

**Faith-based Economics:
Financial Engineering, the Transactions-based Economy, and the
Cyclic Destruction of Capitalism and Globalization**

by

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When catastrophe strikes financial markets, the triumvirate that makes up the power elite--politicians, financial executives, and the popular media--hunkers down to evaluate and report on what went wrong. Certainly that evidence is everywhere today, and needs no more comment. The evidence appears every morning in the papers of record, such as the *Wall Street Journal* or the *New York Times*. The investigations, hearings, and journalistic bravado generally turn into a search for the guilty, a few high-profile corporate or political leaders being hung in the public square, and ultimately a return to business as usual. The fingerprints of the so-called ideological debates show up everywhere—liberal vs. conservative, Republican vs. Democrat, socialist vs. capitalist, or left wing vs. right wing. The bums are thrown out, the system is tweaked with new appointments and laws (e.g., Sarbanes Oxley), and the financial system is returned to an equilibrated state of confidence for the investor class.

What we don't do is conduct a thorough root-cause analysis and then try to ensure that the conditions that led to the crisis are not repeated, or try to rid the system of the "professionals" who perpetuate this mess cycle after cycle.

Over the last twenty five years, we have preceded through the junk bond scandal; the savings and loan debacle; the global currency crisis (Long-term Capital Management, LTCM), also called the Asian contagion; the dot.com, telecom, and energy stock crisis, and, today, the veritable collapse of Wall Street as we once knew it because of the mortgage crisis.

This article is an attempt to identify and elaborate on an element common to all of these crises and hopefully arrive at a more unified explanation of why these crises repeat themselves almost on cue, and, most importantly, to look ahead at how we might prevent the next financial catastrophe. The argument here is that the platform for the next crisis could be carbon trading as the world's broad solution to global warming or the privatization of Social Security.

Another important benefit of this analysis is the recognition that if long-term asset value doesn't begin to replace transactional value, then it will be impossible to invest in

an economy for the long haul, such as the new U.S. Presidential administration states as its goal.

The Manufacturing of Artificial Value

Based on a “white paper” I wrote last year, mostly for my own edification, I was invited to Bucknell University by Skip McGoun to guest lecture to his undergraduate finance and economics classes. I had discovered several of Dr. McGoun’s publications during my research for the white paper, and subsequently contacted him. We established a fascinating dialogue on economic and finance topics. In preparing for the lectures, I had to greatly simplify my thesis and its explanation. The thesis involves an economics continuum of the last fifty years during which we’ve transformed from a manufacturing-based economy, beyond a services-based economy, and now to a *transactions-based* economy. In effect, *today what we manufacture is artificial value.*

In its simplest form, a transaction is the transfer of good(s) or service(s) from Party A to party B, but with the critical assistance of Party C (which as we will see later is actually multiple parties), the broker, “the middleman,” the “rain-maker,” or the agent (Figure 1).

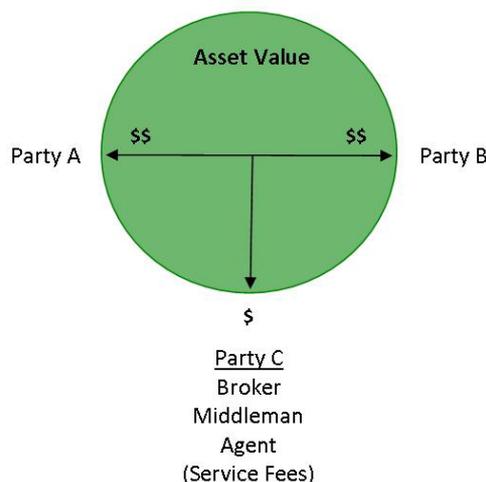


Figure 1- Simple transaction

Fundamentally, the objective in a transactions-oriented economy is, to the extent possible (or to the extent you can get away with), to *inflate* the “value” of this transaction to *maximize* the fees that can be extracted from it and, by extension, inflate the value of

the role of Party C. This is the essence of a transactions-based economy. The root cause of our problems, and the cyclic catastrophes, is that the broker function has now usurped Party A and Party B in the transaction (Figure 2). Lest we think that this is simply a question of getting the “broker” to behave, a critical aspect of the transaction-based economy is that more of ordinary people’s income is predicated on extracting fees from this transaction (more on this later).

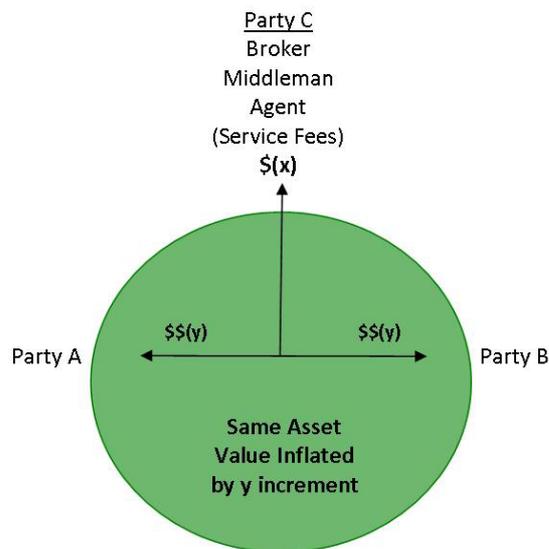


Figure 2 - Transaction with value inflated by y

In this argument, the field of “finance” or financial engineering has flourished as a way to complicate and support the objective of artificially inflating transactional value at shorter and shorter time scales, at the expense of a long-term stable and predictable asset value that can foster real investment. Say what you want about the importance of Wall Street firms, investment houses, brokerages, etc; they are fundamentally businesses that “broker” deals between two parties. Moreover, the fundamental “deal” is to broker a deal for which the two parties agree to a “value.” Unfortunately, in many cases the actual extraction of that “value” by one of the parties will take place at some point in the future. Meanwhile, the brokers and all the associated firms “servicing the deal” extract their fees and get paid today!

In a November 11, 2007 article in the *New York Times*, Gretchen Morgenstern reported that profits from the financial sector now account for 31 percent of the total

United States corporate earnings—up from 20% in 1990 and 8 percent back in 1950. “Profits from this country’s financial engineers now far exceed those generated by mechanical engineers.” Another fascinating statistic was reported in August 19, 2007 in the NYT: “At the end of last year, financial companies represented a record 22.3% of the S&P 500. That was up from 7.5 percent at the end of 1990.” Certainly these numbers suggest the extent to which the economy is being driven by financial services.

The tools employed by the financial engineers to inflate value are being uncovered and reported in the papers and web channels every day. Chief among them are the various complex financial models (variations of Capital Asset Pricing Models and the Black Scholes Options Pricing Model), the tools of the “quants,” which forecast, estimate, assign, but ultimately *create* value for their owners. There is ample evidence in the newspaper articles that these models are like all mathematical models—the results intimately depend on the initial assumptions, and the users of these models were ignoring basic inputs or assumptions that would lead to undesirable results. A good example of this revelation is in the *New York Times*, “Wall Street’s Extreme Sport - Modeling Risk, Financial Engineers Didn’t Account for Human Factor” by Steve Lohr (p. B1 and B5, November 5, 2008).

However, the more serious issue with quant models is not that they are used, but that no standard or benchmark exists. That is, when no one can agree on what the value of a transaction is, no one will transact. That’s the problem today. But less than a year ago, the value of many of Wall Street’s transactions was essentially what the broker “modeled” and Party A and Party B (such as in a transaction involving collateralized debt obligations, or CDOs) took on faith, or tweaked their own “model” to agree. This is what is referred to as a “faith-based economy.”

Donald MacKenzie, in *An Engine, Not a Camera: How Financial Models Shape Markets*, (The MIT Press, 2006), argues a critical distinction, namely that financial models *drive* the economy; they are not merely tools *for analysis of* the economy. Trading futures on currencies, T-bills, stock indices, for example, has become central to global finance. MacKenzie observes that financial markets changed in the 1970s with the emergence of organized exchanges that trade derivatives of financial assets, not

just the assets themselves (such as stocks). In the 1960s, financial economics began to emerge, with “elegant mathematical models of markets” at their core. Computers allowed the application of finance theory models to trading. Financial economics “altered markets,” they were not cameras “passively recording...” What allowed futures and derivative exchanges to be distinguished from gambling (and therefore, at the time, illegal), was the possibility of physical delivery of the commodity.

In particular, MacKenzie’s observation about from the energy business is particularly relevant: “The difficulties of Enron, a pioneer of energy derivatives and of the “asset light” virtualized corporation, are also notorious. Nevertheless, the use of derivatives is one factor making possible corporate structures in which the ownership of physical assets is of decreasing importance, risks are hedged financially, and the ownership of ‘virtual assets’ such as intellectual property rights is more important.” MacKenzie also stresses the “little understood network of personal interconnections that often underpins even the most global and apparently impersonal of markets.” Although he does not come out and state it, he insinuates that there is a closely knit group of economists and practitioners, and intellectual centers (e.g. University of Chicago), that form what perhaps I am calling the financial elite or the financial engineering community. (Coincidentally enough, the University of Chicago is the nexus for what is commonly called the Neo-conservative political movement, but that is another story.)

Many other tools have been manipulated to ensure that the value of high-dollar transactions could be inflated. For example, accounting standards, such as for mark to market accounting, allow firms to use their own proprietary models to determine what the value of certain assets and liabilities are. Thus, the value is what they say it is, not what is calculated with an accounting methodology “standard.” In weights and measures, for example, a standard is a physical reference, something everyone agrees is the ‘benchmark.’ In financial engineering, a “standard” is an allowance to create your own standard.

No one needs to remind financial professionals and investors how leverage (debt) can inflate the value of the transaction in our simple diagram. We often hear of investment houses which run a “highly levered book.” This simply means that every real

dollar the firm has is leveraged up 10:1 or even up to 100:1 by borrowing money. Because this inflates the value of the transaction, the firm is able to show higher income from the extraction of larger fees. It is clear and now acknowledged that the Federal Reserve's loose monetary policy between 2001 and 2006 threw fuel on the fire of financial engineering and a transactions-oriented economy.

Andy Kessler, in the *Wall Street Journal*, (January 24, 2008), offers a well thought out recent history of "investment banks [that] were going to make money going forward" in the wake of the stock market collapse of 2001-2002.

"Wall Street, as it always does, gave investors what they wanted—excess yield in the form of derivatives, asset-backed mortgage-backed collateralized debt obligations, basically funky amalgamations of lots of other pieces of paper. Done right, no one but you knew how to value these exotic instruments, so you could mark them up way more than a penny and generate huge fees, profits, and bonuses."

At the heart of this ability, he goes on to write, were the low interest rates from the Federal Reserve. He also hints that the same firms, at least those that end up with the most capital and subsequently consolidate their weaker brethren, are already figuring out where they are going next, what the next "model" will be.

Another means of inflating the transactional value is through churn, the buying and selling of the same assets and services so that the "fees" can be extracted multiple times. In effect, this applies to large infrastructure assets the same way it applies to individual assets, such as homes. Each time an asset moves from one balance sheet to another (and here this can range from a household's budget and net worth accounting to a corporation's balance sheet), the "broker(s)" extract their fees as cash, but the value to Party A and Party B is only a fleeting representation at that moment in time.

A variation on buying and selling the same assets is to merge up several companies into a huge conglomerate, and then break the same company up because business conditions change and the promised growth doesn't materialize. As just one of many examples, Citibank is considering breaking itself up, when not too long ago, it went on an acquisition spree (like most of the other major banks). This happens with

large conglomerates and smaller ones in which only two companies may have been stitched together.

It is a cliché to say that brokers make money whether the market is going up or going down, or as long as there is a Party A and a Party B. Today, the global economy is deflating because two parties, more often than not, are not coming to the table, so even the brokers suffer. But under less bad economic conditions, the middlemen make money either way. So it should be an obvious corollary that transactional value can easily be inflated by *promoting volatility* in markets. The same asset can be part of a deal if it is rising quickly in value and Party A wants to capitalize on “growth,” or if it has fallen in value so much that it becomes a “steal” for Party B.

Finally, another way to increase transactional value from an asset is to change the value of products and services derived from that asset, or to create new financial products that derive the value of one asset against another asset. Later I will bring up several examples in the energy business, and how deregulation was hijacked to create volatility around “sleepy” fixed assets (like power stations) and increase transactional value through electricity and natural gas trading. This had to be preceded by a wave of deregulation of the industry, much like what occurred in trucking, airlines, and telecommunications, all of which preceded utility deregulation.

If you cannot increase the transactional value by creating a trading market for the product or service derived from the asset, then another approach is to “securitize” the asset. Securitization, (and its cousin, monetization), in my view, is the financial engineer’s way of saying that the future value of the revenue from an asset is converted into cash fees today. Thus, I can securitize the revenue collected from hundreds of thousands of mortgages by creating collateralized debt obligations (CDOs) and selling them to another party, or the revenue collected from transmitting electricity over transmission lines or the revenue “guaranteed” by a long-term power purchase agreement between a power plant owner/operator and a utility or electricity distributor or marketer.

In all cases, the broker (and all the service providers) to the deal maximize their revenues by maximizing transactional value, by encouraging change in the value of that

asset, encouraging the buying and selling of that asset, or by changing the value of the products and services derived from that asset. The “broker” entity needs three things to keep this chain of events going: *volatility, volume, and a vacuous investment class which has faith, which “trusts” but never verifies* (Figure 3). Instead of creating real value by building new assets and infrastructure (factories, roads, bridges, refineries, etc), the economy has been held hostage by the creation of artificial, transactional value. Put another way, *financial engineering is no longer part of the services economy; it drives the whole economy*. And, I would add, the transactions-based economy.

The Invisible Hand: The Biggest ‘Faith’ of All

Perhaps the worst myth perpetrated on the global economic system is the idea of the invisible hand of the free market, as assumed originally by Adam Smith and free market ideologues. No solution or fix to the cyclic financial catastrophes is possible unless this fiction is obliterated from investor consciousness. *The financial engineering elite has a face*. So, too, do the other components of the power elite, the popular media and the politicians who aid and abet the system. How else could a \$750-billion government bailout of the financial industry have occurred with no oversight, no knowledge of where the money is going or how it is being used, and no requirements to actually use the money to get the economy moving again, rather than allow the financial engineering firms to “restructure” themselves for survival?

When the financial engineers periodically make a mess of things, a few individuals, as alluded to earlier, are “caught” and “hanged in the public square.” But, the rest move on. A quote from *A Demon of Our own Design* (R. Bookstaber, Wiley, 2006) elegantly sums this up: “The most prominent names in this business [takeover boom of the 1980s] included Ivan Boesky, who would be arrested, and Robert Rubin, who would later be Secretary of the Treasury.” The epilogue to Rubin’s career is still being written, as he moved from Treasury under President Clinton to a prominent executive position at Citibank. Rubin recently resigned from Citi but as of only two months ago, he was a prominent advisor to President-elect Barack Obama’s economic team. In recent days, we have also seen a return of other Clinton-era economic types. Does anyone really think, apart from some ideological gnashing of teeth prominently

displayed in the media, that these folks will drive fundamental reform of the global economic system?

It is unclear who else will be hung out to dry for the mortgage debacle, the credit crisis, and the subsequent recession, which could still turn into a depression. The credit ratings agencies are under fire, but this happened during the dot.com bust and nothing really changed. One or more big banks may fail and be sold for parts (e.g., Lehman Brothers), but this just means that the same people with the same philosophy work for others. Boesky and Milken took it in the late 1980s; one or two rogue traders for the LTCM and Asian contagion crisis; and Henry Blodgett, Arthur Andersen, Jeff Skilling (Enron), Worldcom and Tyco CEOs, and others for the 2001-2002 collapse in equities trading. The names this time around are unfolding as I write.

As Bookstaber notes, as well as others, the implications for complexity in financial markets are more pointed than for most other industries: In the financial markets, some participants have a self-interest in gaming the system. Traders do not act as uninvolved parties. They are ready to take advantage of increased complexity in the products and the organizations to serve their own bottom line, making it all the more likely that the unanticipated crisis will appear.

It serves the financial engineering elite that the investor class believe in an invisible hand, not much different from the tooth fairy. The fact is, brokers can pull current cash out of the speculative nature of “value” that is what the financial engineers define it to be, as long as Party A and Party B believe increasing value simply materializes from an invisible hand. When the inflated value is exposed and the system collapses, they are bailed out (if they are too big or too influential to fail), all the while biding their time and even picking up assets at fire sale prices for when the cycle begins anew.

In fact, the “invisible hand” is actually quite visible. It is a power elite that moves between Wall Street and Washington DC. You can read one of many recently published books to identify who the players are. Their messages are constantly amplified by a pliant journalism community. Ben Stein notes in the *Wall Street Journal*, January 27, 2008,

“So when you see the market gyrating wildly downward and hear some pundit saying it’s because of this or that data or this paradigm or that ratio, remember trader realism. The traders move the market any way they want, any way they think they can make money, and then they whisper a reason to journalists later in the day. Then the journalists print it or say it on television, and the amateurs believe it. And the traders snicker.”

And Stein goes on to say, “In America today, it is the traders, not the politicians or the generals, or the corporate bosses, who have the power.” This inquiry expands Stein’s commentary to financial engineers (of which traders may only be one aspect) and the notion of trading as transactions of all types.

How many times has it been said that the Iraq war is “all about oil?” Most people who believe this or utter it probably think in terms of protecting the U.S. supply of petroleum, or even the general protection of the world’s shipping lanes so that oil can flow “freely” to global markets. The other side of this coin, however, is the notion that virtually any turmoil in the Middle East—or within any oil and natural gas producing region—especially that which could threaten the Persian Gulf, will drive volatility in oil prices. Fear, in other words, of a disruption in supply is one of the best creators of artificial, inflated value.

While it would be reprehensible for anyone to cheerlead publicly for war, if you can encourage disruption for other geopolitical reasons, and then profit from the volatility, well, that’s close to the world’s oldest profession. Iraq represents 10% of the world’s oil supply and if you can saber-rattle about Iran at the same time, all the better for speculating in global energy. Much of Russia’s recent posturing vis a vis natural gas is designed to increase volatility and decrease attention paid to the downward spiral in the Russian economy.

One could ultimately argue that the very concept of an “invisible hand” was created to dispel any notion of a conspiracy theory, that the economy can be, and is being, manipulated by the power elite all day every day. The “invisible hand” allows one part of a financial services firm to beat down the stock of a firm, while another part of the firm buys a controlling interest in the company at fire sale prices. The Federal Reserve’s

interest rates may have been lowered to next to nothing following 9/11, but who's to say that an ancillary motivation wasn't to avoid the continuing economic debacle of the dot.com bust and once again bail out Wall Street firms?

Energy: Creating—and Capitalizing on—Volatility

My business is energy and electricity. Most of the principles of the transactions-based economy are derived from what I have observed over the last twenty five years in the electricity business and applied, through research, to other areas. I witnessed the inflation of artificial value and the destruction of asset value first hand.

The outcome can be summed up by what my former publisher once said to me: "Never let anyone get between you and your customer." The last twenty five years of the electricity business can be described by noting that electric utilities failed to heed this advice.

In the "old days," a utility built, owned, and operated electricity infrastructure (power plants, transmission lines) through a regulated rate of return financial structure. The industry was said to be vertically integrated. Today, after two decades of "deregulation" (which has now caved in on itself and has become reregulation), the vertically integrated structure has been broken up. Under my thesis, the industry has been transformed from one based on asset value to one based on transactional value. Power plants are bought and sold like much the speculation in housing. Electricity, something that is difficult to store (has to be stored as a different form of energy) and therefore naturally volatile in price, is traded in open markets. Fuel for these power plants, once bought on long-term contract, is also bought and sold and arbitrated on open markets. We are now debating the trading of carbon emissions from these plants (more on this later). Oh, the sulfur emissions from these plants are subject to trading as well!

The entire industry has become one that invests little in its assets. I like to make an analogy to a used car. When you think you are going to sell your car, you don't buy new tires. You don't maintain it the same way. You hold it, hoping for the transactional value to increase so you can "flip" it. Imagine something as critical as your electricity service being subjected to such a mentality. Now apply that to basic infrastructure—

refineries, highways, telecommunications, water supply and delivery, airports, etc—and realize that this is reality, not imagination.

Interestingly, the same firms hung out to dry or accused of “pumping the stock” of energy and electricity companies like Enron at the turn of the millennium were the ones who bought at fire-sale prices the assets of these firms after the “value” of these distressed assets had been driven to “pennies on the dollar.” Once Enron “blew up,” the shares of all the other Houston-based merchant energy companies were beaten down and divisions of the same companies that drove the stock prices (or hedge funds and private equity funds) bought up the electricity trading operations and the “distressed” power plant assets.

Three years ago, an analyst at Goldman Sachs made big news when he predicted that oil would move to \$100/barrel. At the time, the price for oil on world markets was around \$60/bbl. Sure enough, within three years, the price of oil went to \$140/bbl by the early part of 2008, but then plummeted to around \$40/bbl today. Who among readers really believes that physical supply and demand was so out of balance as to warrant this volatility, even given China and Asia’s demand for energy? Goldman and their Wall Street brethren were doing their fiduciary duty and creating conditions that would allow them to inflate the value of transactions in the world oil market, in particular exploiting the terror premium resulting from Middle East turmoil stemming from the U.S. invasion of Iraq.

In my book, *Lights Out: The Electricity Crisis, the Global Economy, and What It Means To You*, (Wiley, 2007), I make reference to allegations that Wall Street firms did not like the idea that energy trading as it grew in the 1997-2001 time frame was headquartered in Houston. Apparently, Ken Lay (Enron) and others, even with the favor they curried in DC under Republican administrations (Bush I and II) and even the two Clinton administrations, could not out-manuever the financial services firms. As just one example, Morgan Stanley, according to a *Wall Street Journal* article (March 2, 2005), “has custody of a quarter of America’s strategic reserve of home heating oil, and is the second most active trader of electric power, ahead of scores of utilities.” Goldman Sachs Group, Merrill Lynch & Co, Credit Suisse First Boston, and Citigroup, as well as a

variety of hedge funds, are also active energy traders and holders of gas-fired power plant assets, investors in wind energy projects, and have carbon trading desks.

The problem (or the opportunity) with accelerating petroleum prices is that they stimulate the rise of energy prices in general. Thus, turmoil in the Middle East ultimately affects domestic natural gas markets, coal markets, and electricity markets, generally in that order. Then, when you superimpose global warming and the potential for carbon trading onto energy markets, interest in alternative energy—ethanol, biodiesel, solar, wind, and others—emerges quickly, but then deflates when energy prices plummet. Volatility is no friend to those who seek to promote energy independence, keep petrodollars at home, and invest in our own infrastructure. Although establishing a direct link is difficult (kind of like the direct deterministic link between smoking and lung cancer, as opposed to circumstantial and probabilistic evidence), the connection between a transactions-based, petro-dollar-fueled economy driven by Wall Street and a government willing to go to war, even partially, over oil is clear to me, and many others.

The Housing Market: What's a New Kitchen Worth?

Another analysis of the failure of CDOs and the collapse of the home mortgage business isn't warranted here. It's in the daily papers. However, the situation does illustrate the elements of the transactions-based economy. In a sense, the home represents the same thing as a power plant thirty years ago: sleepy asset value that could be converted into transactional value through refinancing, CDOs, and other techniques. Whether a mortgage could actually be paid by the recipient wasn't the issue. The Wall Street machine and feeding frenzy of CDOs needed to be fed. So, just like at the end of a bubble in equities markets, mortgage "brokers" found whatever they could and fed it to the machine, confident that they would extract their "fee" before any collateral damage was visited upon them.

A *Wall Street Journal* article from November 6, 2007 notes that lenders (of mortgage money) were the ones that needed the constant supply of loans, not borrowers. "Without a production line of mortgages, the inventory for all those fee-paying derivative securities would dry up. Merrill Lynch went so far as to buy mortgage-originating banks to keep up its supply." The article goes on to say that standard bank

deposits became less and less desirable, so more flexible and lucrative wholesale funding was pursued via fresh short-term paper. This was great “as long as the paper could be repeatedly rolled over.”

On the Main Street side of the market, the wholesale psychology of housing has transformed from “owning instead of renting” (and enjoying the tax advantages) to flipping and refinancing. A family of four doesn’t live in a six thousand square foot home because they need the space, but because they like the status and the multiplication of equity value that is expected to come with it (often at the expense of a higher debt profile). The owner of a more modest home converts what equity he or she might have into home equity debt to buy other things.

But there’s another fascinating angle to the mortgage story that isn’t as widely disseminated by the popular press. Sociological research apparently shows that, while affluent homeowners invested tens of thousands of dollars in remodeling their kitchens, they actually were using their kitchens less, cooking less and eating out more! This suggests that expenses for kitchen remodeling were less targeted to a gourmet lifestyle and more to increasing the transactional value of the home. In a speculative environment for home values, a state-of-the-art kitchen is perceived as enhancing the value of the home, or at least ensuring that your home would sell before the one down the street.

The Ownership Society: Dodging a Bullet

While we read about the reach of the debt-crisis economy and the calamity in its wake, we can at least be thankful for the part of the economy financial engineers failed to get their hands on: Social Security. The Bush administration made as a centerpiece of its second term in office the privatization of social security, as part of its broad mandate to create more of an “ownership society.” (Indeed, in a recent exit interview, President Bush cited his efforts to privatize social security as one of his greatest domestic agenda achievements.)

It is easy to see how attractive this pot of money could be to financial engineers. Just like the power plant and the home—lying there as sleepy assets thirty years ago—social security is a huge pile of money just waiting to be converted into transactional

value through deregulation and new laws, accounting standards, etc. Fortunately, it didn't happen this time around; however, there is no guarantee that it couldn't happen in the near future. Deregulation to fuel financial engineering isn't locked down by one political party; both parties have pursued it in different ways.

Bottom Line, February 15, 2005, reported that

“If Congress goes along with President Bush’s plan to privatize Social Security—so that workers can open individual retirement accounts with a portion of the social security taxes—stocks will become better investments, particularly those of brokerages and fund companies, which are salivating at the prospect of the lifetime fees from the accounts. You won’t hear much from the financial industry—they don’t want to appear greedy—but their K Street lobbyists are wearing out their shoes promoting the plan to lawmakers.”

Michael Hudson wrote in *Harper’s Magazine*, April 2005, “The \$4.7-trillion Pyramid: Why Social Security Won’t Be Enough to Save Wall Street”: “What Bush seeks to manufacture is a boom—or more accurately, a bubble—bankrolled by the last safe pile of cash in America today. His plan is a Ponzi scheme and in that scheme it is Social Security that is being played for the last sucker.”

Senator Charles Schumer, Democrat representing New York State, is the securities industry’s “man in Congress.” It will pay to watch what he does in the coming years to retain/maintain/obtain Wall Street’s support for the democrats. Corporate pensions represent almost as much as social security, \$4.5 trillion, and already are in the hands of Wall Street (for the most part). For one thing, financial services firms are seeking relaxation of rules put forth in the Employee Retirement Income Security Act.

The fact is that financial engineers have to look for the “next” big wave, once the previous one crashes. It has been a known fact for more than twenty years that social security is the ticking time bomb of the federal budget. Who’s to say that the same power elite who have been serving all administrations for the last thirty years won’t manage to “whisper in the ear of the president” and tap into this cache? Let’s face it, Schumer is still the man in Congress and he’s got more power today than he did last month with an even larger Democratic-controlled majority in both houses of Congress.

Carbon Trading: Bigger Than Money

Social security may be safe for a few years anyway because the financial engineers and power elite have an even bigger source of transactional value in the wings: global warming and what's known as "carbon cap and trade." Again, the financial engineers benefit because there is no ideological rift between the two major U.S. parties or, apparently, in the western economic system (e.g., EU, Japan).

To understand how massive this potential source of arbitrage and transactional activity is, realize that carbon is emitted everywhere! You emit carbon dioxide from your car, your furnace outlet to the back yard, your dryer discharge, and through your electricity consumption. Industries emit massive amounts of carbon dioxide. The electricity industry and the transportation sectors are responsible for two-thirds of carbon discharges. Wherever carbon-based energy is used (all fossil fuels and biomass, for example), carbon dioxide is discharged.

As carbon discharges are monetized and trading system legislation passed by government (the EU already has a mechanism in place), the transactional value of carbon as a financial engineering exercise becomes almost incomprehensibly large. Until Wall Street firms got caught with their pants down in this latest debt crisis, they were salivating at the prospects of carbon trading.

While this activity is (and will be) sold to the public as "saving the planet" and solving global warming, the true objective in a market economy will be to create a vast new marketplace in emissions credits. Wall Street firms have been investing for this eventuality (at present supported by the Obama administration and supported by virtually all presidential candidates during the campaign) by: a) issuing their "Carbon Principles" stating that they would not invest in coal fired plants until carbon sequestration was commercial (de facto admission that coal would not be viable until the year 2020, the earliest year all experts predict sequestration will be commercially viable); b) buying up wind energy companies and investing in wind projects; c) monetizing the gas-fired power plants they purchased at fire sale prices during the last "crisis" (post-Enron); d) tightening their control over electricity and natural gas trading; e) and refusing to finance new nuclear plants because of too much long-term risk.

Everything Wall Street firms had been doing the last five to ten years has converged on the objective of creating volatility in energy markets and increasing the arbitrage value of carbon, and their ability to act as “market makers” in the carbon trading business.

Something as simple as a carbon tax would achieve the same thing (monetize the value of carbon emissions so asset owners can plan and invest accordingly), but why slap a simple carbon tax when you can create the kind of complexity suggested by Bookstaber that lubricates the financial engineering machine and generate transactions (and profits for the transactors!) by the millions?

The Rest of the Economy: In Hock

It's straightforward to extrapolate what's happened in energy and in housing to other parts of the economy—think about retail centers, malls, automobiles, green and alternative energy, education, health care, and many other fields. As citizens, and as members of government and corporate institutions, we have converted a tremendous amount of our asset value into debt and debt instruments for transactional value. We have subjected our savings and our equity to risks even the experts know nothing about (Ben Bernanke, according to Paul Krugman in the *New York Times*, had to have a refresher course from hedge fund managers on leveraged lending), putting our faith in financial engineers who only seek current cash from transactional fees. Those financial engineers rely on models they scarcely understand themselves.

An article in the *New York Times*, Friday, November 2, 2007: “The securitization markets came to be critical for the financing of America—everything from corporate loans to credit cards—and were amazingly profitable for the investment banks over the last decade...the products that were being sold...had what seemed to be the great virtue of not having real market prices. They could be valued according to models, which made for nice consistent profit reports.”

Interestingly, this is the same thing that happened to Enron and its brethren in the energy industry (although everyone seems to conveniently forget this). The merchant energy firms were allowed by the Financial Accounting Standards Board (FASB) to use their own in-house models to value their natural gas and power plant

assets vis a vis the emerging electricity trading market (which hadn't even shown enough history to provide a credible foundation).

Wall Street was happy that these firms were showing such enormous growth on their balance sheets, with all the debt laden stuff off the balance sheets. The accounting firms sanctioned it all. However, these models were never blamed for the debacle. "Equity analysts and corporate crooks" (as described in the NYT article) took the fall. Later the same article states, "The success of securitization is one reason that an index of investment banking and brokerage stocks has outperformed the S&P 500 stock index in every year since 1998."

The consequences of allowing financial engineering to get so out of hand are far-reaching and may even be irreversible. Because the U.S. (and other western nations) have not invested in long-term production capacity, more workers today make their living off of the "churn." As corporate and industrial America sheds workers, more entrepreneurs and "free agents" no longer draw a steady paycheck but instead make most of the compensation when "deals" are closed. This not only includes the obvious occupations of hedge fund and private equity fund workers, but law firms, engineering firms, consulting firms, accounting firms, lobbyists, real estate agents, title companies, and many others. As just one example, an engineering firm might devote more resources to due diligence evaluations of an infrastructure asset for M&A than to designing and building a new asset.

Each time a home is bought and sold, a company is divested, or a "big box" store property is developed, a collection of professionals from the services economy is involved. This skill set must, by laws of nature, perpetuate itself. These professionals (and their firms) will look for and promote, overtly or subconsciously, more deals like the last one that made them money. Trial lawyers need more personal injury cases, real estate agents need to flip homes more often, consulting engineers need to evaluate property and equipment, stock brokers need to buy and sell more stock, and CEOs constantly need to adjust the conglomerate's or corporate balance sheet to reflect new volatile market conditions. M&A specialists need more companies to roll up and then divest. All of these professionals must lobby in Washington and the state houses to

ensure the appropriate regulatory frameworks to drive their businesses. Many more professionals today are compensated based on transaction fees, not salary, than they were twenty years ago. Can all of this be reversed?

Christopher McKenna, in “The Origins of Modern Management Consulting,” (*Business and Economic History*, 1995), provides a fascinating account of how “engineers accountants, and lawyers, often supervised by merchant bankers, provided counsel that later became the primary repertoire of management consultants.” In an interesting reversal of fortunes, these firms and functions provided key support for the bankers, whereas today it is the financial services firms that provide key support (e.g. justification for projects based on financial engineering) to the professional service contingent.

Epilogue

The financial shenanigans have been exposed and temporarily arrested, at least for the time being. The situation has become either a protracted recession (you know someone who lost a job) or depression (you lost your job). The entire global economy is deflating. But until our elected officials, corporate boards of directors, and the public at large get to the root cause, the systemic problem we’ve created, we are doomed to another cycle in approximately five years and suffering through the long-term consequences of short-term thinking.

The only way you can, for example, pay for a building or asset designed for the lowest “life cycle” costs (and here we include all of the environmental externalities) is if the owner, the entity that pays the higher first cost, is the one who benefits from the lower life cycle costs. Few entities which would occupy a building today qualify, except perhaps a university or government entity. For all others, the first cost can only support what value can be extracted before the asset is flipped. Strangely, the transactions-oriented economy has worked against the “ownership society” sought by President Bush.

Churn is when assets and “financial instruments” are not bought under a “buy, hold, and invest” strategy but instead under a “sell to the next guy” strategy. Most people don’t put new tires on a car they are planning to sell soon and they don’t make

“infrastructure” investments in a house that they are planning to flip. Similarly not many owners invest in a power plant that they are planning to sell once the price of the power plant’s fuel changes enough to make that asset valuable to someone else. The companies which “originate” mortgages are not the ones who hold them. They are sold to others who then package them together and sell them again as CDOs and other instruments. Each of these transactions results in fees collected in today’s dollars. Likewise, when they fail—CDOs, tech stocks, power plants, etc (e.g. current revenues don’t support the debt repayments)—then financial services firms also come in, buy them up for pennies on the dollar, and then turn around and sell them again. More and more time and money is spent on creating and closing transactions, instead of on investing in a business.

This pattern, as indicated before, has grave implications for our nation’s basic infrastructure of highways, telecommunications, electric power grid, water supply and delivery, airports, and so on. Suppliers of large engineered assets make money by getting twenty-year contracts for replacement parts and “consumables.” Does anyone honestly think this drives the design and engineering process towards the most robust, longest lasting components that don’t need to be replaced?

The loss of asset value extends to personal items as well, such as your computer (ever-changing software is more valuable than the server or box), your printer (a “transactional device to sell more ink cartridges and paper), your cell phone (you buy a new one every two years and transact business on it using telecommunications services). Virtually all suppliers of “hard goods” make money on services today. *The environmental impact of this consumption alone is enough to give one pause.* Many of us are unwitting participants in churn, extracting our piece of transactional value from an asset, all the while the physical condition of the asset base crumbles around us. Electricity service, by all measures, has deteriorated. How many people think we in the U.S. have superior cell phone service to people in Europe and Asia? Only people who haven’t been to Europe or Asia. About the only area I can think of where physical infrastructure may have improved is the Internet and digital technology which are still technologies in their infancy if not their youth.

Churn and transactional value is all around us. We rely on pharmaceuticals to treat symptoms instead of getting at the root cause of the disease and curing it. In a services economy, we buy more meals because the time we devote to cooking now is better spent obtaining more income. In a transactions-based economy, we eat more and more, lower quality, foodstuffs and then buy dietary aids and nutritional supplements to lose the weight or make up for what we've lost. Our bodies are vessels that supports more and more transactions—food, diet, exercise, pharmaceuticals, health care, clothing, etc. We drink coffee to keep us primed all day and then ingest sleeping aids at night. The convenience of the Internet allows us to buy more and more of what we don't need, in smaller and smaller chunks (think i-tunes). Cell phones are becoming the next platform for the transaction economy. We change jobs more often, and make work for human resources, training departments, head hunters and search firms, and drug testing firms each time a change is made.

Professional athletes are handsomely rewarded but subject to the transactions based economy. They are paid huge sums because of the value the team/enterprise derives from their presence well into the future, not because they are *that much better* than the player next to them on the field. These rock stars are created to support the future value of the enterprise.

Even our kids are in hock before they get out of college, many saddled with huge college loans for their undergraduate education, then with graduate school piled on top of that. Think about it: Some portion of a graduate's future value is increasingly being extracted by brokers and middlemen today.

In a sense, our financial system has become one huge loan-sharking machine, but someone owns the pawn shop and has managed to manipulate laws and regulation in their favor. The financial engineers couldn't have done it without acquiescent bureaucrats, elected officials, and appointed political leaders. The amplification of the system requires the assistance of pliant journalists who need to fill column inches in more and more print and web outlets that don't adhere to "traditional" standards of journalism.

How do we make the painful transition back to infrastructure, long-term asset value, and investing designed to the lower life cycle costs? How do we pay for all of those societal benefits everyone says they want—global warming solutions, better environment, improved and more dependable infrastructure (transit systems, highways, health facilities), and universal (or at least equitable) health care? Could we prevent invasions and wars by understanding that despots feed on volatility and geopolitical goals often contain the means to accelerate a transactions-oriented society?

The hope is that by exposing and simplifying what is certainly one of the root causes for the mess in which we find ourselves, we will find the will to remove that third V so necessary for financial engineering—a vacuous public willing to place their faith in financial engineers and instruments of financial engineering they do not understand. Maybe a few more financial engineering executives, politicians, and corporate CEOs will serve jail time for fraud, or at least be fired for gross mismanagement, rather than what is happening today (being rewarded with bail out money they can use for year-end bonuses). Only then might we keep these practices away from Social Security, global warming and carbon management, or any number of other places the “invisible hand” decides to next wreak its havoc.

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