Distributed Computing May 1998
from Column: *Reverse Computing*
by Bob Scher

The Physics of Money

Today's volatile financial climate has inspired me to share some of my observations in an attempt to go back to basics about money.

I used to be able to understand the newspaper. I could figure out words like *scandal, bail-out, shark, pirate,* and *bottom line;* but other more sophisticated terms, like *arbitrage, leveraged buy-out,* even *inflation,* I assumed I either more or less knew or I would just *gloss over them*.

Thus I delved into lore of money.

I quickly discovered that one reason why many people are financially backward is that money is actually rooted in concepts that, at first blush, are utterly *counterintuitive* – as bizarre as quantum physics. Of course, this should not be a surprise. As in physics, realities as fundamental as money and finance should not be expected to conform to any but the most deep and subtle laws.

Debt

The First Law of Debt: Without debt, life is a one-sided fantasy.

Debt is the most fundamental concept of finance – dynamic and inescapable. It is possibly one of God's greatest inventions. Debt generates and maintains communication and commerce. And who is free of debt? Nobody. Everyone owes almost everything to almost everyone else.

The question isn't *whether* to go into debt, the question is *how much*? And the point is to recognize debts and be responsible for them. A person who imagines that he or she has never been in debt is simply afraid of life and doesn't know it.

To money wizards, a person, a corporation, or an entity in debt – especially a lot of debt – is exciting. Wizards rarely get overexcited, but when it comes to debt, they can barely contain themselves. They know how powerful this notion is.

The Second Law of Debt: With debt there is less than nothing. But without debt, there is nothing.

Deficit Spending. You earn less than you spend.

How is this possible? *The Principle of Nonlinear Time* operates here: In the money world there are backwaters, eddies, backwaters of eddies, and so on. Skilled wizards take advantage of such rich complexity.

And *The Principle of Bigness* applies: If you're big enough (for example, a city or a country – or a large software company), you distort the surrounding space and time – much like the sun distorts the surrounding gravitational field. This creates enough local complexity for various countercurrents to form, which allows you to engage in effective, and sizeable, deficit spending.

Debt Financing. If you raise money by issuing *bonds* (promissory notes) – i.e., going into debt – instead of *stock* (ownership certificates), you are practicing debt financing. This can be healthy, although newcomers understandably get a queasy upside-down feeling about all this since, not knowing the Laws, the world of money appears at first to contradict genuine ethical principles.

Refinance. To pay off a debt by going into more debt.

The Physics of Money

The Law of Monetary Physics: Money is a natural science and is thus "updated" in every epoch.

Therefore in our era, money cannot really be understood without notions of nonlinear time, The General Theory of Relativity, and faster-than-light technology. Considering the profundity of monetary reality, it is not unthinkable that new discoveries in finance and money will illuminate our theories of physics.

Arbitrage. Buying and selling "simultaneously" the same security in two different markets and benefiting from the difference in price quotations if the two markets are "momentarily" even slightly out of sync.

This appears to require signals moving virtually faster than the electronic messages that would pass back and forth to equalize the two quotes. Arbitrageurs may be our first genuine time travelers! (The concept of "simultaneity" also requires the Theory of Relativity for a precise explanation. Please consult appropriate works.)

Bankruptcy. A parallel world shift, or retry.

Rogues and Non-Rogues

There comes a time when on cannot avoid rogues. Hence, *The Principle of Rogues:* rogues eat money and excrete bad movies (or like items). To be a genuine rogue you must fulfill both requirements. Those who only "eat money" are not part of this particular nonselect group.

Blind Trust. A trust set up to prevent the beneficiary from knowing anything about what investments are being made, so that he or she presumably cannot influence them. The idea is to avoid the a*ppearance* of a conflict of interest. A blind trust is a perfectly respectable vehicle, but what if rogues are involved?

Leveraged Buyout (LBO). One or more people – who may or may not be rogues – use borrowed funds to finance gaining control of a company, offering the company's own assets as collateral. If they are "outside" the company, it is call a takeover.

Tender Offer. A public offer to buy a certain amount of a company's stock at a given price, often in an effort to gain control of the company. (*Tender* is good word for explaining irony.)

Greenmail. A bribe offered by a company's executives – in the form of paying more than the market price for the stock shares – to keep a corporate raider from taking over and, incidentally, kicking them all out.

Poison Pill. When company executives are really scared and want fight off the hostile takeover, they might try creating some warrants or additional preferred stock.

If the takeover is successful, warrants can be used to purchase stock at a steep discount – or preferred stock can turned in for cash, thus (theoretically) negating the takeover. It's also poisonous when the strategy works and the executives get to keep the company with far too much stock.

White Knight. Euphemism for a company that takes over another company to "protect" it from an impending hostile takeover. Whether the knight is friendly or not is never known until later. Thus, a more precise name would be *Grey Knight*.

Golden Parachutes. Parachutes ("severance pay") created by a Board of Directors that have gold coins woven into the rip cord. These chutes are supposed to remove the senior executives' interest as a factor in fighting off a takeover, since they wouldn't be intimidated by the loss of their jobs. (There's something fishy about this.) If you examine yourself carefully, you may find that it's difficult to blame them overmuch.

Compound Interest. At age 21, if you invest $10,000 compounded at 8 percent, at age 71, it is worth over $469,000.

Money in the Time of Coca-Cola and Beyond

Consumer Price Index (CPI). The record of the changes in prices of goods and services purchased by urban wage earners. Since the CPI is a widely used indicator of cost-of-living changes and a measure of inflation, we're stuck with it, whether or not it's accurate (there's really no way to know).

The word *index* was obviously chosen to make it sound frighteningly exact. And of course the CPI's value affects the reality it purports to measure. (Money wizards love this complication.)

Leading Economic Indicators. The measurement of such items as new building permits, new business starts, stock prices, and new unemployment insurance claims. These are used to "predict the future."

Inflation. The cost of goods and services goes up; the value of money goes down. No one knows why. The most cogent explanation I know is that a weird gas is emitted from the inflato plant in central Madagascar, which creates tiny "inflatoes" in the air. These multiply for a while and settle in cookies, chips, coffee, and beer. When ingested, inflation occurs. Eventually, "deflatoes" arise and everything goes the other way.

Money. A fluctuating quantity of an invisible something that surrounds everything. This is analogous to a field in physics. It can be stored or exchanged just like energy. Like fire, money is not "evil," but essential. Moreover, money is immortal. As long as there exist worlds and values, no one can get rid of money. Currency and coin aren't money, they're tokens, not the real thing. Just like the tokens in Monopoly that represent you and me and that we move around the board – we keep reusing them. But they are not the players.