collateral, with the money-lender Shylock demanding a particularly onerous-form of recompense if his loan wasn't repaid: a pound of flesh. Mr. Geanakoplos, too, finds danger lurking in the assets that back loans. For him, the risk is that investors who can borrow too freely against those assets drive their prices far too high, setting up a bust that reverberates through the economy.

"For years, his effort to understand this process didn't draw much interest. Now it does – yet another after-effect of the brutal deflating of the credit bubble. The crisis exposed the inadequacy of economists' traditional tool kit, forcing them to revisit questions many had long thought already answered, such as how to [handle] disruptive boom-and-bust cycles.

"Mr. Geanakoplos is among a small band of academics offering new thinking about those cycles. A group varying from finance specialists to abstract theorists, they are moving to economic center stage after years on the margins. The goal: fix the models that encapsulate economists' understanding of the world and serve as policy-making at the world's biggest central banks. It is a task that could require a thorough overhaul of the way those models work.

"'We could be looking at a paradigm shift,' says Frederic Mishkin, a former Federal Reserve governor now at Columbia University. That shift could change the way central bankers do their job, possibly leading them to wade more deeply into markets. They could, for example, place greater emphasis on the amount of borrowing in the economy, rather just on the interest rates at which borrowing is done. In boom times, that could lead them to restrict how much money various players, ranging from hedge funds to home buyers can borrow.

"Mr. Geanakopolos is emblematic of the new thinking but not necessarily the one whose ideas will prevail. It is too early in the process to know. But he was among a group of academics whom Federal Chairman Ben Bernanke invited to discuss the crisis at its peak in October 2008.

"The past century saw two revolutions in the way economists view the world. Both required painful crises to set them in motion, but both arguably improved government's ability to manage the economy.

"The first came after the Depression, when economists built some of the first mathematical models that economists could use to try to manage the economy. The second came after the inflationary 1970s, when economists created new models that took into account how people's expectations, such as about prices or income, can influence the economy over time.

"During the second revolution, the US economy entered a period of stability and low inflation that lasted from the 1980s through most of the 2000s, leading many economists to believe they had triumphed over business cycles, As Robert Lucas of the University of Chicago, one of the intellectual fathers of the models, put it in 2003, 'The central problem of depression-prevention has been solved for many decades.'"

When Amnesia Became a Statesmanly Virtue

In actual fact the 1980s, though it seems to have escaped the attention of these scholars, were a very turbulent period. The largely deregulated banks, disregarding the *Glass-Steagall* Rooseveltian law that forbade commercial banks from acquiring interest in the non-banking "financial pillars" – in those remote and relatively simple days these non-banking financial pillars consisted largely of stock brokerages, insurance and mortgage companies the first simple credit cards had still not been invented. The *Glass-Steagall* law was still on the books but less and less regarded. When banks had access to these "other financial pillars" they made a bee-line to the cash reserves that those non-bank institutions kept for their own businesses and used them as the legal tender base for

their own money creation. In that way they were able to take over the Savings and Loans which were essentially mortgage trusts, in which land-owners who did not qualify for mortgages pooled their savings and then took turns in financing the mortgages on their land that they were not able to finance through conventional mortgage companies.

The banks that took over land development schemes of the S&Ls distorted the picture completely. Some of the greatest, crooked growth and bust schemes resulted from the banks acquiring S&Ls a bit all over the map, and getting involved in commercial banks taking over interests in other "financial pillars." The process continued at an increasing rate – always moving upward, at increasing speed, never ever slowing or moving down. For the upward movement marked the banks' rate of growth that had already been incorporated into their supposed capital value. What resulted was an ever-accelerating growth rate of an ever-more hybrid brand of bank moving compulsively ever quicker, and ever upward, because that rate of growth had already been insured and simply was not allowed to slow up. For amongst other things that would drive up their insurance premium and drive down the value of their stock. What resulted was an upward moving skyscraper of banking investment the elevators of which could only move upward at ever greater speed – even a stumble would bring on a crash.

But that is just the beginning of the problem. In the May 1970 issue of what was then the leading French economic journal of the time – *La Revue Économique* – I had a 70-some page article bought and published that I had written and sent cold. Later, I found out why. I had explained a subject that at least two French economists had identified statistically.

It was, briefly, that where there is a shortage of supply to satisfy existing demand prices can be said to go up because of real inflation. But propositions cannot be flapped over like pancakes and remain valid although economists of officially acknowledged schools still assume that to be the case, when they talk of any price rise as "inflation." Nobody moving from a town of 20 thousand to New York City assumes that his cost of living will remain the same. Why then should that be so when humanity is making a very similar move? We have lost count of the number of cities of 5 millions and over, and the population of greater Mexico City today is some 30 million. Public transportation, education, technology policing are at the basis of the urbanization overtaking the world and has its part in the current mortgage and housing crises.

That led me to the concept of the "social lien" which was in essence the heavy investment in physical and human capital that has become essential. It is neither inflationary nor does it contradict the analysis of the Keynesian school, but carries Keynes's and his colleagues' analysis further and more consistently.

That truer picture of suppressed and distorted development of economic theory was picked up and brilliantly handled by the late great French economist François Perroux. He defined as the "dominant revenue" the view of the economic group in the saddle, the volume and rate of whose income is taken as a reliable index of the welfare of society as a whole – no further question allowed or asked. During and after the Napoleonic Wars that role was occupied by the large feudal landlords who kept their rents high behind high tariff walls. But then John Watt's steam engines shifted that category to the factory owners who, having the monopoly of steam power in their mills, became free-traders to keep wages still lower and it helped spread the gospel of free trade among unwilling American and Continental industrialists. But the most astounding case of the "dominant revenue" occurred after barricades had been thrown up in most European capitals and the defeated socialists and anarchists began pouring into Britain as refugees. It was all right when the British workers had been largely illiterate and could not follow the arguments of most British economists who subscribed to one version of the labor theory of value.

But once they began to learn to read and the Socialists and Anarchists began pouring into Britain as refugees from their defeats on the barricades in most capitals of Europe around 1848 partly under the leadership of Marx's family could be found soap-boxing almost within earshot of Buckingham Palace in Hyde Park.

Then the greatest of all "switches" in "dominant revenues" occurred. Value no longer was measured by the amount of average labor that went into the production of a given product, but was shifted instead *to the amount of pleasure the consumer garnered* in consuming the product. Note the elegance with which the British Fabians, not excluding the ever-sophisticated George Bernard Shaw, dealt with unemployment – it simply did not exist; it was that the workers had simply done their research – with a spot of misapplied calculus taken to be not the servant but the supreme mistress of science – and concluded that there was greater enjoyment in leisure in their parlours than in a job at the wage offered.

We are still – perhaps more than ever – led by this "dominant revenue" which was developed quite independently in at least three European capitals at almost the same time.

And that is how we will assess the great academic research that is now being hailed and advanced as a serious contribution to helping the world out of its current trials. Since I could be accused of having made this up, I will quote verbatim the academic credibility that allegedly brought us to where the world find itself at present: "During the second revolution, the US economy entered a period of stability and low inflation that lasted from the 1980s through most of the 2000s, leading many economists to believe they had triumphed over business cycles. As Robert Lucas of the University of Chicago, one of the intellectual fathers of the models, put it in 2003: the "central problem of depression-prevention has been solved for many decades." Nothing less!

How Markets Were Made "Efficient"

"The result was a new orthodoxy, known as 'rational expectations' that still dominates, underpinning everything from the way pension funds invest to how financial analysts put values on securities. One of its main branches is the idea that markets are 'efficient.' meaning that even an uninformed investor can get a fair shake, because the price of any security tends to reflect all available information relevant to it value.

"Mr. Geanakoplos didn't buy it. A former US junior chess champion schooled in math and economic theory at Harvard, he had spent much of his career looking for holes in the dominant theories. His skepticism was seasoned with real-word experience, as head of fixed-income research for the now-defunct brokerage house Kidder, Peabody & Co. and after 1995 as a partner at a hedge fund that specialized in mortgage-backed securities, Ellington Capital Management.

"On Wall Street, Mr. Geanakoplos, now 54 years old, noticed what he saw as a serious market limitation: there weren't enough houses and other forms of collateral to back all of the large amounts of debt securities that bankers might want to create. So when investors seeking higher yields demanded more and more 'asset-backed' securities. bankers had to find ways to 'stretch' the available supply of collateral.

"One way was to lend more against it. For example, if a bank lowered the down payment on a $100,000 to 5% from 20%, it could have $95,000 in loans against the house instead of $80,000. In a similar way, banks could lower the down payments, or 'margins,' they required of investors who just borrowed to buy bonds and other securities.

"Banks could stretch collateral even more by using the home loans themselves as collateral for complex debt securities, known as collateralized mortgage obligations. The result was to recycle existing collateral for use again and again.

"A re-reading around 1997 of *The Merchant of Venice*, with its talk of a pound of flesh, helped focus Mr. Geanakopols's thinking about the importance of collateral. 'I thought it was a sign from the gods that I was on to something,' he says.

"Another sign came on a Friday morning in October 1998, following the downfall of the hedge fund Long-Term Management. A lender to the fund where Mr. Geanakoplos was a partner abruptly demanded more margin on a loan, a step akin to asking for more collateral. The event, which nearly toppled the fund as the partners scrambled to raise cash by selling securities, drove home to Mr. Geanakoplos how margins could work two ways – stimulating asset buyers as they go lower, but forcing fire sales as they rise.

"In a 2000 academic paper, Mr. Geanakoplos offered a theory. He said that when banks set margins very low, lending more against a given amount of collateral, they have a powerful effect on a special group of investors. These are buyers, whether hedge funds or aspiring homeowners, who for various reasons place a higher value on a given type of collateral. He called them 'natural buyers.'

"Using large amounts of borrowed money, or leverage, these buyers push up prices to extreme levels. Because those prices are far above what would make sense for investors using less borrowed money, they violate the idea of efficient markets. But if a jolt of bad news makes lenders uncertain about the immediate future, they raise margins, forcing the leveraged optimists to sell. That triggers a downward spiral as falling prices and rising margins reinforce one another. Banks stifle the economy as they become wary of lending under any circumstances.

"It was evident to me that there was a cycle going on, not just in my little market, but all over the world,' says Mr. Geanakoplos, who is still a partner at Ellington Capital. The 'leverage cycle' he called it.

"This idea had big implications for policymakers. For decades, they thought of interest rates as the most important indicator of supply and demand in credit markets, and the only variable they needed to adjust to achieve a desired economic result. Now, Mr. Geanakoplos was saying that something else – lenders' collateral or margin demands – could be even more important. 'I would give him a lot of credit,' says Michael Woodford, an economist at Columbia University and a leader in shaping the models currently in use at central banks.

The Leverage Cycle Playing Off Grandiose Scale

"Other, better-known economists – including Mr. Bernanke, while he was at Princeton – were also doing work highlighting how finance could affect the broader economy. But none of this work had much impact at the time. Since the business cycle was thought tamed, economists were more interested in applying their techniques in other areas, such as education and crime, as epitomized in the book *Freakeconomics*. Traditional macroeconomics, such as practiced by John Maynard Keynes and Milton Friedman were relegated to second-class status. By the middle of this decade, what Mr. Geanakoplos called the leverage cycle was playing out on a grand scale. Motivated by a flood of investment from abroad, US bankers created myriad debt securities backed by assets ranging from credit card receivables to student loans to corporate bonds. To stretch available collateral even further, they created hundreds of billion dollars in ethereal investments known as 'synthetic collateralized debt obligations,' whose value was tied to bonds and asset-backed securities."

And here the banks' acquisition of insurance companies seemingly guaranteed them against risks. We should note however that what is risky can be insured against, but what is "wrong" cannot. Take the proposition that 2 + 3 = 5 is not "risky"; it is wrong. Insure it, and eventually both insurer and insured will go broke. And that is what was wrong.

"From 2000 to mid-2006, lenders lowered average down payments on riskier home loans to less than from 4% from 14%. During this time, the average US home price soared about 90%, and total US credit-market debt rose 68%, to $43.3 trillion.

Central bankers expressed concern about the debt-fueled boom. But their main forecasting models sounded no alarms, because the models looked only at interest rates, not at any indicator of how much banks were willing to lend on assets.

"In 2007, with mortgage defaults rising, banks pulled back on home lending. The average down payment they required for riskier loans jumped to more than 10% in mid-2007, by Mr. Geanakoplos's calculation. House prices headed lower.

"After Lehman Brothers Holdings failed in September 2008, lenders jacked up the margin investors had to put up to buy securities to nearly 70% from less than 10%, contributing to a wave of selling and losses. Some bankers became reluctant to lend at all.

"As the financial system teetered. central bankers' main models offered little insight as to what the impact on the broader economy might be or what they should do to cushion it. Some economists say that the Fed's chairman had spent much of his career studying what to do in such a situation. 'Bernanke had the right model in his head,' says Larry Christiano of Northwestern University.

"Now that the financial crisis has exposed flaws in the models central banks use, economists have launched into a flurry of activity that is likely to reshape the field. As they did in the two revolutions in economic thought of the past century, economists are discovering relevant work. Mr. Geanakopolos has yet to develop his theory into a comprehensive model. 'His work assumes the leverage cycle is bad, but gives little guidance [about] to what extent it should be controlled,' said Markus Brunnermeier, an economist at Princeton who specializes in financial bubbles.

"The goal for economists now is a model that takes account of what happens in the financial sector, yet is simple enough to apply in policy-making. The quest is bringing financial economists – long viewed by some as directing curiosity mostly relevant to Wall Street – together with macroeconomists. Some believe a viable solution will emerge within a couple of years; other say it could take decades.

"Mr. Geanakoplos is convinced such a paradigm shift is under way. He hopes it will prove beneficial in protecting people from the excesses on which much of their current work relies. 'If that happens, that will be a change of enormous proportions,' says Martin Eichenbaum, a professor of economics at Northwestern. 'Our policy seems geared largely toward rescuing banks. If we could manage these cycles better, I think we'd all be better off.'"

And identifying any price rise with inflation, they are lost in the wilderness.

William Krehm

The Poor — A Market Brilliantly Engineered by India

In *The Wall Street Journal* (20/10, in an article by Eric Bellman) we are given proof that propositions cannot simply be turned around without simply turned around to become the negative of their original meaning. That lesson should emerge beyond the specific usefulness of the new meanings that might open up to us if we allowed for a bit of logical analysis beyond the too comfortable assumption that turning a proposition around is just the equivalent of a negative sign in mathematics. But let us bring on the important surprise that Indian engineers have laid open to us, which illustrates this vital point.

"Mumbai – Indian companies, long dependent on hand-me-down technology from developed nations, are becoming cutting-edge innovators as they target one of the world's last untapped markets: the poor.

"India's many engineers, whose best known role is to help Western companies expand or cut costs, are now turning their attention to the purchasing potential of the nation's own 1.1 billion population.

"The trend surfaced when Tata Motors' tiny $2,200 car, the Nano, hit Indian roads in July. It has resulted in a slew of new products for people with little money who aspire to a taste of a better life. Many products aren't just cheaper versions of well-established models available in the West, but have taken design and manufacturing assumptions honed in the developed world and turned them onto their heads.

"For the farmer who wants to save for the future, one Indian entrepreneur has developed what is, in effect, a $200 portable bank branch. For the village house-wife, a wood-burning stove has been reinvented to make more heat and less smoke for $23. For the slum family struggling to get clean water, there is a $43 water-purification system. For the villager who wants to give his child a cold glass of milk, there is a tiny $70 refrigerator that can run on batteries. And for rural health clinics, whose patients can't spend more than $5 on a visit, there are heart monitors and baby warmers redesigned to cost 10% of what they do elsewhere.

"Such inventions represent a fundamental shift in the global order of innovation. Until recently, the West served rich consumers and then let its products and technology filter down to poorer countries. Now, with the developed world mired in a slump and the developing world still growing companies are focusing on how to innovate, and profit, by going straight to the bottom rung of the economic ladder. They are taking advantage of cheap research and development and low-cost manufacturing to innovate for a market that's grown large and sophisticated enough to make it worthwhile.

"'There was a large potential market that all the players have not been able to reach,' says G. Sunderraman, a vice president of Mumbai's Godrej & Boyce Manufacturing Co., which developed the inexpensive refrigerator dubbed the 'Little Cool.' 'Now economic factors are making these areas more and more attractive.'"

As the "Little Cool" Grows Hot

"Unexpectedly strong demand for cheap cell phones in recent years revealed the untapped markets in India's villages and slums. Thanks to $20 cell phones and two-cent a minute call rates, Indian cell-phone companies are signing up more than five million new subscribers a month, most of them consumers no one would have considered serving only five years ago.

"At the same time, many of the nation's poor have become aware of material goods available in developed economies thanks to a proliferation of television networks, radio stations, newspapers and magazines.

"As with all innovations, many of these new products will fail to make their mark. But with so many unlikely products aimed at overlooked consumers, the trend could bolster bottom lines over time, create new companies and lead to a new kind of multinational corporation that thrives outside the developed world. Unilever NV and General Electric Co. are taking notice. GE's chairman, Jeffrey Immelt, on a recent tour of Asia, outlined how the global giant is restructuring to take advantage of what he calls 'reverse innovation.' While in India this month, he said the innovations in medical equipment here could eventually help bring down the cost of health care in the US."

This, allow me to remind our readers, restates in other terms what COMER has tried impressing our governments and economy faculties of our universities with: the fact that as lack of adequate supply to satisfy existing demand will drive up prices and is the essence of real inflation. But that does *not* mean that you turn that proposition around to read if prices go up that means that is necessarily inflation and that there is a lack of supply to satisfy existing demand. It could in fact be one of many other causes – for example the fact that all countries have become urbanized, and cities of 5 millions and more are hard to count, such has been their proliferation. But nobody in his right senses moving from a town of 20,000 to New York City expects his living costs to stay the same. How then can they expect that to happen when humanity has been making just such a shift? The population of Greater Mexico City is currently some 30 million. What is taking place in the "reverse innovation" restates this general principle in terms of a single example.

"'The biggest threat for US multinationals is not existing competitors,' says Vijay Govindarajan, professor at Dartmouth's Tuck School of Business and chief innovation consultant to GE: 'It is going to be emerging market competitors.'

"What is happening today is very different from the so-called 'sachet revolution' of the 1980s when Unilever and other consumer goods companies realized they could sell hundreds of millions of dollars more shampoo, detergent, toothpaste and snacks just by selling them in tiny packets.

"This time, Indian engineers are reinventing products to cut costs and reach the billions of people world-wide who live on less than $2 a day.

"The growing awareness of this new market has sparked start-ups as well as new business divisions in established Indian companies. Everyone from small local players – looking to go national then global with their low-price inventions – to the biggest conglomerate, the Tata group, are in the race. They are trying to figure out what the poor want and how much they are willing to pay for it. Then the companies are going back to their research teams and crafting new products and unprecedented price points.

"'These are not cheap knock-offs of Western products; they are in many cases

very different products,' says Arindam Bhattacharya, the Delhi-based director of the Boston Consulting Group. 'Western companies have not often explored these segments so they are untapped markets.'

"Western companies as well as most large Indian companies have long ignored poor markets because any potential profits seemed too slim. It was too expensive to create a distribution system that could serve the consumer who shops from closet-sized kiosks or weekly country markets.

"But instead of using traditional supply chains, many companies are distributing through rural self-help groups and micro-lenders that are already plugged into villages. And while profit margins are slim, companies are counting on volume to compensate. Many hope to sell to other poor and under-served markets in Asia and Africa eventually."

Very Creative Marketing

"Hindustan Unilever spent four years developing its battery-powered portable water-purifier system called Pureit. The $43 water-cooler-size system is now in more than 3 million Indian homes, many in hard-to-reach rural areas, thanks to its network of 45,000 women who demonstrate the Pureit and other Unilever products in their own homes. Then they sell door to door around the villages, often from the backs of bicycles.

"Some of the products may end up in developed markets. One of the Nano's first export markets, for example, will be Europe. The European version of the car will have better interiors and safety features and cost more than the Indian version but will still be cheaper than almost anything in Europe.

"Godrey, one of India's oldest groups, which is involved in everything from padlocks to port management, saw cell phone companies sell millions of new handsets in India's rural backwaters and wanted in on the action. Fewer than one in five Indian homes had a refrigerator, so Godrey figured it could attract a huge new group of consumers if it could get the price right.

"It sent surveyors into village huts for months at a time to discover the needs of farm families. The result: the 'ChotuKool' or 'Little Cool' in Hindi, looks more like a cooler. It opens from the top, and is about 1.5 feet tall by 2 feet wide. It is tiny because the poor live in small homes and don't buy food in bulk. It has handles to make it portable for the migrant workers who move a lot. It has no compressor to break or make noise. Instead, it runs on a cooling chip and fan similar to those used to cool computers. It can survive power surges and outages common in the country kitchen and even has the option of running on batteries. While designed with cost in mind, it uses high-insulation to stay cool for hours without power.

"By keeping it small and reducing the number of parts to around 20 instead the 200 that go into regular refrigerators, Godrey has been able to sell it for only $70, which is less than one third of the price of a regular bottom-of-the-line fridge. It also consumes only half the power so it keeps electricity bills at a level that the poor can afford.

"'No one in our family has ever had a refrigerator,' said Sangeeta Harshvardhan, a house-wife in Udgir, a remote rural village in the western state of Maharasthra. 'But at that price even we can afford one now.' While they have only had the fridge a month, her family is already used to the convenience. It allows her to stock up on the cucumbers her husband munches three times a day, put cold water in her son's thermos before he goes to grade school, and avoid having to boil milk to purify it every time she makes tea.

"A start-up company, First Energy, which was launched with the help of BP PLC, had to reinvent the wood-burning stove to come up with a product that had the convenience and the price to crack the same market. Hoping to help village women who spend hours a day looking for wood and keeping a fire going to cook for their families, the Pune-based company adopted the gasifier technology used in power plants to make a stove that would burn more efficiently and with less smoke. Engineers from the Indian Institute of Science in Bangalore designed a stove with a perforated chamber that uses a small fan to get just the right amount of air to keep a fire burning at high temperature, meaning less smoke and quicker cooking. It has sold around 400,000 of the $23 stoves across India.

"'A lot of innovation has gone into the stove as well as the fuel,' which is dry pellets made of agricultural waste like corn husks and peanut shells, says Mahesh Yagnaraman head of First Energy. 'This is not a gizmo like a cell phone. But it is definitely a life-changing product because the houses will not be smoky.'

"To bring banking services to villages, Anurag Gupta, a telecommunications entrepreneur. distilled a bank branch down to a smartphone and a fingerprint scanner. A bank representative goes directly to a village and can set up shop anywhere there is shade. Savers line up and give an identification number, scan their fingers and then deposit with or withdraw small amounts of rupees. The transactions are recorded the phone and the representative later visits as a standard branch to pick up or drop off rupees as needed."

Tiny Comes Naturally to the Nation Said to have Invented the Symbol Zero

"Mr. Gupta named his innovation Zero, after what he says is India's most important innovation – the number zero – which many believe was invented by Indian mathematician Aryabhata in the sixth century. Indian banks are using his system to open million of new accounts. The running cost of his 'branches' if about $50 a month to serve hundreds of people daily. A standard branch or ATM costs thousands to run.

"'We made this phone into a branch of the bank,' said Mr. Gupta, holding up the smart cell phone his system uses to keep data on accounts, depositors' finger-prints, photos, and voices.

"The Zero system is already helping Indian construction workers in Bahrain open bank accounts and send money home.

"Much of this is possible because engineers are so plentiful in India. It took close to 300 engineers around four years to develop the Tata Nano, which required rethinking everything from the engine to keep the sticker price at around $2,200.

"GE tapped the same pool of inexpensive expertise to target Indian hospitals and clinics that cannot afford equipment designed for the US. GE Healthcare has used Indian software engineers to develop an electrocardiograph that costs $1,000, one tenth [of the cost] of the standard models used in the past. GE hopes to sell the technology in the US eventually and elsewhere.

"'In India we have the engineers that have the brainpower and the bandwidth to deliver on these types of projects,' said V. Raja, chief executive of GE Healthcare's business in India."

And all the while following the startling revelations that come tumbling out of this amazing tale, we and our governments should not be using the multiple lessons of logic, and history as door-mats for wiping off our shoes before entering our temples of power.

W.K.