**Notes On Leir Bubble Conference**

**Introduction**

Conference began with an introduction discussing the origins of the Conference and NJIT’s School of Management’s interest in Financial Bubbles. Arthur Hoffman then discussed the origins of the Leir Center and the reasons for the Conference.

The issue of what is a bubble and how to define one was then introduced as an important consideration if one is going to understand them. The idea that there are different types and sizes of bubbles was introduced almost immediately. Schumpeterian or industry bubbles were one example. The question of gold as being different was then considered because some people view it as an alternative currency. The idea of movements above equilibrium and movements back [cobwebs] are not bubbles. The question then arose whether this also occurs in biology when there are no natural predators or one outruns a host. In these cases the system changes and there is a crash. Chain reactions until there is an explosion may be a similar idea. New types of leverage or resources feed the systems until that source is used up. Then there is a crash due to no further support. This may be true of natural excesses as well.

Government incentives may also create a bubble as in the housing mortgage guarantees or triple AAA ratings. Government regulations can also affect social attitudes towards risk taking.

To further the analysis of bubbles Garber’s idea that bubbles are too fuzzy and vague must be addressed.

One criteria for a bubble is that there does seem to be a need for an open system [Communist Russia or China did not have any but they emerged once the system became more open and market driven.]

There was also agreement that exponential growth or price acceleration is not a bubble in and of itself if the associated price increases are justified [Google and Apple stock prices]. Rather there must be exponential increases in real prices not economically supported.

These comments were then followed by a discussion of the recent housing bubble and its origins. It was noted fixed rate portfolios were turned into profit making units.

Concern for bubbles is really due to their potential to disrupt the financial system. Thus size and effect are relevant considerations when assessing a bubble and what to do about it. Ones that affect access to credit are thus key.

Economic growth and risk taking are part of the market and capitalistic system. Entrepreneurs and the creation of new companies or old companies entering new businesses or markets are all important aspects of economic growth. Yet these decisions entail risk since they may not succeed. On the other hand if they succeed very well they will draw in competitors and there may be overshoot. Therefore risk to the financial system is the aspect that needs to be carefully considered.

This is why changes in financial institutional arrangements can contribute to a bubble’s development. Perceptions and historical experience are relevant in this regard. One problem here is as speculators enter the market for some period it looks less risky.

In sum the question of whether some bubbles are good or beneficial to economic growth under some circumstances needs further refinement. This is because it may be true that in the short-term all bubbles are bad and the larger they become the more this is true because they can be economically disruptive. But in longer term some may create economic benefits that more than pay for the adverse impact of the disruption and thus the actual cost of the bubble should be seen as a social investment.

These Schumpeterian bubbles are part of the risk taking function in the economy. But these should be differentiated from financial bubbles that are always bad and are frequently a function of bad government policy. Further it may argue for policies such as margin requirements that restrict the ability of banks to be severely impacted by the spillovers from potentially good investment bubbles when they crash.

There was general agreement that bubbles are psychological and social phenomena as well as economic phenomena. Therefore perception is a key aspect of bubbles and the more obvious the opportunity to make money or that the asset is over-priced becomes, the more the bubble moves up or down. It was also agreed that mania is crucial to bubbles but the question was raised when does that mania begin and how does it evolve.

Since Bubbles are based on over optimistic expectations, pressures to buy so as not to miss out on a sure thing are one potential signal whereas pressures to sell to keep the process going can be the signal for a top. The asset bubbles may in fact be a bad investment from the beginning because one cannot time them. Also going short a bubble early can be very painful. At the same time there are situations as per Kindleberger-Aliber-Minsky paradigm where the bubble begins for logical economic reasons but then at some point switches to mania and the bubble starts. This is why Garber called them vague but is also the reason this conference is being held to see if we can create more concrete signals or measures to understand a bubble’s type and where it is in its development.

One participant noted that during the Nifty-fifty mania in the 1960s and early 70s investors only got a 6% return on growth stocks and questioned at the time whether that was enough and was told “If you buy the right stock it does not matter”. He heard this same response again during the Internet boom and wondered if that standard answer is the signal for a bubble and coming crash since it shows investors are only looking at the upside.

In balancing the goals of an efficient market versus a resilient market, the policy response is really important. Yet market-based rules seem subject to manipulation and appear too vague. Thus black line rules seem to work best.

The size of the bubble also seems an important policy measure with large bubbles affecting the financial system and the economy the most critical whereas a small tech bubble or a single commodity unless it is gold or oil seems less critical to monitor and manage. This raised the question of whether there are patterns to investment by sophisticated investors that lead to bubble development? Most bubbles rely on a good idea that can be promoted and where investors and speculators are prepared to be promoted.

**Presentations**

Presentations on herding and momentum started with that fact one sheep does not usually fall off a cliff but a herd can. Herding in asset prices such as stocks is when prices tend to move together in certain situations. Once this starts it can gain momentum on both the upside [greed] and downside [fear]. Following the trend or imitating others can have power even if one does not believe the story. This fact can drive prices away from fundamental value.

More particularly this price action can attract unsophisticated investors who will exit quickly on the downside since they are considered not to have “strong hands”. Herding can be inefficient in this case but can be efficient when it is based on copying people that actually know what is the actual story. The presentation used an accepted measure of herding while momentum is measured based on the past 6 months returns given the change in prices.

One participant raised a question about the role of high frequency trading and volatility. It was noted this may create false liquidity and misperceived depth in the market. An appropriate policy response therefore might be a Tobin tax.

It then suggested one should look at momentum effects that lead to increased herding that then increases momentum as a signal that the mania phase has started. Then if the level of herding increases it shows the mania phase is developing further.

Though six months is normal financial measure of momentum herding changes and evolves with the bubble over 3-5 years. The microstructure of financial markets and how traders are organized play a role in mania transmission and how the bubble develops. But the historical existence of bubbles shows organizations may respond to bubbles too due to perceived profit opportunities and the two can interact to promote the bubble. Thus certain market phenomenon may disappear once the bubble bursts. This was true in the Japan Bubble for example as stocks and real estate prices rose increasing bank capital that encouraged banks to make more real estate and stock loans.

The mathematical model presented included herding and role of speculators and investors though it is also possible to introduce government as a player and regulator. In this view Bubbles are generally seen as demand side phenomena with supply responding to this demand from investors and speculators. If supply is limited prices will rise more quickly and the bubble will emerge faster.

When there is no more demand the panic and crash will come and new supply will disappear except for the existing stock of assets. Price increases affect both speculators and investors so price action is positive and makes the market look less volatile and more stable. But as prices reach the top and the price action slows this slowing causes some speculators to leave and starts the ball rolling in the other direction leading to panic and crashes. This is exacerbated by the fact that by this time most investors, particularly value investors, have left the market leaving only speculators that are quick to sell since they are only in the market for the expected short term price increases.

Supporting and growing the bubble therefore requires growing aggregate demand. This, though, will always reach a limit based on the total value of the asset class and the ability investors and speculators have to buy at higher prices.

Interestingly if there is too large increase in supply, it will moderate the price action that led to herding and the start of the bubble. Thus a reduction in herding and a coincident reduction or leveling in upward price momentum created by more supply is a signal the bubble is close to the top and that a possible panic and crash is near. In the final months of the Internet boom many new IPOs were not fully subscribed and underwriters even approached small net worth investors.

In effect because the demand curve is composed of at least two basic groups of buyers their different behavioral characteristics are key both to the development of the bubble and its crash. This model can accommodate more micro trading or buying groups as long as their reaction to the bubble’s evolution is different. Since some may need to drop out of the market as the bubble evolves and the prices rise this will clearly lead to a moderation of demand and a reduction in the upward price action that starts the downward price process. This will happen more quickly if supply is growing as well.

One such important sub-grouping is that speculators themselves may be divided between rational and irrational speculators with the latter being more heavily influenced by price action and market peer pressure.

Reaction of different buying groups can in turn be linked to herding in relation to price momentum. Therefore the reaction of these different groups to price action is important. Investors that sell early may reenter the market later feeling they sold too soon. Nevertheless there have to be enough speculators in the aggregate with access to resources that can push the price up from its current level even if all think prices are going up.

If they do not have those resources they cannot translate their perceptions into reality so that prices will not go up as expected and thus this will create a feedback mechanism that will force speculators to revise their price expectations or the perception that prices will continue to rise. Thus the bubble will not enter the mania stage. The same is true on the downside with respect to those that believe prices will fall indefinitely.

The next presentation looked at relating the herding and momentum considerations to institutional considerations driven by human behavior. This was an attempt to get behind the models and data that reflect or document that behavior.

Here the conference looked at the mix of financial and social incentives and pressures on the participants in a bubble to try and examine whether bubbles represent a really different type of social and economic phenomena. Some experts in this field see bubbles as natural phenomena that emerge from capitalistic organizations. Their legitimacy thus evolves from perception that they are related to innovation even if the participants do not understand them.

A successful situation is when the innovator understands the innovation and can legitimize and explain it. If the innovator or participants do not understand the innovation or change, then the innovation or change will legitimize itself especially if initially it seems profitable. This will lead to imitation and peer pressure where institutions will not question the results because everyone is doing it and making money. This seems to have been the case with bundled subprime mortgages rated triple A.

Signals that this situation is actually occurring are when the innovation is extremely complex and cannot be easily explained to regulators or customers. So for example the Wall Street quants understood models they were creating in terms of the mathematics but did not adequately understand role or risks in their assumptions. This process then becomes a Behavioral Commitment by the organization to a course of action that is difficult to stop without a crash.

Refusal or push back from providers to regulators is part of the signal. Therefore when an institution keeps buying more even when that action is being questioned this is a signal. Accompanying this signal are arguments that the firm is perfectly hedged and risk is being managed. Yet the actual situation that evolves is a misperception of how much risk there is and a mispricing of this risk. There may also be a close relation between this development and what is considered ethical. That is, if one really believes an investment is OK and low risk [sell self] then one can sell customers. But if one cannot really explain the investment and the risks in detail then may be it is unethical or even illegal to sell the investment.

Because the regulatory cycle tends to be pro-cyclical whereas it should be counter-cycle this exacerbates the institutional biases and promotes the bubble when it should be countering it. This supports the black line rule versus market regulation issue noted above.

From this discussion it became clear marketing is closely related to the misperception of risk and the commitment to a continued course of action prior to a crash. Once committed the organization will provide resources to selling this course of action to buyers, fully integrating sellers, organizers and buyers. So marketing is a key aspect of what gets people optimistic, a critical element of the mania.

Using the recent real estate bubble as a proxy one can see lenders sought higher yields through lending to riskier buyers but believed the investment, securitization and payment risk was low due to bundling and pooling, though some questions remain whether they knew risks but misrepresented them to buyers given that their jobs depended on selling these financial products. Marketing of course took place both by the mortgage providers and those selling the houses. Exploiting buyer’s ignorance and optimism is a key to this process. This point was highlighted later in a presentation on optimism in contracting as part of the bubble paradigm and history.

Perception is everything. New homebuyers in real estate as lenders and packagers went through the prime buyers were subprime. Lenders and developers needed ways to sell to them even though selling them a house they could not afford was clearly unethical since lenders knew the target market would default and stick banks or more likely investors that bought securitized loan packages with the bill if servicers could not collect on loans and had to foreclose on behalf of the investors. This is the source of overly optimistic contracting created through financial marketing.

This optimism was supported by government behavior in terms of both public statements and concrete actions through Fannie Mae and Freddie Mac for which the public ultimately paid via taxpayer guaranties and foreclosure prevention. This was supported by various statements: such as “everyone is doing it or I would not sell you something that was not value or home prices will only go up”. In this manner one can relate the crisis to US individualism and short-term performance pressures that created an environment for sales persons to deceive the buyer. But there was also incentive for the deceived to agree due to the promotion by the government and the press of the benefits of owning a home even if you cannot afford it. This generated a optimistic willingness to contract. Unfortunately for many the process turned the American dream into a nightmare.

**Recognizing Bubbles**

It was suggested that recognizing bubbles was not that hard even when one is in it. Rather the issue is what to do about it as an investor or policy/regulator. This is difficult especially when the government as well as the general public seems to be benefitting. In addition regulators seem to frequently misperceive the size and impact of the bubble on the economic and financial system when it pops.

Further because it is painful for an investor to be short if the bubble continues for a while [i.e. shorts too early], the best strategy may be for an investor to go into cash and wait for the bubble to burst and then buy back undervalued assets. However, exercising such patience can be difficult when others seem to be making money, especially for professional asset managers under pressure from their clients.

For the regulators the available tools may be limited and to the extent every bubble is new and different, tools put in place to deal with the last bubble may not work in the next one. Still regulators must in any case want to act and thus cooption or pressure from bubble participants may be an issue particularly when there may be both rational and non-rational players in the bubble and the rational players want to ride the bubble because they recognize the irrational players will drive up the asset prices and they can make money from this.

**Contracting**

Contracting can play a role in misperceiving and under pricing risk when it makes the product look cheaper by putting costs towards the end and introducing complexity so that customer thinks it is cheaper. This process accentuates the bubble’s optimism and leads to taking on more credit and risk. This will promote and expand the bubble. For example generalizing beyond the mortgage take a situation where the probability of a $100 asset going to $150 is 50% and going to $40 is 50% but the investor only has $20 and needs to borrow $80.

The rational investor would not borrow but the optimistic investor might borrow and invest depending on the contract design [back ends cost]. This then can exacerbate or fuel the demand for the asset by reducing the perceived cost. Securitization helped banks involved in the process to avoid some of the losses. This however it has become an agency issue for which the banks are now paying a high price in terms of foreclosures, public perceptions, litigation headaches, administrative time and actual losses. Labeling by the rating agencies has also played a role.

In turn earning may also create differences between players and customers in understanding complexity and being able to make rational as opposed to irrational decisions. In mortgage market customers had very limited experience and could be deceived by lenders or brokers with a lot of experience. This can also be seen in Credit Default Swaps, another financial contracting innovation contributing to the meltdown.

A CDS index was shown where one sees the bubble. This is negative asset data in that it goes up when other things are going down. The question whether this reflects credit spreads was raised. But it may in fact be a negative bubble. One sees the index spike up after the collapse of the housing market and a drop in bank stock prices. It appears to overshoot which is the nature of bubbles but such bubbles do not always come back to the original level.

If the germ of an idea raises expectations prices will rise. Yet it should not rise too much and if it does it indicates a bubble. Looking at some industries one does not see this but it does exist for the banks reflecting continued uncertainties about their exposure to real estate related loans and mortgage packaging suits. It also indicates how quickly prices can change as a factor in looking at the impact of a bubble. Thus the size and the rapidity of changing real prices are part of the bubble topology.

**Management Behavior**

It is believed that bubbles can impact managerial behavior in various ways as seen in how managers are compensated for taking risk. Earnings manipulation can play a role here if banks take bad news on the downside and promote earnings on the upside.

Thus one presenter looked at managers’ behavior through the bubble. Interestingly high tech firms appear more cautious in their reporting because high growth and high P/E magnify reporting behavior related to earnings. Yet there does appear to be a pattern over the cycle from which one may be able to work backwards from observing certain types of behavior and identify where one is in a bubble.

In this study the presenter looked at how management in their financial reporting treated volatility of earnings and discretionary items. Low volatility implies smoothing and earnings management. Cash flows were examined to see if it affects reported earnings.

Actually after the bubble period high tech firms appeared willing to report large losses given the crash. They want to see small earnings increases during the growth period but during the crash period there seems to be little manipulation and they appear willing to report losses. Indeed they may use discretionary items to even push losses down more so that after crash they have more flexibility to manage the earnings back up and create a larger recovery in the stock price.

Further there is different behavior between low and high tech firms and some of this may be related to high tech’s large R&D expenditures. Yet question remains whether one can use this data to know if one is in a bubble and if so in what stage.

Several questions were raised concerning the study. Would more data such as quarterly data be helpful? Is there difference between young and old high tech firms or their size?

The reason for examining this activity is because bubbles are partly a behavioral phenomenon and thus one wants to know how managers are behaving during the bubble in terms of gaming the system. Further the issue of relative performance as a measure may be part of the story if all stocks of a certain type of a high tech [innovative] firm rise together but the outperformers rise more among all semiconductor or all railroads, though in today’s world for high tech firms the most important and relevant performance measure may be against its own stock price due to importance of options to managers.

The ethics related to this behavior versus difficulty of detecting it was raised and seems relevant to the previous presentations on herding and organizational commitment to a specific course of firm action. Restatement of earnings may be part of this process.

The ethical issues around earnings management is due to the fact that Bubbles that spill over to hurt non-players are generally bad.

Structured investment vehicles or SIVs for example represented this type of bubble too. They developed from a financial innovation used to solve a specific business problem. They were designed by certain banks to get around Basle regulations by inflating bank capital.

Citibank particularly was hit by the higher Basle Tier 1 capital requirements compared to other US banks and the way they found around the rules were SIVs. Here they contributed asset backed loans to these vehicles and then negotiated with the rating agencies to get AAA ratings for SIV debt that was mostly in the form of 30-day Commercial Paper. Regulators were complicit in this accounting sleight of hand and other banks started to copy Citi also issuing asset backed commercial paper. Using CP exploited a Basle loop-hole because asset backed paper less than one year maturity required zero capital.

LTCM [Long-term Capital Management] changed the game however. This was due to run on the fund that had also been issuing large amounts of asset backed CP as a funding source. Now SIVs needed more capital and created capital notes that would be rated BBB. However because this now allowed SIV capital to be notes rather than equity held by the bank it shifted the skin in the game to the holders of the capital notes, while Banks and hedge funds made their money on managing the SIVs.

Rating Agencies were complicit in this process since wanted to keep the banks, funds and SIVs as customers. The scheme finally unraveled with Bear Stearns’ two Cayman Island funds because their failure showed that the assets were not investment quality.

Critics argue given the new structures the SIV market would have collapsed regardless since SIV managers were buying cheapest and lowest quality AAA assets they could find and ultimately the SIVs would fold given the leverage used.

The lesson is that when the doorkeepers under pressure from the participants liberalize the rules whether Rating Agencies or Bank examiners they create a rush through the door that can create a bubble in those assets [innovation and government are thus keys to this along with creation complexity]. Often asset transformation is part of this process. Thus when one sees this happening it is another signal to be cautious and look for the coming crash.

**Micro-Bubbles**

Real Estate

As a subcomponent of the real estate bubble was there also a sub-bubble in golf retirement communities that hoped to benefit from and leverage the retirement of aging baby boomers and their accumulated wealth and income?

US residential construction is very large, about $500 billion a year. A critical element of this activity is land acquisition that generally involves debt [leverage]. Therefore over optimism concerning retiring boomers and where they might settle could and did lead to excess purchases and greatly expanded debt. The US market peaked in 2005 and the subsequent collapse was accelerated by the credit crisis and the use of ARM [Adjustable Rate Mortgages} where lenders did not bear the risk due to securitization and bundling.

Importantly foreclosures were focused on new developments in the Sun Belt, many of which were retirement communities that included golf. Fort Meyers lead the country in this regard. Further membership agreements as contracts were an intersection of law and economics just as noted above. Here though it was the developers more than the residential buyers that were overly optimistic. They over promised to the buyers and over borrowed to developed high-end properties. One developer for example offered buyers money back guarantees on their deposits if they changed their minds because they were over-confident this would not happen or would only be a few buyers whom could be easily replaced. That is the over-optimism was reflected in a membership payback scheme that the developer never expected it to happen in volume.

Also this and some other developers of high-end golf retirement communities continued to expand nationally even after it was clear the market had peaked. Several went bankrupt. Many were also affected by the fact that the housing crisis and stock market crash has forced many boomers to postpone retirement while in any case reducing the money available to spend on a retirement home. One result has been that several golf and country club complexes have been sold to the members.

In addition it is not clear the market will eventually clear as the economy recovers. This is because the second wave baby boomers may be different than the first wave because those that got jobs in the 1960s generally have defined benefit retirement plans whereas those that got jobs in the 1970s have 401(k) plans. This greatly affects how much they can risk and pay as well as the effect of the markets on their retirement plans.

This tale reinforces several bubble signals. First real estate development is really leveraged land speculation and in some cases land prices are negative. Thus real estate bubbles are almost always bad. Secondly one must always closely examine one’s assumptions regarding why an asset should go up in price and then weigh the risk and consequences of being wrong or not hedging the related risk.

Financial Innovation

The next micro industry bubble was a look back at the nifty-fifties and Magic Five where an asset manager created a financial innovation [again] by persuading banks to invest half their managed assets in growth stocks and hold the rest in bonds.

This innovative investment strategy created concentrated demand for those growth stocks and drove their prices up while keeping value stock prices relatively low. However when high inflation came in 1970s value stocks that could raise prices became more attractive than the growth stocks and money moved out of then. They thus dramatically lost value that took years to recover. [Momentum and herding played role in this nifty-fifty run-up as well as in the subsequent crash.] This was another example of an innovation or idea that had logic at the time initiating the bubble but when the underlying assumptions changed the bubble collapsed.

Technology

Comparing the Railroad booms in the 19th Century with the Internet boom is that both were technology innovations that reached critical mass affecting the national economy and both were therefore pushed by government vision in order to tie the country together creating network externalities that meant the more people or towns that were connected the more valuable the network became. They also share the economics of high fixed and low marginal costs of adding someone to the network.

They also both had to develop complex organizational structures and information management systems involving matrix structures that covered both geography and specific functions. Feeder railroads could become quite profitable because they could charge what traffic would bear to get to trunk lines that might be subject to a greater degree of competition and marginal cost pricing. Something similar may have occurred for ISP providers and search engines that facilitated access and use of the network. Finally both provided opportunities for new firms and businesses to emerge using the network that could not have existed before the network was developed such as Sears catalogue sales through the RRs or Amazon and eBay using the Internet.

Financial innovations and capital raising were important aspects of the process. Morgan created first mortgage railroad bond that reduced funding costs which was important given the large amounts of capital needed and the high fixed costs. Stocks in railroads and the Internet were both subject to bubbles. However, these were disruptive technologies that changed world even after the investment bubble had passed.

Therefore it is difficult to understand what were the indirect costs of this process versus the long-term benefits? However Morgan’s approach of the mortgage bond did solve the problem of reducing the risks associated with using stock or unsecured bonds to finance the railroad expansion keeping access to foreign investors who had lost money on ordinary bonds or stock and were thus reluctant to finance additional expansions.

Commodities

Are Rare Earths a bubble related directly to the fastest growing parts of economy such as the Prius [hybrid cars], cell phones and defense technologies? It is estimated demand could double by 2020 due to their use in high tech magnets, batteries and glass. Recently after a gradual growth prices have risen dramatically [5-10 times] in the last 12 months. As noted above such price action is important in drawing attention to an asset and initiating a bubble?

However in evaluating whether it is a bubble one needs to understand role of China and its export controls as well as its closing or restricting illegal mines and smuggling. Further demand is very segmented by use and product. Thus there may be a bubble in certain rare earths and not in all. The ones in most demand for instance, heavy rare earths, involve very small quantities when they are used. Also substitution effects can be important. Therefore despite the very rapid rise in prices it might not be a bubble because there is constraint on supply and the price driver is not all on the demand side.

In addition rare earths are not actually that rare in terms or reserves and can be mined economically at these higher prices or from recycling. Rare comes from the problem of separating the rare earths from the ore. Here both Molycorp and some Australian mining companies have expertise. Rather short versus long-term supply issues are really related to price sustainability. That is will the Chinese stop restraining supply or dump product to force other producers out of the market. Here governments seem prepared to subsidize output and large users appear willing to enter long-term contracts to break the Chinese monopoly.

This situation shows the role of expectations in whether a bubble will develop. Here the price run up apparently can create supply that will bring prices down to substantially lower prices and as long as investors perceive that the mania required for a bubble will never develop. On the other hand supply constraints can lead to hoarding that will have an upward impact on prices creating a bubble. There will also be speculation in the stocks of firms that have the particular resources or expertise. This has happened to a degree in rare earths and certainly was a factor in the run up of certain stocks during the Japanese real estate bubble of the 1980s. However the bubble will collapse or crash once investors and speculators believe that supply is no longer constrained. This is what happened in Netherland’s tulip mania in the 1600s.

**Manias, Panics, Crashes**

Professor Aliber reviewed for the participants his view of bubbles and recent history. He began by noting that real estate bubbles in particular require credit and therefore their origins are usually found in the demand for securities denominated in specific currencies such as Euros or $. In a bubble the rate of growth in credit is exceeds the interest rate by a substantial amount so that one is actually involved in Ponzi finance where the expansion or credit more than covers the interest the borrower must pay. This borrowing drives up real estate prices up until the growth of credit slows. When this happens the currency will weaken and prices will start to fall while repayment becomes a greater burden. When increased borrowing can no longer cover interest the end is near and a crash will ensue.

The Asian financial crisis for example was generated by an increasing demand for “Emerging Market” equities that was initiated by a rapid expansion of foreign direct investment [FDI] in these countries primarily from Japan and the US to source low cost exports. These funds drove up stock and land prices. The trigger for decline came when inflation made these countries no longer low cost exporters and the balance of trade became adverse and was not covered by capital inflows.

This put pressure on currency reserves and ultimately this was followed by devaluation. Borrowers in dollars saw their obligations in local currency soar and they defaulted. A panic and crash followed as foreign investors and speculators exited.

The end of the recent US real estate bubble and bust came from the fact foreigners had enough US $ assets. What happens is that asset prices must increase to generate wealth that will then increase consumption. Therefore a country will have a larger increase in its current account deficit that will offset increased demand for local assets. In effect the increased import consumption covers the increase in the export of securities to foreigners.

When the foreign demand for local assets [in this case US $ assets in the form of securitized real estate loans] collapses the real estate or other asset bubble will collapse. Offsetting this effect will be a decline in the currency that will stimulate exports and reduce imports bringing system back to a period of relative stability that existed before the bubble that resulted from the increase in the sale of $ securities to foreigners. Something similar happened after the Asian Financial Crisis and the collapse of those markets in 1990s when the decline in currencies led again to trade surpluses that had to be balanced by acquiring US $ assets. These took the form of investment in Internet stocks and Treasuries. The latter led to a decline in US interest rates as well.

One reason for the constant recurrence of Real Estate bubbles it that it is treated quite differently in terms of the way bankers around the world think. For this reason Aliber believes that world financial system is currently very unstable. This is compounded by the fact that investors and bankers want global prices. But floating exchange rates prevent this since real estate in particular is cannot like goods be physically traded geographically by moving it from one place to another. Therefore Aliber believes floating rates give more distortion than any trade barriers since owners of real estate in appreciating currencies can leverage this internationally appreciating asset to buy assets or goods in depreciating currency countries.

Such flows of capital can then lead to a spending boom in the country receiving the capital inflow that leads to distortion in local prices and incentives affecting the allocation of local savings as well as consumption patterns. Such flow of inward credit is what is not sustainable and this means the prices that it is driving up are also not sustainable. This is a classic bubble and bust scenario.

There is also the compounding effect of the mismatch of currency borrowings and earnings that has caused and continues to cause problems especially at the retail level where it looks cheap [contracting optimism as in the Asian Financial Crisis] but has a large FX risk built into the loan that the borrower ignores and cannot cover through its local currency earnings, particularly once the currency begins devaluing.

The fact that this process seems to recur regularly in different economies and regions raises the issue of whether there is a global flow of capital or international pool money that sloshes around the world stimulating these developments.

In the 1930s Colin Clark opined that based on his analysis of economic growth in different countries that capital grew much faster than other factors of production and that while growth in the capital stock was needed to support economic growth there were periods when it grew much faster than was required to support growth. Thus the cost of capital would decline driving down investor returns. In response certain investors searching for higher returns would take on more risk and frequently would misperceive the degree of risk involved. This would lead to periodic booms [purchase risky assets] and collapses [as the true risks became apparent] that would reduce asset values and effectively would burn up capital and reprice risk bringing the system back into balance.

Something similar to this seems to have had happened in these various crisis and thus again supports the idea that bubbles may be a natural outcome of the capitalistic system and functioning financial markets. The policy question remains however on how to best moderate their effects especially when they can adversely affect the global financial system while at the same time not frustrating investment in disruptive technologies.