The economics of equity short selling

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Abstract:
This article compares the following pairs:

Functionality of banks vs. that of stock brokers;
Issuance of cash vs. IPO of equity shares;
Cash savings vs. retirement and investment in equity;
Cash borrowers vs. short sellers;

This article also examines the short selling effects through micro and macro economics lenses, and reveals typical stock trading manipulation methods, and points out the products and by-products of today's Wall Street.

Definition:

Short selling:

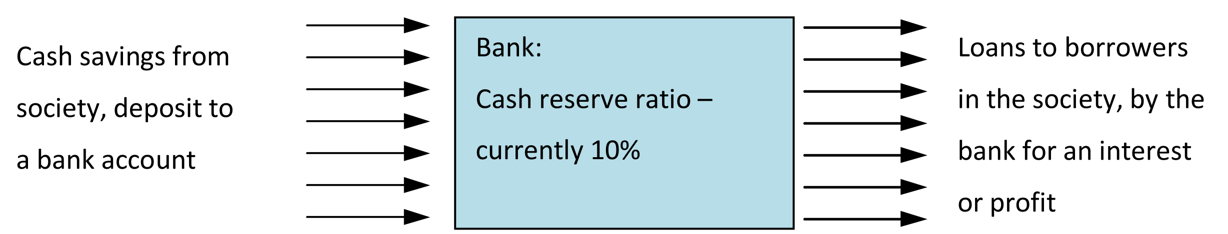
Short selling is to sell equity shares that sellers don't own. The sellers expect share price to drop and buy the shares back later for a profit. A regular short sale requires the seller to identify and borrow shares before the seller can short sell.

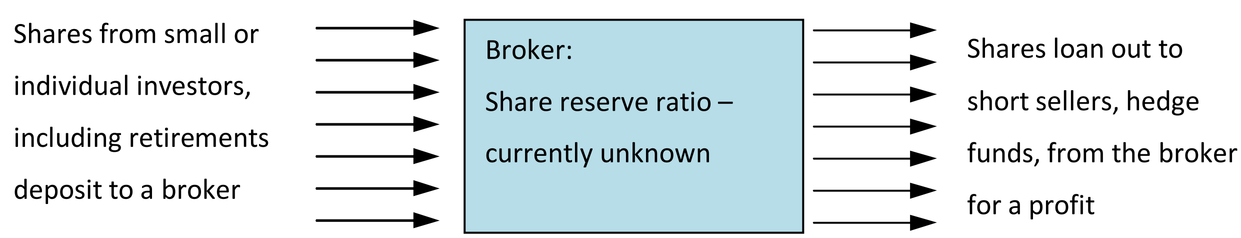
Naked or uncovered short selling:

Naked or uncovered short selling is short selling shares without borrowing the shares first.

Microeconomics of short selling

From the microeconomics point of view, short selling of equity shares sounds reasonable. A broker functions like a bank, individual investors deposit their shares to a broker, just like people deposit their savings into a bank. A broker can then loan out of the shares to other brokers or short sellers, including hedge funds for a profit, just same as a bank can loan out other people's cash savings to those who need to take a loan for an interest. The following diagrams compare a bank with a stock broker.





This seems obvious and reasonable. Allow shares to flow just like allow cash to circulate, but let's exam short selling under lens of macroeconomics before we conclude.

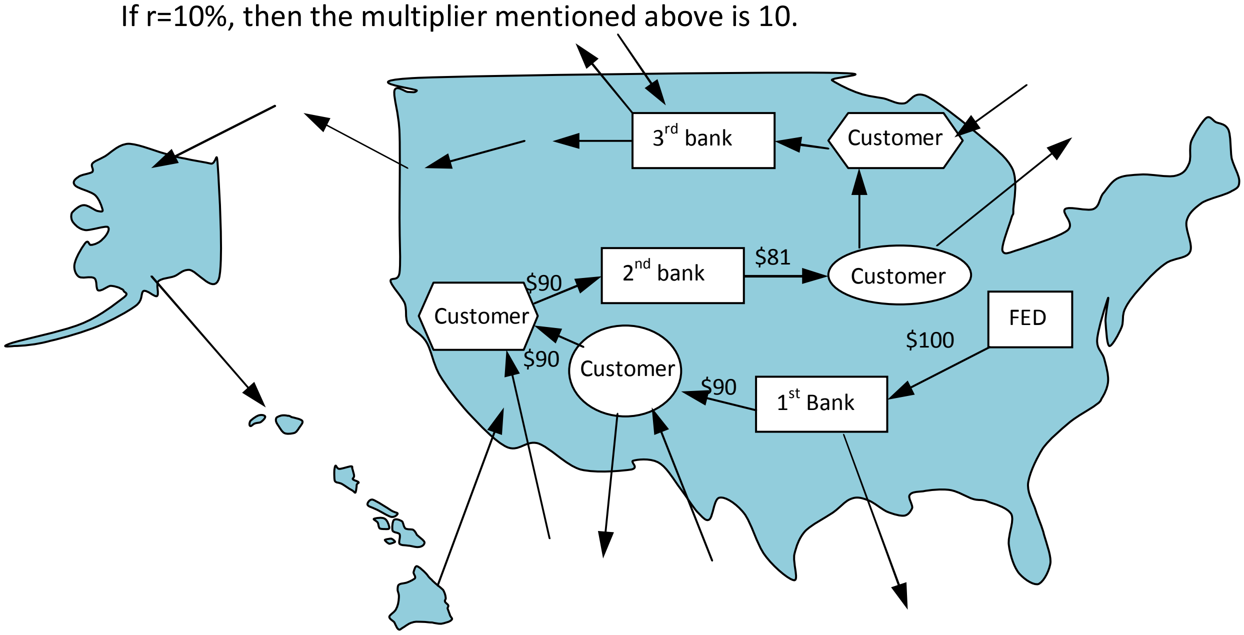
Macroeconomics of short selling
We will continue compare a bank with a broker, and cash with shares from macroeconomics point of view.

1. **Multiplier effective of cash supply**
   First, let us look into how cash works in the marketplace.
   When FED prints and issues cash (green bills) to the society, it has a multiplication effects. Assume FED lend 100 dollar to a bank at the FED's interest rate. If FED reserve ratio is 10%, then the bank can lend 90 dollar out to a borrower. The borrower will then pay his bills to other entities, and those entities who received payment will deposit the cash to the same or different banks, then all together, banks can lend the 90% of 90 dollars ($81) out again, and this goes on and on.
   Here is the math to figure out the total cash supply created by the 100 dollar issued by FED. In calculation, "r" represents the FED reserve ratio;

   Step 1: FED issues $100
   Step 2: The first bank received $100, and then lends out: $100*(100-r)%,
   Step 3: After the first round of circulation, and the cash gets to the second bank,
   Step 4: The second bank lends out $100*[(100-r)%]^2,
   Step 5: After the second round of circulation, and then gets back to the third bank
   … … This process goes on and on.
   And therefore, the total supply effect created by issue $100 is:

   Total cash supply = 100*{1+(1-r)+(1-r)^2+(1-r)^3+…}=100*(1/r)
   Or the Multiplier = 1/r, where r is the FED reserve ratio

   If r=10%, then the multiplier mentioned above is 10.



Changing reserve ratio would change the effective cash supply. In fact, that is one of ways the FED controls cash supply. There are two extreme cases:

> If the reserve ratio is 100%, that means bank can't loan cash out, and bank becomes a safe deposit box.
> If the reserve ratio is 0%, that would cause the bank troubles when depositors come back for their cash, and that will also cause inflations because the cash supply has become infinity from the theory, even in reality it can't be infinity because of limits in time and space.

This multiplier effect is probably detailed in many macroeconomics books, one of these books is "Principle of Macroeconomics" (ISBN: 0030270170), page 329 through page 331, and page 457 to page 459; by Gregory Mankiw, professor of economics at Harvard and former Chairman of President George W. Bush's Council of Economic Advisers.

2. The dilution effect of short selling a stock equity

When a company IPO shares to the equity marketplace, it is similar to the FED issues cash. Investors buy these shares at the open stock trading market, and deposit these shares to brokers. As explained above, this bears the same process as cash savings deposited into a bank.

Brokers then loan these shares out to hedge funds or other short sellers. By the same principle as above explained with cash, these shares are diluted with a "multiplier effect". The magnitude of the multiplier is unknown because there is no share "reserve ratio" regulated by SEC or other government agencies. Applying the theory, the multiplier can be infinity. Even with a multiplier of 2, which means short-sold once, it would effectively cut the value of the share by half, the initial investor, by definition, have lost 50% of value immediately! If the investor did not sell, it is an unrealized potential loss. This loss may not be reflected on share price immediately, but it will be clear later when market efficiency kicks in.

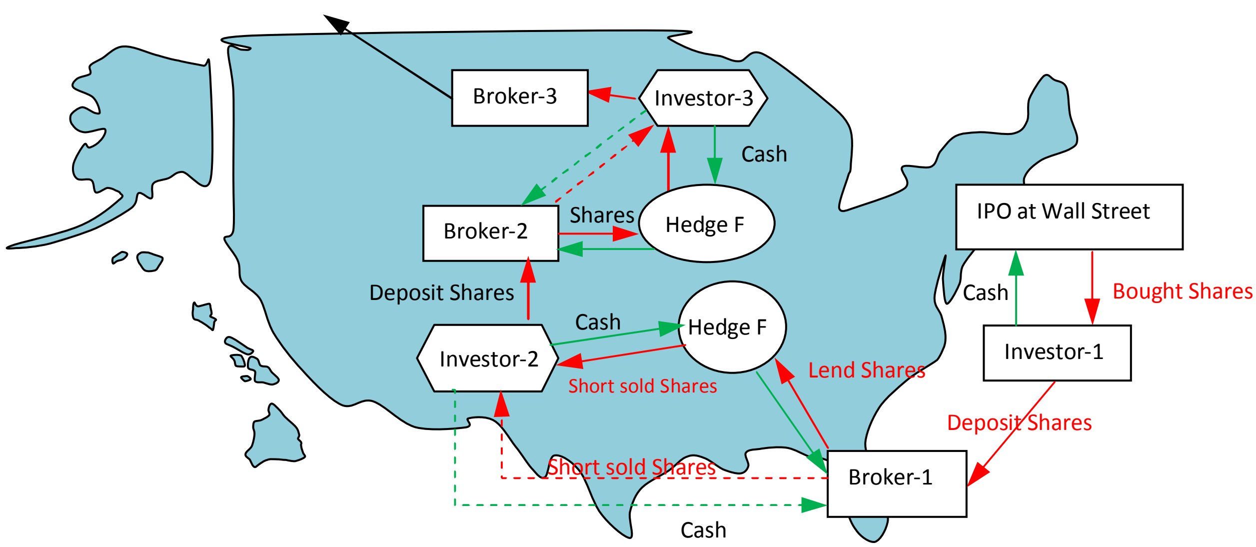
The brutal truth behind the scene is even worse, when investors deposit their shares into brokers accounts (also applies to retirement accounts and portfolios), brokers can legally lend these shares or portfolios out for an interest or profit, to short sellers like hedge funds. Then these shares or portfolios can be short sold to other investors or to the same investors. These new investors or shareholders will deposit their shares again into same or different brokerage accounts. By the same principle, these brokers now can lend the shares out again for an interest, and hedge funds can borrow and short sell these shares again.
This can go on and on. The supply of the shares unfortunately can become infinity theoretically.

Through this process, the same shares can be sold again and again. Hedge funds or short sellers repeatedly collect real green cash while pushing the share price down and further down. As a result, investors own "paper money"- shares get diluted again and again. With unknown "multiplier", there is no way to gauge how many times a share has been diluted. Eventually, investors may decide to cut loss, and sell their shares, and new investors came in (you could be the new investor if keep buying 401K or IRA). And again, deposit the shares to a brokerage account.

Through this process, both brokers and hedge funds have a common interest. They both are beneficiaries of the short selling process. Brokers, who suppose to be shareholders' assets manager, can be corrupted with hedge fund managers, betrayed share holders, and stole shareholder's assets.

Yet, the worst is when brokers turn around and become hedge funds or short sellers behind the scene. They can legally take all investor's assets into their own pockets by short selling again and again endlessly. Each time they accomplish a short sale, they harvest real green cash and push the share price further down.

Similar to the cash supplying effect, the following diagram shows share floating effect, where green arrow represents cash transfer, and red arrow represents share transfer. This scheme may mostly happen in domestic, but it does not really have a border, foreign investors may suffer just same as US investors.



3. **Differences between cash and shares**
One difference between cash and shares is the number of shares issued from an individual company is much less than the cash pool the FED issued, which makes trading of the shares much easier to manipulate by powerful brokers or hedge funds.

The second essential difference is that stock equity valuation is measured in terms of "dollar", and the share prices "in dollar" are frequently changing when traded (does not include issue new shares), while cash does not change its value in terms of "dollar" when it is circulated (does not include injection of new cash). This difference presents a great incentive for hedge funds and short sellers to minimize the targeted share price "in dollar" by using all possible tools, because that is the way to maximize the profit in dollar (not in number of shares) for them.

With dilution on one hand and manipulation on the other hand, brokers can make an "outstanding" profit, in addition to pay the owners or executives hundreds of millions in bonus. If this scale of salary or bonus is not systematically "sucked" or stolen from regular Americans' investment and retirement accounts, where else can it come from?

4. **Cash borrowers and short sellers**

   In the banking system, the cash borrowers take loans for projects. Borrowers typically pay an interest to the bank for using of the cash, and bank give a part of the interest to the cash owners as a return – saving account interest. Most importantly, borrower does not have the capability to devaluate the cash.

   Short sellers are different. Short sellers may borrow shares to short or may not even borrow. If they do borrow, they borrow from brokers, and they may pay brokers an interest, but this interest is not shared with share holders. The fact is the short seller can effective devaluate the share in terms of "dollar", by dilution and by manipulation.

5. **Financial 2-D analysis and Zero Sum Game**

   If we put the society total asset at a given time as the first dimension, and timeline as the second dimension, it is easy to understand the total assets grows over time, as a obvious proof we today live in a much better condition than any of our ancestors. This asset growth came from generations' hardworking and efforts including technology break through and asset accumulation.

   However, at a given time and on a macro scale, a society has a total of fixed amount assets. Unfortunately, under this condition, it is a zero sum game. If some people want to get rich or richer fast, they have to make other people poor or poorer.

   Wall Street is fulfilled with smart people. With their extraordinary talents and cash power, they can easily lobby or even corrupt the government agencies like SEC and FED towards their benefit. Allowing short selling stock equities is one of most unfair regulation that SEC has decided to allow. This current economic crisis has accomplished a great thing to a small group of people. It systematically "vacuumed" assets from majority people's account, and redistribute these assets to a small group of already rich people. None of assets has been destroyed, but only redistribute or changed hands.

6. **Hosting Advantage, and Game Rule in Trading**

   It is clear that if you go to a Casino or buy a lottery ticket, you have a chance, may be a very small chance to win. But overall, the hosts of Casino or the lottery issuers are "programmed" to win. They are the people make the game rules. They have built a “system” that guarantees their overall winning. In different words, the hosts’ winning is a sure thing, and players’ winning is only accidental.

Wall Street has become similar to a casino in its principle of operation nowadays. The only difference is that Casino is a clearly labeled, volunteering gambling site, that gamblers are fully aware of the game, and they can choose not to go. Wall Street is different. First, Wall Street is clearly labeled as a world “investment” headquarters. Over the years, Wall Street has effectively created a perception of positive investment “return”. Regular people assume they bought small shares of companies, and they never know their assets were short sold again and again and the share prices can be driven down. Second, Wall Street is a place that most people can’t avoid. People may have a house (through mortgage), retirement account or personal investment account, all the assets are “managed” by Wall Street, either directly or indirectly. Therefore, it involves with the entire society and connected with the whole world.

At Wall Street, executives or super size financial tycoons have had clear visions - to maximize their profit. They hired various gurus and talents, including macro scale strategists, planners, computer engineers, information technology experts, traders, market makers, market analysts, economists, various writers and editors and different forms of publishers such as Radio, TV, Newspaper, Magazine, and various Journals. They set business objectives, form strategies, plan and prepare accordingly, specify tasks, systematically and step by step carry out their plans, in a very organic and coordinated manner.

Individual shareholders or investors have no choice but to play game within rules made by the host- the Wall Street. At the “bubble” blowing stage, it is not played as zero sum game, everyone experiences an asset growth, and all parties are happy. However, the hosts may decide to switch games any time. When they decide to play a zero sum game, the assets they win have to come from the assets others lose. The outcome is certainly planned accordingly. Short selling then becomes the new “strategy” of the zero sum game. It is tool designed for host to win, and for investors to lose.

During a zero sum game, after all stages are set up, bursting a bubble is essential and necessary. Massive short selling is like piling intensive pressure on the bubble. If the bubble only contracts and not bursting, the host would not realize the maximum profit. In order to maximize the profit, host has to burst it. Under tremendous pressure, all it needs is a sharp poke such as a designed “rumor”, or a negative comment from a hired influential analyst or economist. If one is enough, same as short selling, negative analysis and comments can pile up.

Even though, host short sellers may pile up pressures on solid companies. And any strong pokes of negative analyses or comments may create a big dent or local damages. But these companies do not burst because they are indeed solid. However, that does not mean the host short seller can’t kill these companies. It just takes longer time. By piling up with negative comments, combined with daily stock price manipulation, and continue shorting the shares, the host can effectively keep the target companies' market capital low. This has two important effects:

> The first effect is to gradually destroy investor's faith and confidence, which results in selling their shares, and driving the share price and the market capital further down.
>
> The second important effect is drying up the targeted companies' life blood – financial resources. Because when banks consider financing a company, they evaluate share price and market capital. Without appropriate financial resources, it can effectively limit the targeted companies' capability in initiating new projects, developing and marketing new products or services, and it can also limit the hiring capacity and cause talents to leave the targeted company.

If this keeps going on, it is just like planting an English parasite vine on a healthy tree. Even the tree is prospering with heave foliage, has a strong trunk and rich branches, and is deeply rooted in fertile soil at the beginning, it eventually can't avoid the fate of dying because the parasite vines will never stop sucking the nutrients from and tree, and covering and wrapping entire tree, and outgrowing and blocking the sunshine. Killing the tree might not be the vine's ultimate goal, but that is what it does. However, killing the targeted company is certainly the short seller's ultimate goal because that maximizes their profit.

Stock price manipulation happens all the time, everyday. Many examples are available. Here are 5 typical direct manipulation methods one may observe.

1. **Large volume naked short to quickly drive the price down**
   With today's digital trading technology, hedge funds or institutional short sellers can effectively naked short any equity and drive the price down significantly in a few minutes. This kind of quick drop often creates panic selling, traders and individual investors sell their shares without even thinking what is happening, because they don't even have time to think. In 2 minutes, a stock can drop 10% to 50% dive. The following chart shows a drama happened to a company recently. This company's stock was trading at $24+ per share smoothly, and suddenly a large volume drove it down as low as $7.50 per share!

   This is exactly what the manipulators want to see. The clearing system allows short sellers 3 days (need to verify) to clear their exchanges, which allows them to short in heavy volume and smash any potential price up swing quickly without borrowing shares ahead of time. Three days, it is long enough for price to settle down at the controlled level. After they effectively get the up moving momentum down, and they can still continue keeping the price down while buying from the panic sellers or those investor who set stop price.

When bidding volume is low, short sellers may also play games by selling from their "right pocket" to their "left pocket" by setting low bids, to effectively lower the price without selling actual shares. If the short sellers decide to buy back, they can keep it low and gradually buy back. Often they don't even bother buy back. Their options are, pocket the fat profit first, if possible, kill the targeted equity to maximize the profit. If not possible, they keep manipulate it, and wait for opportunities to push down further.

The last option they still have is to declare bankruptcy, and take their green and real cash, leave the uncovered shares behind in the system. Either way, these shareholder's assets managers, brokers, hedge funds, or other institutional short sellers, are big winners, while the hard working Americans are guaranteed losers.
Is this not a system problem?

2. **Constant intervene to hold the price down – Parasite vine**
   Hedges funds and institutional short sellers also set an equity price by constantly trading. After they own a large short position, they constantly buying and selling the targeted stock to keep the price down. Traders and investors look for a return. If hedge funds or institutional short sellers can effectively keep the price down, eventually traders and investors are likely to give up. The short sellers understand this, and take the controlling advantage, and persistently manipulate it. Eventually, investors sell their shares at a loss and leave, which cause the price to further drop. When this happens again and again, no traders or investor want to buy the targeted stock and cause the price going down even further. Then the hedge fund can just cover or kill the company, either way, they are the winners, and all others are losers.

3. **End of day price anchoring**
   One picture is better than thousands of words.
   This stock was trading whole day in a narrow range, but it had one dramatic drop at 4:00 PM right before the market close, while there was no news. It is not hard to understand, the intention of that dramatic change was to set price for the next trading day, as the

previous day's closing prices is always used as a reference for the following day's starting price. The anchoring effect can just keep the price low with a little effort. Similar charts reflecting manipulation are available everyday on many websites.

In fact, if any reader is willing to do a little research, one can easily find this company's share price has been constantly manipulated. Today as I am writing this article, it is trading a little over $7 with a price-earning (PE) ratio approximately 5, and the current shares short sold is 14.7 million. For the last 18 months or so, the number of this equity shares short sold has been changing from 11 to 16 million with about 33 million floating shares (total issued about 112 million shares, 70% owned by the executives and employees are not in floating). It was also funny, that this stock has always been naked short sold until SEC addressed the naked shorting in later 2008, and then all a sudden, all naked short positions become regular short positions.

4. **Trading technology and digital system control**
   One can also occasionally observe the digital trading tools such as "streamer" or "level II" ask price "stalled", "jammed", or price get "pin-on". The bid price can be higher than ask price, and yet the deal was not allow to go through. Sometimes the ask price are kept lower than bid price for hours. This can effectively hold down an equity trading price with no cost.

5. **The power of media and coordination**
   Powerful institutions own huge assets and have huge supply of resources. They can afford anything or anybody in this world. Famous or infamous, people or companies can be hired to publish articles, write editorials, specify so called "target price", or rating a company from "strong sell" to "strong buy". A lot of these things are in names of public information for shareholders' interest, it is often purely for their own interest. Large organizations use these "language" as signals, so small followers can coordinate with them to achieve specific objectives.

> Many readers may also have experienced, manipulators pull out and re-publish old news to create panic selling. One example is on March 11, 2008, Yahoo Finance freshly re-published three pieces of old news by Wall Street Journal dated back in October 2007 about LDK. No accident, no coincident, LDK at the time had over 12 millions of naked short shares.

There are also indirect manipulations, such as manipulate option prices and index funds and ETFS.

It is interesting on April 17, 2009 that NYSE chief said market so far has been push up by traders, not investors. While reading this article, I was thinking other than a few big boys, if there are still any investors around. The investors owned shares, their shares were short sold, diluted again and again, drove down to worthless shares. They expected a short cover, but hedge funds do not want to cover, they prefer to kill these companies so to maximize profit!

Conclusions and Speculations

Allowing brokers to lend shares for short sale has a significant dilution effect on the share value. Combining with all manipulation tools, media power, trading power and price setting power, Joe the Plumber, an average American can do nothing but suffering from the loss if dare to get close to the Wall Street. Retirement accounts, house, or any other assets are all at risk of losing if have not lost.

Wall Street is worse than Casino. Casino is clearly labeled for gambling, yet sets a rate, and allows a small chance to win. Wall Street labeled as so called “investment” only allows host to win when they decide to play a zero sum game. Any saving one may put into any “portfolio” runs by Wall Street as investment, one may not expect any positive return in a long run, because the shares are probably short sold to you, and they may be short sold again and again, until they decide to play another bubble blowing game.

Wall Street is now believed as a place that legally allows steal, robbery, and systematic digital looting. It is probably the largest manufacturing plant that, uses other peoples’ houses, foods, retirements, and individual and small investors’ assets as raw materials; traders, analysts, economists, writers, publishers, TVs, internet and other digital medias as production tools; short or naked short selling, daily and endless manipulation as processes; to create multi-billionaires, or multi-millionaires, super corpulent scale bonuses, with by-products of global unemployment, homeless, starvation, and other forms of poverty if not all.

Wall Street, the black hole of global assets! As I am writing this article, I browsed the news and find there are 10 colleges received over $50 million donation, I can’t stop thinking a short while ago, a high level executive refused to return the bonus demanded by President Obama, and claimed he will donate the bonus. I am only curious, how much “bonus” these “gurus” have made over the years, and how they dug many Americans into hollow shell, and homeless!

The future perspectives are even darkening, many Wall Street large companies died because of the bubble burst. Only a few big boys are now growing stronger and more muscular than any time before. It will be more coordinated than any time before in “vacuuming” and redistributing regular people’s assets if any still left. Regular people who put savings into the Wall Street will never have a chance to understand what is exactly happening on Wall Street. Government agencies will more likely to be lobbied or even corrupted by big boys who can always better articulate their reasons, and who are also closely related to the agencies. The current SEC’s inactive to naked shorting reflects that.