**Notes Second Leir Conference On Bubbles And Government Policies**

**September 14 and 15, 2012 – Leir Retreat**

Arthur Hoffman began the Conference by speaking for a few minutes before lunch about the Leir Center’s focus on bubbles and the importance of this research for financial policies. He explained how Mr. Leir left Germany for Luxemburg in 1933 and then left Luxemburg in 1938 for the US where he founded and expanded an international metals business that he sold in 1968. He recognized the markets in the 1960s were experiencing a bubble and thus invested in Treasuries during the 1970s and avoided the collapse in the “nifty fifty”. He recognized this as bad time for investors given the collapse in US financial returns.

He would thus probably have recognized the current financial markets as being challenging since the assumptions concerning housing and stock prices and rates of returns have been undermined. This has created challenges for investors and those considering retirement.

Bill Rapp then began the 2d Leir Conference with a recap of the 2011 Conference and the new issues this conference would address related to bubbles and government policy.

**The Recap ran as follows:**

1. Most bubbles have been recognized and analyzed specifically after the fact such as the recent financial crisis. The 2011 Leir Bubble Conference sought to develop metrics and methods to recognize them including the different types and stages for Bubbles. In this regard Bubbles were seen as rapid rises in real prices for an asset above its economic value and so not sustainable.
2. Rapid price increases for an asset relative to the general price level attracts speculator interest that further drives up prices. Signals are herding, more market volatility and high optimism. The initial paper by Dr. Chou argued a period of less volatility if the expected price increase was external (or irrational) but a revised paper shows an increase in the volatility of price action if the expected price increase is endogenously based on the price increase from the previous periods.
3. Speculators will in this case drive out value investors. When some speculators start to leave the market the price deceleration can signal a maturing and measurable loss of momentum. Policy makers are reluctant to act early, however, as they see benefits from the perceived economic prosperity while the Public is optimistic and enjoys the false sense of prosperity. Yet the eventual pain can be extreme when the bubble collapses. So there is a public policy need to manage bubbles. The excess optimism can be measured.
4. Some important Bubble types are Financial Bubbles in Stocks, Emerging Markets, Bonds, Real Estate, Commodities and New Technologies.
5. It is important to differentiate bubbles because disruptive technologies can attract risk capital whereas real estate lending booms financed by bank loans are always bad due to the leverage and credit risk involved. The former can avoid a financial crisis such as the Internet whereas the latter generally cannot as seen in the Great Recession. Government Regulations can initiate, manage and avoid some Bubbles since they require an open market system. A change in government objectives regarding home ownership for example played a role in the recent crisis that could have been avoided with more early action by the Fed.
6. Panics and crashes are usually caused when people have borrowed money to buy inflated assets. Therefore policy debate centers on when funding new ventures poses a risk to the inancial system due to banks’ exposure and leverage that can wipe out their capital base. Strict laws such as margin limits may work better than regulators.
7. The policy objective is keep the financial system especially banks sound while providing the funds needed to support economic growth and new technologies. Given their leverage banks should not provide risk capital. Rather other intermediaries can and should facilitate this such as brokers, insurance companies, VCs, investment banks, and asset managers. One way to test for this is stress tests that look for any spillover effects on the banks.
8. Part of this analytical and regulatory effort should focus on the assumptions of participants and regulators. That is what may make sense on a micro basis may not when it is done in volume through massive herding effects. Combining growth stocks and risk free assets in a portfolio was a sound financial asset management idea based on history but when it was done in volume by many asset managers it resulted in the “nifty fifty” boom & bust. Subprime mortgage lending may have made sense given stable or rising home prices but when it was done in volume it led to the housing boom and bust with foreclosure as a viable exit strategy actually foreclosed because of the number of homes hitting particular markets at the same time with no buyers due to both a reduction in lenders and potential borrowers.
9. Increased prices that attract speculators may make lenders and regulators feel good and in turn will increase prices further attracting more participants through an interactive feedback. But once money becomes less available and some speculators leave the market, price volatility increases leading to more exits and some price decline or deceleration. This decline then at some point creates a panic and with a true price collapse there is a “crash”. Thus price action is the key to understanding a bubble’s evolution.
10. In the real world research indicates that News Stories play little role in creating a crash though they will certainly try to explain it after the fact. Rather prices in terms of market timing describe the bubble’s development where “Financial Innovations” should be suspect, increased leverage should be suspect, complexity should be suspect, concentrated underpriced risk should be suspect, and pro-cyclical regulation should be suspect.
11. These situations are suspect because they all reflect excessive optimism not only by borrowers but also by lenders and regulators. This three-sided optimism is a bubble cornerstone. But once this over-confidence wanes, the prior greed is overcome by fear, and panic emerges along with loss of confidence, a crash, financial distress, disillusionment and a financial crisis if there is excessive leverage and bank exposure. Ironically this is when the government usually comes in to deal with the aftermath by bailing out the system or prosecuting the inevitable scams and scandals that emerge as the financial tide goes out.
12. Therefore from a policy or regulatory viewpoint there should be a sharp focus on potential banking losses or on other highly leveraged institutions that could impact the national or global financial system. [As discussed elsewhere in these Notes, Dodd-Frank has some of these provisions.] This generally would not include situations where only investor capital is at risk such as the Internet or recent Social Media Bubbles where high margin requirements limit the institutional risk. Conversely one reason the subprime mortgage crisis has been so disastrous is because the asset price risk was borne almost entirely by the banks and this was then extended through low margin derivatives [such as CDS] to the wider global financial system including the foreign exchange markets.
13. Generally regulators must lean against the wind to counter excessive optimism. However due to possible regulatory co-option using strict rules such as margin requirements or exchanges may be more effective than relying on regulators’ discretion. Such black-line rules should seek to control optimistic contracting through simplicity and transparency requirements that limit leverage through installments or balloon payments. In addition regulators need to monitor Aggregation Effects that can lead to concentration of credit risk and counterparty credit issues [Dodd-Frank appears to address some of these issues such as forcing certain transactions through exchanges or limiting single counterparty exposure].
14. Finally Ponzi Finance where financial costs are covered by increasing financial exposure must be stopped at an early stage especially when it has adverse foreign exchange and balance of payments effects as explained by Professor Aliber.
15. A more systematic policy approach to managing Bubbles as opposed to the current ad hoc one appears needed because bubbles are based in human behavior and market conditions that incorporate economic risk taking. This risk taking is in turn an important aspect of the growth process. At the same time as Colin Clark has explained and verified statistically and historically capital grows faster than other factors of production and economic activity. Thus at various times there will be an excess supply of capital driving down rates of return. This will lead investors to take on more risk seeking a higher return. New technologies, regulatory changes, etc. can attract this capital leading to bubbles that when they collapse return capital availability and pricing to more normal levels.

**Dr. Ben Chou** then reviewed some recent mathematical and econometric methods on bubbles that aim to quantify these phenomena. These approaches are important since if an asset bubble can be identified in the early stage of its formation, it can benefit different parties including policy makers, central bankers, academics, and investors. This Quantitative Approach is more useful than the Intuitive Approach that “if you are in a bubble, you know it” because by the time you finally see it coming, the end is near and inevitable in the Intuitive Approach.

A Graphical Approach is also one way to view bubbles by showing when the price of an asset class rises faster than the fundamentals [Exhibit 1]. But this does not indicate how fast is too fast. Also from an economist perspective, if you cannot quantify it, you don’t understand it, or in management, if you cannot measure it, you cannot manage it. Thus argues for a Quantitative Approach using statistical or econometric tests to determine asset bubbles. Dr. Chou then reviewed some “Unit Root” tests used in the literature called the “DF” and “ADF” tests. These are both so-called “left-tailed” tests.

Based on the ADF (unit root) test, Mikhed and Zemčík (2009) show that house prices do not align with the fundamentals prior to 1996 and from 1997 to 2006. Historically there are 3 peaks followed by a rapid decline in the housing prices: 1979, 1989, and 2006. The most recent correction (a collapsed bubble) occurred around 2006. Ray and Ray (2009) show U.S. housing prices broadly *converged* between January, 1987 and January 2000, and then rapidly *diverged* with this trend continuing until the middle of 2006.After about June of 2006, housing prices started to correct, again resulting in a *convergence*.

A recently developed test by Phillips, Wu, and Yu (2011) looks directly for the evidence of mildly explosive behavior in asset prices. This PWY or SADF test is a right-tailed test that can verify the existence of asset bubbles and can also date-stamp them. For example, based on a 5% significance level as the critical value, the Internet bubble started in July 1995 and collapsed in July 2001. The recent real estate bubble began in February 2002 and collapsed in December 2007. Soon after the subprime crisis erupted, the bubble subsequently migrated selectively to both the bond and commodity markets.

The bubble in the crude oil market started in March 2008 and ended in July 2008. Then the bubble in bond market appeared on September 22, 2008, and collapsed in April 20, 2009. The empirical estimates of the origination and collapse in these financial variables show there is some migration or transmission mechanism. The SADF test can be generalized by Phillips, Shi, and Yu (2012) to the GSADF test to assess the occurrence of multiple bubbles. Some episodes with durations greater than 6 months are the great crash episode of 1929 (M01-M09), the 1954 postwar boom (M12-1955M12), Black Monday October 1987 (1987M02-M09), dot.com bubble (1995M12-2001M06), and subprime mortgage crisis (2008M10-M09).

Some bubbles with durations less than 6 months include the explosive recovery from the1873 panic (1879M10-1880M02), the 1907 banking panic (1907M10-M11), and the 1974 “nifty fifty” stock market crash (1974M09). During the same period, the SADF test or PWY test only identifies two explosive periods: the 1873 recovery phase and the Internet bubble. Hence, the GSADF test appears to be more sensitive in identifying multiple bubbles and collapses than the SADF test.

However the different tests should probably be treated as complements rather than substitutes and can be done at different significance levels, depending on policy makers’ risk aversion towards possible developing bubbles. Yet they should understand these tests, and use them to monitor the financial system for potential bubble formation, and then plan strategies for managing and regulating different stages of bubbles by using these tests as tools to generate signals for oncoming bubbles.

This could help to improve market efficiency and volatility by reducing the size of potential bubbles through preemptive policy measures for asset bubble management that in turn would reduce the periods of sharp negative growth and the failure of financial institutions that follow bubbles. The very high economic cost of the recent financial crisis both domestically and internationally indicates putting a significant effort into this would worthwhile.

Exhibit 1



**Professor Ron Sverdlove** then discussed swaps and their regulation. There are 22 listed types of swaps that are agreements or contracts to exchange financial assets, the cash flows produced by those assets, or both. The asset may be a fixed amount of cash called the notional amount and can be absolute or contingent, the latter depending on the occurrence of some event. One party makes an up-front payment and the other party makes a payment if a certain event occurs. Examples are Interest rate options such as caps and floors and Credit Default Swaps [CDS]. There may or may not be a security associated with the swap, which determines whether the regulator is the SEC or the CFTC [Commodity Futures Trading Commission], the former having jurisdiction over securities. The largest swap markets are for interest-rates and currency. In the OTC [over the counter] markets financial institutions act as dealers.

The Commodity Exchange Act of 1936 provides for regulation of futures contracts and required exchange trading and the CFTC Act of 1974 established the CFTC [Commodity Futures Trading Commission] to regulate futures markets while expanding its regulatory scope to include non-agricultural products such as financial derivatives. But it is unclear whether swaps were covered under this Act and the Commodity Futures Modernization Act (2000) specifically exempted OTC [over the counter] financial derivatives from regulation by the CFTC or the states. That is as of 2000 there was no regulation of swaps or OTC derivative transactions. However this situation has been replaced by Dodd-Frank (2010) that requires some regulation. CFTC regulates swaps but the SEC regulates those that are related to securities. If a product has aspects of both then both agencies have jurisdiction. The Agencies were also given authority over any new derivative products with futures or security aspects.

Forward contract representing the deferred sale of non-financial commodities intended for actual physical settlement, though, are explicitly excluded.

The twenty-two types of swaps listed under Dodd-Frank §721 are:

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| (I) interest rate swap | (XII) debt index swap |
| (II) rate floor | (XIII) debt swap |
| (III) rate cap | (XIV) credit spread |
| (IV) rate collar | (XV) credit default swap |
| (V) cross-currency rate swap | (XVI) credit swap |
| (VI) basis swap | (XVII) weather swap |
| (VII) currency swap | (XVIII) energy swap |
| (VIII) foreign exchange swap | (XIX) metal swap |
| (IX) total return swap | (XX) agricultural swap |
| (X) equity index swap | (XXI) emissions swap |
| (XI) equity swap | (XXII) commodity swap |

Dodd-Frank rules further require that banks must move their swap and derivative activities into a separate subsidiary with its own capital that is not subject any bailout by the government. Ordinary insurance contracts are not subject to any swap rules. Credit Default Swaps are not considered insurance because the buyer does not need to own the asset at risk. Therefore there are no reserve requirements for CDS under state laws because they are not insurance which is an area subject to state regulation.

Further while state “bucket shop” laws have limited one’s ability to purchase bets on the direction of a security’s price movements, they have been over-ridden with respect to CDS by the Congress [2000]. That is while CDS would appear to violate bucket shop laws since they are bets on a security’s value, in this case a bond, with no requirement for buying or selling the security, the Commodity Futures Modernization Act in 2000 preempted all state laws regulating over-the-counter derivatives such as CDS.

European rules however do regulate “Naked Swaps” on sovereign debt. In October 2011, the European Union voted to prohibit the purchase of CDS on sovereign debts by anyone who does not own the underlying debts. There is a loophole that says that you can buy the CDS if you have a portfolio of assets sufficiently “correlated” with the sovereign debt on which the CDS is written. Naked short sales were also banned.

The International Swaps and Derivatives Association (ISDA) has for some time provided standard-form contracts for many kinds of swaps, including CDS. However, there are so many possible variations on these contracts that these forms are insufficient. Thus generally parties start from a standard form and then negotiate modifications. Dodd-Frank requires a joint study by the CFTC and SEC as to the feasibility of requiring the use of standardized algorithmic descriptions for different financial derivatives.

Study published April 7, 2011 is at http://www.sec.gov/news/studies/2011/ 719b-study.pdf. Two questions were considered: “Is computer technology capable of representing derivatives with sufficient precision and detail to facilitate collection, reporting, and analysis of risk exposures, including calculation of net exposures, as well as to function as part or all of a binding legal contract?” and “If the technological capability exists, in consideration of the logistics of possible implementation, should these standardized, computer-readable descriptions be required for all derivatives?” There was input into the study from market participants, industry groups, data vendors, academics, U. S. and international regulators.

It concluded “current technology is capable of representing derivatives using a common set of computer-readable descriptions. These descriptions are precise enough to use both for the calculation of net exposures and to serve as part or all of a binding legal contract.” However “before mandating the use of standardized descriptions for all derivatives, the following are needed: a universal entity identifier and product or instrument identifiers, a further analysis of the costs and benefits of having all aspects of legal documents related to derivatives represented electronically, and a uniform way to represent financial terms not covered by existing definitions.”

At present many market participants have internal systems that track contract terms. These systems may have started with industry standards but have subsequently been modified and the systems are proprietary and not compatible across institutions. Thus developing industry standards for reporting OTC derivatives trades include FpML (Financial product Markup Language) based on XML, but with institutions using their own extensions. Exchange trade data can be reported using FIXML (Financial Information exchange Markup Language).

There is a trade-off between transmission speed (FIXM) and detail provided (FpML). In any case D-F [Dodd-Frank] requires that all swap transactions, cleared or not, be reported to a Swap Data Repository (SDR) under a Rule published in Federal Register/Vol. 77, No. 5/Monday, January 9, 2012. The SDRs will then disseminate the data in real time to facilitate price discovery and to provide additional information to regulators.

The problem remains, though, that even standardized contracts require interpretation. This is especially significant in the area of restructuring events. For example before the recent Greek debt restructuring, investors were unsure whether or not it would qualify as a credit event under CDS contracts. In addition recent revelations about manipulation of LIBOR rates have led to questions about oversight and how much regulators knew about these practices or would have known under the new reporting arrangements. Swap rates are usually quoted as fixed rates that would be swapped for 3- or 6-month LIBOR floating rates. Reporting requirements from the very large market for interest rate swaps might have made this clearer to investors sooner.

Dodd-Frank further requires that the CFTC determine which categories of swaps must be submitted to a “derivatives clearing organization”. Such clearing organizations must register with the CFTC, the SEC, or an equivalent foreign agency. Clearing must be “non-discriminatory” and swaps with the same terms and conditions must be treated by the clearer as “economically equivalent”. This provision is most relevant to the failure of AIG since clearing organizations will impose margin (reserve) requirements.

Clearing as well as reporting could also have had an impact on the recent large losses at J. P. Morgan Chase. The bank took offsetting positions in CDS on investment grade and high yield debts, but the former was much larger than the latter. JP Morgan was thus able to take a mismatched position between emerging market debt and Treasuries similar to what crashed LTCM.

This situation points up the differences between the short-term and long-term consequences of certain types of arbitrage transactions. Further the aggregation of trade positions are subject to changed assumptions that when leveraged greatly increase the risk profile. This is why clearing organizations’ rules often impose position limits and have margin requirements to protect themselves. In the case of Chase it would have had to post collateral that might have caught regulators’ attention. These rules can protect the traders using exchange services as well.

That the trades must be cleared through an exchange is required but the provisions have loopholes if the firm or trader is doing the transactions as part of a non-financial business activity such as Pillsbury hedging its exposure to the wheat market or Starbucks to coffee. That is while clearing houses may impose position limits, there is loophole if one is taking or covering a commercial risk such as owning a commodity. Further everyone must get equal treatment in terms of limits and margin requirements. There are now ISDA Protocols regarding how this works.

That is the clearing requirement does not apply to a swap if one of the counterparties to the swap is a non-financial entity that is using the swap to hedge or mitigate commercial risk and notifies the Commission how it generally meets its financial obligations associated with non-cleared swaps. The definition covers swaps hedging or mitigating any of a person’s business risks, regardless of their status under accounting guidelines or the bona fide hedging rule. Small financial institutions (under $10 billion) are also exempt.

Currently CFTC has finalized most swaps rules and set a phase-in schedule from October 2012. Additional information must be exchanged between counterparties and documentation changes are required. The ISDA has established guidelines for swaps dealers and market participants to implement these changes. The ISDA-DF Protocol requires that records must be kept for all swaps for the life of the swap plus five years. CFTC market participant identifiers must be obtained by April 2013 and used in reporting. Clearing must start by 2013 and End-User Exceptions require an annual filing. Margin for non-cleared swaps must be kept segregated by the dealers and position limits require additional reporting.

Related to swap regulations are other changes since Credit Default swaps were used to hedge portfolios of mortgage loans including those backed by subprime mortgages, credit cards and auto loans. Thus one way to reduce the related derivative risks to the system is to make those types of loan better credits. Dodd-Frank works in this direction since it mandates a change in related regulations to reduce regulatory failure at the Federal level.

The idea is to avoid similar problems in the future since participants generally agreed Federal regulators did little regulating and policymakers may actually have pro-cyclically deregulated such as the repeal of Glass-Steagall. Similarly while the Fed had the authority under HOLA to regulate the entire mortgage market and set standards, Greenspan opposed this and did not act despite a strong push from Ned Gramlich, a Fed Director. [See Gramlich’s book on the Subprime Crisis].

There may also have been some regulatory cooption or arbitrage since the OTS [Office Thrift Supervision] depended on fees it received from the institutions it regulated. There thus was an incentive to attract lenders such as WaMu with weaker regulation. Dodd-Frank thus explicitly mandates the Office of Consumer Protection’s funding to come from the Federal Reserve’s expenditures freeing it from the politics of the Congressional budget process or the cooption problems of the OTC. Indeed it was noted all Financial Regulators currently have independent revenue sources. In the past international regulatory arbitrage has been a factor and led to Basle Agreements [Japan situation 1980s].

Dodd-Frank also works to reduce regulatory complexity by transferring most mortgage regulation into a new CFPB [The Consumer Financial Protection Bureau], though as Professor Ehrlich notes later we must still deal with the existing mortgage mess and its impact on the housing market and the economy. It also tries to reduce regulatory arbitrage by regulating the entire market, improving transparency and borrower understanding [something argued as well by Professor Gill] and lender verification of a borrower’s ability repay at the highest repayment rate in the loan document in the first five years without a refinancing option.

Still it is not easy to propose countercyclical regulation or regulation of very profitable areas such as derivatives and more particularly CDS. Thus banks are lobbying against some rules such as more capital requirements since they will limit bank profitability. To support their importance therefore requires data that is currently not centralized.

Though Dodd-Frank mandates gathering this information, it will take 4-5 years. It then needs to be put in a form regulators can use to make decisions such as a borrower’s CDS and overall derivative exposure.

There are few studies on early warning systems and the results of regulatory action versus no action that would support taking action when the problem is still small but has the potential to grow explosively into a dangerous bubble. Such risk management might be the subject of a future Leir Center study or conference. In addition Federal Agency Ruling-making takes a long time and if a new rule is required to manage a bubble it may be too early to justify one given the available data at that stage. Thus it is important for organizations like the Center to examine and publish such analysis that might help develop rules in advance of a bubble crisis.

Conversely some thought it might be easier to take action in the abstract when participants are not caught up in the mania of the bubble and to propose a specific mandate such as margin or exchange requirement [black line law] rather than through regulatory powers that can often be vague [see Notes from the 2011 Conference]. Developing relevant and accurate data is thus important along with the tests using that data as in the above Survey of such tests by Dr. Chou. While the data needs to be government gathered and available to the public if it is to be use for regulation or rule making, it was noted some important data already exists but was just not acted upon.

Professor Rapp noted the Fed had data from the Bank Supervision Reports beginning in 2003 that there was excessive subprime mortgage lending and this was increasing bank system risk. Indeed it was noted the subprime mortgage market was seen as a potential problem as early as the 1990s by some observers as was the suggestion of a possible Federally mandated mortgage loan format to deal with the issue and to simplify securitization. Still there needs to be more research including on the effectiveness of certain types of regulations and enforcement.

Yet it remains true that crises can be used to get Congress to give the resources needed for regulation, research and enforcement. It can also legislate stricter rules rather than more regulatory discretion that can then be lobbied or manipulated. This issue was noted in the first Leir Conference as well. This policy tension between acting to put safeguards in place before a crisis or only acting when the need becomes obvious is not going away.

Involvement of state as well as federal regulators in this process is another check and balance so that neither the Feds nor the States have the last word. Professor Sverdlove cited the early state bucket shop laws in this regard as potentially identifying CDS as system destabilizing, though in 2000 it was over-riden by Congress. Yet despite the changes in the regulatory market and reporting requirements, there remains the issue of whether CDSs and other derivatives concentrate risk or spread it among many investors. AIG and the OTC market indicate this is a problem especially if the CDS or derivative is mispriced in terms of risk. A recent study says regulating this effect can be done technically but the question it still open whether it should be.

Professor Sverdlove then posed a question he explained was the subject of further Research. He noted there was a possible contagion between CDS prices and the stock market in March 2009 as CDS prices increased with speculation of a collapse in the bond market. But when no collapse occurred the CDS bubble then popped. This is illustrated in the following Exhibit showing the average CDS premium for eight large financial institutions during a five-year period surrounding the crisis [Bank of America, Citigroup, J. P. Morgan Chase, Wells Fargo, Goldman Sachs, Morgan Stanley, American Express, and Capital One Financial].

The highest peaks are on days when one particular institution had a problem. The Morgan Stanley CDS premium rose rapidly from levels in the 200s after the Lehman failure on September 15, 2008, reaching a peak of 1360 on October 13. The next day it completed a new financing deal with Mitsubishi and the premium fell back to 415. The peak in early March 2009 corresponds to the bottom of the stock market.

The curve’s general shape suggests a bubble, that is, a long stable period followed by an increasingly sharp price rise and then a fall but at a higher stable level. However this would not represent a true bubble in the sense values were unreasonably high if the values were reasonable because of the riskiness of the banks at the time. More data would show whether purchasers of CDS were hedging bond exposures or creating short positions. Were institutions buying “protection” and then reselling it for a higher price as the market went up? Also who was buying at the peak, were there events around the peak that justified the subsequent drop and what was happening to non-financial CDS at the same time?







After Lehman was allowed to collapse, even though AIG and others were saved, did the market believe that these banks were truly too big to fail? The following chart indicates that large manufacturing firms CDS were subject to a similar price action and the risk premium on utility bonds remained relatively higher. Related questions revolve around whether low stock prices make bonds more risky or are they indicative of a bad economic situation that is the cause of bond risk? Does this reflect a “negative bubble” in stocks?

**Professor Somers** then presented his study on Ethical Behavior and Corporate Codes of Conduct in the Financial Services Industry where he found that self-regulation was not very effective, whistle-blowers are not usually promoted, and sexual harassment is a big issue.

He also noted there was a tension between calls for more government regulation after events such as the recent mortgage meltdown and the desire for firms to regulate themselves through a culture or integrity and formal codes of conduct. This naturally raises the question as to whether from a societal and the governmental standpoint such firm policies are effective in reporting and whistleblowing and in deterring unethical behavior since while impacting the companies and their employees they have legal and societal effects too.

He did this analysis by examining the institution’s own words as stated in their published codes of conduct that they use to manage their reputations, appease stakeholders and handle public pressure. He used special software that allowed him to analyze words and context rather than just the contextual elements. This allowed him to test for fudging, commonalities and convergence since institutional theory predicts that environmental pressures will lead to convergence among codes within industries. This resulted in three major research questions:

Are There Commonalities in Code Language and Content Consistent with Pressures for Legitimacy? Are There Commonalities with Respect to Clarity, Action Orientation, and Complexity? Can Code Content Be Mapped and Define Institutional Fields?

To answer these questions in a way that would be useful for practitioners required developing tools for understanding and evaluating Codes of Conduct so as to classify and clarify firm codes of conduct in terms of likely behavior. If tools can be developed to quickly codify and classify firm Codes of Conduct by their narrative conduct, is it then possible to use these Codes of Conduct to predict the likelihood of unethical behavior?

His sample is 112 Financial Intermediaries in North America, South America, Europe, Asia and the Middle East chosen from lists of leading financial institutions with their Codes Of Conduct taken from their websites where they seek to promote their legitimacy as ethical firms. These Codes were then categorized into 35 Dimensions and 9 Composite Dimensions based on their actual words, which were usually signed by the CEO or Board Chair.

The content was analyzed with Diction Software and the results were then clustered using self-organizing maps. The software analyzes text across 35 Dimensions and 9 Composite Dimensions but the word analysis does not assess meaning with AI tools. Rather it looks at the 9 Dimensions, which are Insistence, Embellishment, Variety [precision or fuzzy], Complexity, Certainty [resoluteness], Optimism, Activity, Realism and Commonality.

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| Insistence | Repetition of key terms indicating a preference for a limited, ordered world |
| Embellishment | Heavy modification slows down a verbal passage by deemphasizing human and material action  |
| Variety | Higher scores indicate an avoidance of overstatement and a preference for precise modular statements  |
| Complexity | Convoluted phrasing that make a text’s ideas abstractand its implications unclear  |
| Certainty | Language indicating resoluteness, inflexibility, and completeness and a tendency to speak *ex cathedra* |
| Optimism | Language endorsing some person, group, conceptor event or highlighting their positive entailments  |
| Activity | Language featuring movement, change, avoidance of inertia and the implementation of ideas |
| Realism | Language describing tangible immediate, recognizable matters that affect everyday life |
| Commonality | Language highlighting the agreed upon values of a groupand rejecting idiosyncratic modes of engagement |

The data was reduced using organizing maps so as not to get one cluster showing convergence but four. The results are non-linear reflecting differences though most banks do not embellish. The number of firms determines the size of the clusters.

There is no uniformity across fields and it is complex since each firm has its own culture and ways of doing things. Thus there is no uniformity regarding the success of self-regulation. However because there do not appear to be commonalties across firms, reflecting a complex institutional field, language differences suggest codes are not likely to be equally effective in inhibiting unethical behavior.

However one can capture changes and the direction of that change. That is Maps of Codes based on Language can be used to capture a firm’s position and changes in that position based on modifications in its codes. Further new firms can be added without new analyses. Also one can add a map on either a particular dimension or a composite.

The bank with the highest complexity, for example, is Chinese. The DOJ noted that it has sentencing rules regarding corporations that require examining their corporate rules and their application. Yet compliance issues are very important even in violation of a tough and clear code of conduct. The next question is whether one can get behind the Code and see if it has teeth in how the firm actually operates or can the system be gamed just like gaming the Rating Agency Models?

Some participants suggested correlating the ethic behavior results with financial performance. Does it pay to be unethical?

**Professor Xu** then presented some accounting issues related to financial regulation and why accounting did not catch Lehman or MF Global even though regulators depend on audited statements to expose corporate problems. Her explanation included why the new rules put in under Sarbanes-Oxley (SOX) do not work and how CFOs use various tricks to manage earnings through inventory methods such as LIFO liquidation, bad debt provisions, fixed assets & goodwill impairments charges, timing revenues & expenses, and misclassifications of capital and revenue expenditures, operating leases versus capital leases, cost goods sold, R&D, or sales classifications.

The research and public policy or regulatory question is how is the CFO manipulating [buybacks, Factor A/R] earnings in ways not transparent to the public and does this disguise reality. Did SOX thus fail in its objectives of actually achieving improved earnings reporting quality? Her analysis thus looks at 2002 SOX in terms of changes in accounting regulations and the regulation of corporate reporting as well as of analysts.

SOX had the following financial and reporting titles:

Title I—Public Company Accounting Oversight Board (PCAOB)

Title II—Auditor Independence

Title III—Corporate Responsibility

Sec. 302. Corporate Responsibility For Financial Reports.

Sec. 304. Forfeiture Of Certain Bonuses and Profits.

Title IV—Enhanced Financial Disclosures

Sec. 401(c). Study And Report on Special Purpose Entities.

Sec. 403. Transactions Involving Management And Principal Stockholders.

Sec. 404. Management Assessment Of Internal Controls.

Title V—Analyst Conflicts Of Interest

Title VI—Commission Resources And Authority

Title VII—Studies And Reports

Title VIII—Corporate And Criminal Fraud Accountability

Sec. 802. Criminal Penalties For Altering Documents.

Title IX—White-Collar Crime Penalty Enhancements

Title X—Corporate Tax Returns

Title XI—Corporate Fraud And Accountability

Sec. 1102. Tampering With A Record Or Otherwise Impeding An Official Proceeding.

Her study indicates CFOs can and will manipulate earnings via real activity reporting to meet financial targets. CFO and CEO can thus manipulate reported earnings to benefit insider trading. When one considers it also increased audit costs, created extra burdens and lead to fewer audit firms, the negative reaction is not surprising with its benefits being heavily questioned.

Indeed there seems to have been improved earnings quality and especially accrual-based earnings management increased steadily from 1987 till 2002. But this was followed by a significant decline after the passage of SOX with evidence of increased conservatism. Further evaluation weights of earnings and earnings components increased subsequent to the passage of SOX, particularly by unsophisticated investors.

In one survey of over 400 executives, 80% of CFOs said would use some real activity manipulations to meet earnings targets. In addition two analysts have seen an increased level of real activities manipulation after SOX where managements substitute accrual-based earnings management and real activities manipulation based on their relative costs. SOX 404 in particular has discouraged corporate risk taking and has reduced investments, increased cash holding, and reduced equity risk.

In a FEI members’ 2012 survey: 37% say SOX §404 Compliance not worth the cost with 7% believing the cost far exceeds any benefits. Also one analyst confirms SOX 404 compliances led to conservative reported earnings but also imposed significant costs especially for small firms. This is one reason why Dodd-Frank Act exempted companies with <$75m public float (42%); JOBS Act generally exempted new public companies from compliance for the first 5 years. One positive aspect does appear to be audit quality.

Passage of SOX coincided with a large reduction in the number of small audit firms with less than100 clients as 607 out of 1,233 then active firms exited the market during 2001-2008. Many tried to avoid peer review and failed to register with the PCAOB. The large structural change improved auditing quality and their successors did better jobs, though PCAOB inspections frequently found deficiencies in audit processes and models (47 enforcement actions). In the 2005 Refco Scandal involving related party transactions the Auditor disclosed 2 significant deficiencies in the IC over financial reporting that were ignored by investors.

**SOX 304** authorizes the SEC to recoup money from CEOs and CFOs when companies are involved in accounting improprieties, which probably was the reason for the decline in accounting restatements after initiation of the claw-back provision indicating increased earnings quality with lower audit risk and less IC weakness. However, Dodd-Frank Act (§ 954) now mandates inclusion of such provision for all firms with no misconduct required but designates the board of directors rather than the SEC as the enforcer.

Lehman though raised questions concerning the compliance improvements. It is largest company ever to fail with a 95% loss in share value. Then subsequently they discovered that Lehman with the cooperation of their auditor Ernst & Young had abused an accounting trick called Repo 105 where the firm doubled its long-term illiquid high-risk investments during the subprime mortgage crisis from $87 to $175 billion.

**Repo 105** is an aggressive interpretation of SFAS 140 that allows a firm to classify over-collateralized borrowing as sales, ¶ 218. They got an opinion letter from *Linklaters* to support such accounting and vetted its interpretation with E&Y, who is now being sued. That is, Lehman manipulated its debt by treating its Repos at the end of each quarter as a sale of securities rather than a borrowing against securities. By using the money from this short-term borrowing to pay down debt it seemed to reduce leverage though not in fact.



Similarly MF Global, another big bankruptcy, had 6.3 billion in EU sovereign debt and also used an aggressive SFAS 140 interpretation, persuading PWC that maturities of the underlying collateral & repos are closely matched thus there is no liability and reported the repos as sales rather than borrowings. This situation may indicate GAAP is too rule based and so subject to interpretation versus IFRS that is more principle based.

That is GAAP is too “rule-based” with bright-line tests and detailed guidance that can invite opportunistic interpretations. Some recent research indicates CFOs are less likely to report aggressively under less precise principle-based standards. But research also shows when working under rule-based standards, a strong audit committee may constrain such aggressive reporting whereas under principle-based standards, financial managers are less likely to report aggressively only if the auditor is also principles-oriented and puts an emphasis on the economic substance.

The overall conclusion was SOX cannot prevent all bad actors from defrauding investors, but it can and has deterred such activity. So while many things went wrong in the recent financial crisis, the investing public would have been worse off without the improved independent audit oversight. SOX thus affirms whether there is a lock on the door but not whether the door is locked. Yet Lehman and MF Global indicate there is no substitute for an ethical top management to prevent fraud and the misleading of investors.

**Professor Tom Synnott** then assessed the current US energy situation and whether it was a policy-related bubble in a presentation titled “A Second Chance For U.S. Energy Security”. He explained shale oil development and improved drilling of old oil fields are increasing gas supplies that are increasing the use of natural gas. Oil has been going up 3% in real prices. The question is whether there is a bubble in oil or vice versa. The consequences of this gas price trend is the production of more petro-chemicals, greater coal exports, and less oil imports. Thus there may be a short-term bubble in oil given the long-term increase in coal and natural gas production. The Fischer-Tropsch process for producing diesel fuel from gas could have an impact too and might thus this might be a good bubble to the extent it attracts significant over investment.

The text of his paper follows.

“In the years since 1985, U.S. crude oil production has fallen over 40% and imports have almost tripled. In dollar terms, the increase over the last ten years has been even more striking, from $ 104 billion in 2001 to $ 440 billion in 2011. This increase would have been even greater if not for the recession-induced decline in the volume of imports since 2007.

This dependence on imported oil - especially from Venezuela and the Middle East - has not only reduced our energy security but, by inflating the deficit in our Balance of Payments, has weakened the international financial position of the United States. This shows clearly in the downward trend of the dollar since 2001. If, as President Reagan observed, “Strong countries have strong currencies,” dollar weakness has diminished our geopolitical clout. Fortunately, there has been, in the last few years, a remarkable surge in the domestic production of natural gas, crude oil and natural gas liquids such as propane.

New technologies in drilling for oil and gas now make it possible to extract deposits that were too difficult before. High oil prices--$100 per barrel—make it economically feasible to do so. One of the new technologies—hydraulic-fracturing—is controversial and will need to be improved and regulated so as not to damage our aquifers and water supplies. The other new technology—horizontal drilling—is also important. It involves a deep vertical drill shaft, which, at an appropriate depth, then allows multiple horizontal drillings to be made.

Data from the Energy Information Administration2 (EIA) *Monthly Energy Review* (MER) show that annual U.S. production of oil and natural gas liquids increased in 2009 for the first time in 23 years and increased again in 2010 and in 2011. The Wall Street Journal reported a few weeks ago that oil production in North Dakota is now over 500,000 barrels per day. Although this is a small part of U.S. consumption of 20 million barrels per day, North Dakota‟s output represents a meaningful increase in current U.S. production of about 8 million barrels per day.

Moreover, an important effect of the new technologies is a considerable increase in the supply of natural gas. It is this that gives us a second chance for energy security.

EIA data show that the annual production of dry natural gas, after remaining in a relatively narrow range for years, began to increase in 2006 and has increased every year since. Production of 23 trillion cubic feet (TCF) in 2011 was the highest since the data series began in 1973. Most of this increase has come in the form of gas from shale, which has increased 18-fold since 2000 and now comprises over 30% of total U. S. production of dry gas. These new trends in gas supply are expected to continue in the future, especially given planned capital expenditures on developing shale gas.

EIA, in its *Annual Energy Outlook*, publishes “Reference Case” projections to 2035 assuming that current laws and regulations remain generally unchanged throughout the projection period. The 2012 Early Release Reference Case projections show gas production rising moderately throughout the forecast period. Shale gas is expected to provide all that growth, and would also replace declines in production from other sources, so that shale gas will be 49% of total gas production in 2035. In the EIA projections, The United States would become a net exporter of LNG starting in 2016 and an overall net exporter of natural gas in 2021.

The EIA‟s assumptions are necessarily somewhat conservative. Industry forecasts are more optimistic. Still it is clear that right now there is an abundant supply of natural gas. As a result, prices have declined sharply from $ 4.06 per million BTUs (roughly equivalent to 1000 cubic feet of gas) to $ 2.59 currently. This has brought about a huge change in the relative price of gas with respect to Diesel.

Cheap natural gas is having and will continue to have powerful effects on the U.S. economy both in the near term and over the next 5 to 10 years. Some ideas that come immediately to mind are listed below; others will develop as time goes on.

1. At current gas and coal prices, natural gas is displacing coal as a boiler fuel for generating electricity, In addition to the cost factors, natural gas produces about one-half the CO2 in generating a given amount of electricity. In the short-run there will be increased utilization of natural gas combined cycle (NGCC) power plants. In the medium-term, some existing coal-fired plants will be converted to burn natural gas and new gas plants will be built. Environmental regulations will encourage this trend.

2. Over the next few years there is likely to be a surge in investment in energy infrastructure (e.g. pipelines and mid-stream processing plants), in chemical plants to produce ethylene with low-cost natural gas, and in using natural gas as a transportation fuel. At present prices, the U.S. has a major competitive advantage in producing ethylene- a basic chemical building block. One intriguing longer-term possibility is to convert natural gas to ultra-clean diesel fuel.4 Another is to reconfigure plants built for importing Liquefied Natural Gas (LNG) to export LNG instead, to take advantage of the much higher prices in Europe and Asia.

3. Low-cost natural gas is already having an impact on electric power costs. In 2011, coal-fired generating plants accounted for about 45 % of total electricity generation while natural gas accounted for about 25%. In the first quarter of 2012 there was further switching from coal to gas. (The other 30% of generation is from nuclear plants, hydropower, wind and solar photovoltaics.) The savings will come in three ways:

1. The first is by reducing the cost of power from existing base-load natural gas plants. In 2010 the price of gas was about $4.50 per million BTU‟s. Now it is about $2.50. That $2 difference works out to about $ 15 per Megawatt-hour, or possibly more if less-efficient capacity is displaced.. On the roughly 1 billion Megawatt-hours of generation from natural gas plants, that would be more than $ 15 billion annually.
2. Another source of savings will come from the conversion of higher-cost, older coal-fired plants (which don‟t meet current EPA standards) to natural gas. If these plants account for 10% of the existing coal-fired capacity, the savings here could account for another $3 billion.

(3) Finally, Tudor, Pickering, Holt and Co. estimates that at current prices, gas-generated power is about $ 10 per megawatt-hour cheaper than coal. So there is bound to be further switching as time goes by, and if gas prices stay low. (Coal vs. Gas Power Update, May 18, 2012)

Putting it all together, it seems that there will be $ 17-20 billion in savings on electric power costs as natural gas works its way throughout the system.

4. These lower costs would normally be passed through to consumers through fuel adjustment clauses. This would work against conservation, of course. It is possible, though not easy politically, that a portion of the savings could be used to upgrade the reliability and capacity of the electric-power grid and to provide incentives to retail customers to improve their energy efficiency. For instance, the utilities could make compact fluorescents or LED‟s available at discounted prices.

5. In 2011, oil imports in 2005 dollars amounted to $ 211 billion. In current dollars, oil imports were $ 440 billion. If these imports could be cut in half, that would raise GDP and National Income by over 1%. Exports of petrochemical products and LNG would be on top of this figure. Furthermore, there would be a substantial improvement in the U.S. Balance of Payments and a strengthening of the dollar.

6. A very important point is that these investment expenditures (e.g. pipelines) will be made in the U.S. with low import content. Thus there should be a significant multiplier (perhaps as high as the „old-fashioned 3X). Thus, there should be substantial job creation, particularly for skilled workers.

7. A stronger dollar could lead to a long-run reduction in the price of oil as happened after the strong-dollar period of 1985-86. This could cause serious problems for Iran, Russia and Venezuela all of which depend on high prices and might help the geopolitical position of the U.S and our allies.

It is clear that cheap and abundant natural gas represents a windfall for the United States in a multi-year boost to GDP and National Income, to a reduced Balance of Payments deficit and ultimately to a stronger dollar. Most of all it offers us an opportunity for true energy security and healthy job growth.

Will we choose the easier path of “enjoying cheap energy while it lasts”, or will we take the harder path of using a major part of this windfall to build and modernize our energy infrastructure for the future? Increased tax revenues will tempt politicians to increase spending. The better choice is to restrain spending and reduce deficits. State governments may well set an example for the Federal government in fiscal responsibility. In any case, the Federal Government will have to face up to hard policy choices.

Rarely has a society been given a second chance for true energy security and sustainable economic growth. If our leaders frame the issue in these terms, they could unleash the energy and creativity of the American people. Who knows what wonders we might create—together? Federal Government will have to face up to hard policy choices.”

**Professor Bob Aliber** reminded participants to distinguish government policies that address the availability of credit and the channels of credit. A major policy issue facing the global economy is the excess of foreign savings and where it goes, raising indirectly Colin Clark’s concern over the need to rebalance the factors of production when capital grows more quickly than others. This led logically into his identification of four waves of global economic instability that have occurred since the 1970s and the liberalization of exchange rates and financial flows. This analysis can be found in detail in Chapter 9 of Manias, Panics and Crashes, 6th Edition. Professor Aliber also wrote on these ideas this August with respect to “The Source Of Monetary Instability” and is given below, including its perceptive analysis of the Iceland Bubble and its aftermath.

“The popular view among the public, the press and the politicians is that the U.S. financial crisis of 2008 was caused by some combination of the greed and incompetence and stupidity of the bankers and their self-serving compensation arrangements, and the shortcoming of regulation including the undoing of Glass-Steagall and the shortsightedness of the regulators. Add the 2002 low interest rate policy of Chairman Greenspan that contributed to the surge in property prices. These stories differ only in the identity of villains.

The competing view is that the crisis was systemic and inherent in the way the international financial system operates. Countrywide Financial and Lehman Brothers, and Fannie Mae, Freddie Mac, and the Fed were actors responding to the incentives created by imbalances, and the way the prices of securities adjust to the changes in imbalances.

The shortcoming of the US-centric view is that it ignores that Britain, Iceland, and Ireland had crises at the same time. Spain, Greece, and Portugal had crises soon after.

Moreover the US-centric view ignores that there have been three previous waves of crisis since the early 1980s--the first in 1982 was a combination of a currency crisis and a banking crisis that involved Mexico, Brazil, and ten other developing countries; several of the large U.S money center banks would have failed if the U.S authorities had not connived in the fiction that their loans to the borrowers in these countries were performing. Continental Illinois collapsed in 1984, and all the large banks in Texas and several thousand U.S thrift institutions went under. The large banks in Japan and in three of the Nordic countries--Finland, Norway, and Sweden--were overwhelmed with bad loans in the early 1990s and required government support. Mexico had a massive banking and currency crisis at the end of 1994. The Asian crisis that began in mid-1997 led to the failures of banks in seven or eight countries; Russia defaulted and devalued in August 1998 and Long Term Capital, then the largest U.S. hedge fund, was saved only because the U.S. authorities coerced its creditors to become equity investors. Argentina devalued and defaulted in January 2001.

The frequency of these crises and their increasing intensity suggests that there is a systemic problem.

Each of these waves of crisis followed three, four, or more years when the indebtedness of a group of borrowers was increasing by twenty to thirty percent a year, two or three times higher than the interest rate. The trigger for each wave of crisis was that lenders reduced the pace at which they would grow their loans to these borrowers; some of the borrowers became distress sellers of real estate in an effort to obtain the cash to make their scheduled interest payments.

The causes of these four waves of crisis were the economic forces that led the lenders to increase their loans to these borrowers at rates of twenty to thirty percent, which were much too high to be sustained.

The key idea of the book is that the rapid increase in the supply of credit to a group of borrowers in a country was an integral part of the adjustment process in response to an increase in the flow of money to this country when its currency was floating; the invisible hands were at work to ensure that the country's current account deficit increased to correspond to the autonomous increase in its capital account surplus. The increase in the prices of securities in the country and its economic boom were intermediate steps induced by the increase in the money flow to the country.

Eight stylized facts about developments in the global markets in the last forty years are noted in the first section of the first chapter. The causal factor that "explains" the other stylized facts is noted in the second section. The motive for the book comprises the third section. The key ideas of the each of the chapters are reviewed in the fourth section.

 Consider the stylized facts.

 1. There have been four waves of financial crisis in the last thirty years: the first involved Mexico and ten other developing countries in the early 1980s, the second centered on Japan and three of the Nordic countries in the early 1990s. The Asian crisis of 1997—which eventually included Russia, Brazil, and Argentina--was the third. The fourth led to massive bank failures in the United States, Britain, Iceland, Ireland, Spain, Greece and Portugal in 2008.

 2. Each of these waves of crisis was preceded by increases in the indebtedness of a group of borrowers—usually buyers of real estate and occasionally governments--- by twenty to thirty percent for three, four, or more years. Each of these waves resulted from cross border money flows, although the nature or composition of the flows that contributed to the rapid increase in indebtedness in Japan in the 1980s and in the United States after 2002 differed from those that were involved with Mexico and other developing countries in the 1970s and with Thailand in the early 1990s. The first wave involved the surge in loans from the major international banks headquartered in six of the industrial countries to the governments and to government-owned firms in Mexico, Brazil, and other developing countries in the 1970s. One facet of the second wave was that the indebtedness of real estate borrowers in Japan surged in the second half of the 1980s; another was that the external indebtedness of Finland, Norway, and Sweden increased sharply at about the same time.

 3. The increase in the external indebtedness of these countries was associated with an increase in the price of their currencies, which was much larger than those that would have been forecast from the differences in national inflation rates. The deviations from long term equilibrium prices of these currencies--the scope of overshooting and then undershooting--have been much greater than when currencies were pegged. Some currencies then have fallen off steep cliffs.

 4. The prices of securities in these countries--both stocks and real estate related securities and real estate-—have increased in response to the increase in the inflow of money. The surge in U.S. real estate prices between 2002 and 2007 which was fifty percent at the national level---and one hundred percent in the sixteen states that account for fifty percent of U.S. GDP and all of the action in the real estate market---was induced by a surge in foreign purchases of U.S. mortgage related securities.

 5. The GDPs in the countries that have experienced money inflows have increased as these inflows accelerated and have slowed as they declined.

 6. The rates of increase in the borrowers’ indebtedness often have been several times higher than the interest rate on this indebtedness.

 7. The trading revenues of the investment banks and of other firms that buy and sell currencies and securities have soared; the rates of increase have been much larger than the increase in the volume of international trade and investment. These firms take a lot of “money off the table”.

 8. The fiscal balances of the U.S. government and many foreign governments have been highly variable in response to the greater variability of GDP.

 The casual or independent factor is that a shock initiates a surge in the flow of money to a country; in terms of the concepts from the international finance textbooks, its capital account surplus increases. The price of its currency increases and the price of securities in the country increase, unless the money flow finances a larger government deficit. The increase in security prices is an integral part of the adjustment process and is necessary to ensure that the increase in the country’s current account deficit corresponds with the increase in its capital account surplus. Household wealth grows, which leads to greater consumption spending and investment spending; fiscal revenues climb. The mirror of the increase in consumption spending is that the household saving rate declines; in effect the inflow of foreign saving displaces domestic saving. The surge in consumption spending leads to an economic boom and euphoria.

When the money flow to a country slows, the price of its currency declines and the prices of securities in the country fall. The decline in the prices of its currency means a smaller trade deficit and the reduction in the supply of goods leads to an increase in their price. The prices of securities decline and some lenders tumble into bankruptcy.

Because the money flow continues for three, four, or more years, the traders—momentum traders—earn profits from being long the currency, even if the usual tests show the market is efficient or "not inefficient". Because the rate of growth of debt is so much higher than the interest rate, the ratios of debt-to-income and debt-to-GDP increase; it is inevitable that at some stage the lenders will become more cautious, and the reduction in the flow of credit will lead to a decline in the price of its currency and the price of securities will decline. The greater variability of fiscal balances reflects that government revenues surge in response to the consumption boom, and then decline sharply, while expenditures increase in the boom because “the money is there” and increase again in the downturn as governments re-capitalize failed banks.

The response to the shock in the form of an increase in a country's capital account surplus when a currency is floating differs from when it is pegged. The increase in the demand for the currency leads to an increase in its price, and the improvement in its terms of trade means that its real GDP automatically increases. (An analogy--an increase in the price of petroleum leads to a higher value for Kuwait's GDP.) The increase in the price of securities results in part because of the purchases by foreign residents (that is, the initial shock) and in part because of the increase in the domestic demand for securities as domestic GDP increases. The increase in the price of securities leads to an increase in household wealth that in turn leads to an increase in consumption spending that in turn contributes to the increase in the current account deficit.

Consider the dichotomy—is a floating currency arrangement necessary because the shocks have been so much larger than when currencies were pegged, or is the severity of the shocks inherent in the adjustment process when currencies are floating? Thus the dominant question is whether there have been more shocks, or that a particular shock has larger impacts on the national economies when currencies are floating?

The shocks that lead to these surges in the cross border flows of funds should be distinguished from the impacts of the flows on the prices of currencies and of securities. The story is that the initial increases in the prices of currencies and securities leads to a subsequent increase in the demand for securities, a feedback effect. These shocks take the form of long term cross border flows of money—the impacts of these flows when currencies are floating are very different from the impacts when currencies are pegged.

The last section of the introductory chapter previews the key ideas of each chapter.

1. A CONCISE HISTORY OF MONETARY EVENTS SINCE 1960

 The variability in the prices of securities, commodities, and currencies since the 1960 has been much greater than in earlier periods. Obviously the prices of currencies will be much greater than when currencies were pegged; however changes in the real prices of currencies as well as the nominal prices have been greater. The terms "overshooting" and "undershooting" describe the variability in the nominal prices of currencies relative to their long run equilibrium or average values.

 Large changes in the prices of securities, commodities, and currencies are responses to shocks that lead to the changes in the supply-demand relationships. The major shocks in each of the five decades since 1960 are summarized.

 Some of these shocks are structural; the increases--and decreases--in the price of petroleum are the classic structural shocks. Mexico's discovery of petroleum in the Gulf of Mexico in the 1970s was a structural shock, as was China's accession to the World Trade Organization in 2001. Some of the shocks involve changes in government policy including the monetary policies of Arthur Burns, Bill Miller, Paul Volcker, and Alan Greenspan. Changes in currency controls are a policy shock

1. THE TANGO OF CURRENCY CRISIS AND BANKING CRISIS

 One of the unique features of the last thirty years is the association between banking crisis and currency crisis. Every currency crisis was associated with a banking crisis, and just about every banking crisis was associated with a currency crisis. This association between the two types of crisis is unique to periods when currencies have been floating—there is no good counterpart when currencies were pegged, with the exception of Austria and Germany in 1931.

 This chapter focuses on causality, did the banking crisis led to the currency crisis or did the currency crisis led to the banking crisis, or were both types of crisis responses to the same cause?

 Japan is an outlier to the association between a banking crisis and a currency crisis; the price of the yen increased as asset prices declined. The United States and Britain also are outliers; the price of the U.S. dollar and the price of the British pound both declined during their banking crisis but neither experienced a currency crisis. Japan was an outlier because it was a large international creditor and had a current account surplus; the United States and Britain were outliers because none of their indebtedness was denominated in a foreign currency.

 The dominant explanation is that both types of crisis were responses to an increase in the cautiousness of the lenders about extending credit to the borrowers, which meant that the price of the borrowers' currencies declined and that the prices of securities in the country also declined. The decline in the prices of currencies meant that the borrowers had large revaluation losses on their liabilities denominated in a foreign currency.

IV. THE TRANSFER PROBLEM, AND CHANGES IN THE PRICES OF CURRENCIES AND SECURITIES

 The thesis of this chapter and the next is that these financial crisis are not fat-tailed events, but rather they are inevitable and predictable consequences of surges in indebtedness of different groups of borrowers, although their timing cannot be foretold. Similarly animal spirits are not the cause of the problem; instead the surge in the prices of securities at unsustainable rates is the inevitable result of adjustment process in response to shocks that have led to sharp increases in cross border flows of money. (It may be that animal spirits drive these flows--animal spirits may be a clever euphemism for irrationality.)

 Chapter four focuses on the model of the adjustment process in response to a shock that leads to an increase in the exports of securities from a country when its currency is floating; this process is compared to the adjustment in response to the same shock when the currency is pegged. The thrust of chapter five is the source of shocks, and the relationship between each wave of financial crisis and the surge in the supply of credit that is a prelude to the subsequent crisis.

 The model of adjustment in chapter four was inspired by Keynes analysis of the transfer problem. The thesis is that an autonomous increase in a country’s capital account surplus leads to an increase in the price of its currency and to an increase in the prices of securities in the country, which is an integral part of the adjustment process and ensures that there is an increase in the country’s current account deficit that corresponds to the increase in its capital account surplus. The scope of the increase in the prices of securities depends on whether increase in the capital account surplus results from increases in the sale of securities in a foreign financial center by borrowers resident in the country, or whether the increase in the capital account surplus results from the increase in the demand for the securities that are traded in a country by foreign investors.

 This chapter explains several different phenomena -- why the variability in the prices of securities and currencies so much greater when currencies are floating -- why are the changes in the ratios of the trade balances to GDPs so much larger when currencies are floating -- why domestic saving rates decline when the prices of currencies increase -- why the surges in the credit flows are associated with sharp increases in real estate prices.

 The adjustment process in response to a shock in the form of an increase in the flow of money to a country when its currency is floating is very different from when its currency is pegged; thus the increase in the price of its currency leads to an increase in its GDP as a result of the improvement in its terms of trade as its export prices increase relative to its import prices. The increase in its GDP leads to an increase in the demand for securities on the part of domestic residents, and the price of securities increases in part because of the increase in the demand by foreign investors and the induced increase in the demand for securities by domestic residents as their incomes increase. The increases in the prices of securities mean that household wealth is climbing which leads to a consumption spending boom.

 The money flows to a country always lead to an increase in the price of its currency, unless the price is pegged. The money flows to Iceland between 2002 and 2008 led to an increase in the price of the Icelandic kronor by nearly thirty percent. These money flows led to an increase in the supply of goods in the country as its current account deficit increased, the price of tradable goods declined while the prices of Icelandic securities increased. When the money flows to Iceland declined, the price of the krona declined, its trade deficit declined by more than xx percent of its GDP, the prices of tradable goods and domestic goods increased, and the prices of Icelandic securities declined by eighty percent.







1. SHOCKS AND THE LINKS AMONG WAVES OF FINANCIAL CRISIS.

 Consider two competing propositions about the four waves--1982, 1992, 1997, and 2008--of financial crisis. One is that the surges in indebtedness of different groups of borrowers that preceded each of these waves were independent events, more or less a coincidence. The competing proposition is that the financial crisis that followed one or several of these spurts of indebtedness provided the basis for the subsequent surge in the growth of the indebtedness of other borrowers. There are three "pairs" of successive waves, and the intermediate possibility is that there is a systematic relationship between one or two of these pairs, but not all three.

 Consider the economic intuition--the flip of a sharp decline in the prices of the Thai baht, the South Korean won et al. was an increase in the price of the U.S. dollar--two different ways of describing the same phenomena. The trade deficits of Thailand and South Korea declined, while the U.S. trade deficit increases--two different ways of describing the same phenomena. The shock was a decline in money flows to Thailand and South Korea, or the increase in money flows to the United States--two different ways of describing the same phenomena.

 The first section of this chapter begins with a taxonomy of the shocks can lead to an increase--or decrease--in cross border movements of money. One is an increase in the anticipated returns on the investments securities available in the capital-poor countries, another is the reduction in the risk associated with these investments, and a third is a reduction in barriers or controls that constrained cross border movements of money.

 Then attention turns to the shocks that have led to the rapid growth in the indebtedness of different borrowers; several of these shocks were on the demand side, and involved increases in the anticipated rates of return on securities available in a country sufficiently large to attract money from abroad. Several of the shocks were on the supply side, and have featured large increases in the amounts of money that could be used to buy foreign securities.

 The second section is focused on the possible links or connections between successive waves of financial crisis. Thus the trigger for the developing country debt crisis of the early 1980s was the surge in interest rates on U.S, dollar securities, which led to a sharp decline in the price of the yen as money flowed from Tokyo to New York. Subsequently this money was repatriated to Tokyo, which led to an increase in the price of the yen. There was an increase in the flow of money to Tokyo to buy yen securities, and the price of the yen increased sharply. The 1997 crisis led to a sharp decline in the prices of Asian currencies, the trade balances of these countries morphed from deficits to surpluses, whose counterpart was a significant increase in the U.S. trade deficit and in the U.S. capital account surplus.

 The third section focuses on the inevitability of each of these four waves of financial crisis because the rates of increase of indebtedness were two to three times higher than the interest rate on the indebtedness for at least several years. When the supply of new loans declined, some of the borrowers had to scramble to get the cash to pay the interest on their outstanding loans. If the borrowers have been governments, they had to raise taxes relative to expenditures or borrow from domestic sources as the money from foreign sources declined. If the borrowers had been real estate investors, a few sold properties to get the cash, and prices increased less rapidly or declined because of these distress sales.

 The fourth section deals with the rationality of the lenders. If the arithmetic of the cash flows leads to the obvious conclusion that a crisis was inevitable, why was this outcome not foreseen by the lenders or by the central banks or by the IMF? The analysis of the Iceland's finances was that the "date of no return" for a crisis was the autumn of 2005, three years before the krona tumbled; Iceland's current account deficit then was twenty percent of its GDP, and it was inevitable that the price of the krona would decline sharply once the money inflows slowed. Why is it that none of the lenders asked, "Where will the borrowers get the money to pay the interest if we stop providing the money to them in the form of new loans?"

1. SOUCRES OF CREDIT—DOMESTIC AND INTERNATIONAL

 The Dodd Frank legislation is in the long tradition that the previous financial crises could have been avoided if the recently enacted measures had been adopted ten years earlier. The Banking Crisis of 1907 led to the establishment of the Federal Reserve System. The Great Depression of the 1930s led to Glass-Steagall Act that provided that the commercial banks spin off their investment banking activities into new firms, for the establishment of the Securities and Exchange Commission as a consumer protection agency for investors and for the Federal Deposit Insurance Corporation to protect small depositors from loss and to reduce the likelihood of runs on the banks. Earlier regulations had provided for minimum capital requirements, portfolio diversification requirements, and limits on self-dealing.

 One of the popular themes is that the crisis reflects villainy on the part of the banksters or the regulators or the credit rating agencies. Thus "Lehman did it"--that the crisis resulted from the risky or stupid behavior of the investment banks, the commercial banks, and other lenders. Or the "regulators did it" because they were asleep. (The SEC's failure to understand what was happening at the Madoff firm after the tips from Harry Markopolos suggests that almost any criticism of regulatory incompetence is likely to be true.) Or the credit rating agencies were the villains, they had become the high price whores of the investment banks.

 The history of financial regulation is a story of modest micro success in dealing with the idiosyncratic problems of individual firms, and massive failure in dealing with systemic crisis. The credit crisis of 2008 did not occur because of the mischief in the hundred trillion dollar market for esoteric derivatives; the stupidity and incompetence of AIGs management both Martin Sullivan in New York, and Cassano in London, or from the chutzpah of Angelo Mozilo in driving Countrywide Financial to become the largest mortgage lender in the United States and of Miller's efforts to ensure that Bank of America would become the largest financial institution in the universe.

 The promoters of regulation fail to distinguish between idiosyncratic problems of individual institutions--failure due to faulty management decisions, theft by an insider, self-serving loans to the in laws of the bank officers and the like. There aren't enough band aids in the medical kits of the proponents of more regulation to forestall the credit binges and prevent large losses when the non-sustainable patterns of credit growth seek to morph into sustainable patterns.

 If "inflation is everywhere a monetary phenomenon" then surges in real estate prices are everywhere a credit phenomenon. This chapter focuses on the sources of the growth of credit; the key distinction is between the factors that lead to changes in the supply of credit from the channels for the distribution of credit. Lehman and the other investment banks had rapidly increased their leverage. Lehman was a channel for the distribution of credit; Lehman could buy more of the IOUs of sub-prime and other borrowers only if it could sell more of its own IOUs to households and business firms. Sustained increases in the price of real estate can occur only if there is a continued increase in the supply of credit. Lehman efforts to increase the sale of its IOUs can be likened to the efforts of Chrysler to increase its share of the market for automobiles. Chrysler's skills in design, engineering, and pricing may enable it to increase market share, but the impact of these skills on the total demand for automobiles is trivially small. Rather this demand is determined by the rate of growth of GDP, the interest rates charged the buyers of autos, the price of gas, and the vintage of the auto fleet. If Lehman had increased its leverage less rapidly, a smaller amount of credit would have flowed through Lehman, and households and business firms would have acquired more of the IOUs of other lenders.

 Between 2002 and 2006, the market value of U.S. real estate increased from $14.9 to $21.8 Trillion. The value of real estate mortgages increased from $6.0 to $13.0 Trillion. The increased in market value of U.S. real estate was possible only because of the dramatic increase in supply of credit available for the purchase of real estate.

 Banks--traditional commercial banks--can increase the supply of credit if they have excess capital and if banks as a group have excess reserves; in the former case, the liabilities of the bank are smaller than the maximum permitted by the regulations, and tin the latter case, the deposits of the bank are smaller than the total permitted given the level of bank reserves at the central bank.

 Banks as a group can increase the supply of credit if they have excess capital and the banking system has excess capacity. If banks as a group are "loaned up" and do not have the capacity to increase the supply of credit, non-banks may increase the supply of credit. The credit that provided the basis for the rapid increases in the price of Dutch Tulip Bulbs in the 1630s was supplied by the sellers of the bulbs; otherwise the buyers would not have been able to pay the prices demanded by the sellers.

 One of the themes of the book is that the rapid increases in security prices in most countries has resulted from inflows of money or investment or saving--these three terms are alternative ways of describing the same phenomenon. When a country's currency is pegged, an increase in the money flow to a country leads to an increase in the domestic monetary base; the reserves of the bank at the central bank increase, and the banks can increase the supply of credit. When a country's currency is floating, an increase in the money flow to the country leads to an increase in the price of its currency; the monetary base and the money supply do not change. (Hence the term “money inflow” is a bit of a misnomer, and is shorthand for an increase in long term investment. An inflow of foreign investment does not impact the money supply.)

The Japanese experience in the second half of the 1980s differs from that of most other countries in that most of the increase in the supply of credit that led to the rapid increase in real estate prices was from domestic lenders; the reduction in Japan's current account surplus was modest relative to the expansion of credit from real increases in real estate prices, if unlike Japan, the authorities are not intervening in the currency market.

1. CHANGES IN THE PRICES OF CURENCIES AND TRADING REVENUES

 One of the contentious issues in the debate in the 1950s and the 1960s about the advantages of a floating currency arrangement was whether speculation would be stabilizing or destabilizing. (This debate is reviewed in the next chapter.) If speculation is stabilizing, then the shocks occur in the goods market, and the transactions of the speculators dampen or truncated the changes in the prices of currencies that would otherwise occur. In contrast if speculation is destabilizing, then the shocks occur in the money markets, and the transactions in the goods market dampen or truncate the changes in the prices of currencies. Speculation may be stabilizing at some times and de-stabilizing at other times (and even when speculation is stabilizing, some of the speculators may be destabilizing, but the impact of their transactions on the prices of currencies is dominated by the impact of the transactions of the stabilizing speculators.)

 Participants in the currency market can be arrayed in two groups—the “outsiders” buy and sell currencies as a necessary intermediate transaction associated with the purchase and sale of goods, services, and securities; they consider that their currency transactions are one more business hurdle and most likely a cost. In contrast, the “insiders” buy and sell currencies to profit from changes in their prices; the insiders include the investment banks, some large commercial banks, and some specialized firms including hedge funds. If the currency market is viewed as a closed system, the revenues of the insiders are the mirror of the costs for the outsiders.

 One of the complications to the outsider-insider dichotomy is that some of the outsiders who buy and sell foreign securities include the anticipated changes in the prices of currencies as one component of their anticipated revenues. Indeed on a total return basis, the revenue gain from the anticipated increase in the price of the currency may be larger than from the differential in the returns between domestic and foreign securities.

 The trading revenues and the profits associated with these revenues have surged. In 1980, eighty to ninety percent of the revenues of Morgan Stanley were from traditional investment banking activities—underwriting stocks and bonds, corporate advisory activities, assisting with mergers and acquisitions—and ten to twenty percent was from trading. Now—or until the 2008 crisis—eighty to ninety percent of the revenues are from trading; which have soared; revenues from traditional activities have increased about as rapidly as GDP.

 The bid-ask spreads charged by the banks that are market-makers have declined in response to the changes in technology and a market that has no formal barriers to entry. Moreover the scope of market making has declined—fewer banks are market makers because of consolidation in the number of banks, and the surviving banks have reduced the number of centers in which they “make markets.” Hence the surge in revenues could not be explained by revenues from the bid-ask spread unless there has been a surge in the number of instruments that are traded.

 The outsiders have not complained that the insiders are involved in price gouging. Hence one of the key questions is the source of the revenues of the insiders. Another is the relationship between their trading revenues and the impact of their transactions on the range of movement in the prices of currencies--to what extent is the extreme overshooting and undershooting a result of the transactions of the insiders.

1. THE CASE FOR FLOATING CURRENCIES REVISITED

 International monetary arrangements have “constitutions”. The “rules of the game” of the gold standard described the process of adjustment in prices and GDPs that would lead to return to payments balance after a shock had led to non-sustainable imbalances. The Bretton Woods Treaty summarized the rights and obligations of the IMF member countries; the procedures for changes in parities were stipulated. The “constitution" for the floating currency arrangement of the last forty years is the set of arguments advanced by Milton Friedman, Gottfried Habeler, Fritz Machlup, Harry Johnson, and others in the 1950s and the 1960s; they described the process of the adjustment in the prices of currencies in response to various shocks.

 The proponents had both normative and positive arguments. One of their major normative arguments is that the relationship between domestic prices and prices in world markets should not be distorted at national borders by tariffs, quotas, currency controls, and episodes of overvaluation and undervaluation. A second normative argument was that each central bank should not be constrained from adopting a monetary policy appropriate for its domestic economic objectives by the need to maintain parity. Thus it should not be constrained from adopting a more expansive policy by the concern that its holdings of international reserve assets might be depleted, nor should it be obliged to buy foreign currencies to prevent the price of its currency from increasing.

 One of their positive arguments can be inferred from one of their favorite rhetorical questions; is it preferable that prices and incomes and employment in the various countries adjust so the established parties could be retained, or whether instead is it preferable that the prices of currencies adjust, which would reduce the changes in prices and employment needed to restore a sustainable payments balance. They suggested that changes in the prices of currencies would be gradual, and that the deviations between the market prices of currencies and the long run equilibrium prices would be smaller than when currencies were pegged. There would be less reliance on trade barriers to maintain an “overvalued” currency because the price of the currency would then decline. Central banks would be able to follow independent monetary policies, because uncertainty about the prices of currencies would deter the "carry trade"—the short term capital movements. International trade and investment would not be deterred by uncertainty because the foreign currency exposures could be hedged. (Their views about uncertainty were not consistent.)

 The data for the last thirty years challenge their positive assertions. The deviations of the market prices of currencies from the long run equilibrium prices have been much greater than when currencies were pegged; the Mexican peso progressively overshot in the first four years of the 1990s and then undershot early in 1995. Some currencies have fallen off cliffs. Changes in the prices of currencies have not been stable. Trade barriers have come back into vogue to cope with extended periods of overvaluation. Countries have had to adjust to imported shocks from changes in cross border money flows, which have impacted both their goods markets and their securities markets.

 The first section of this chapter reviews the positive and normative arguments advanced by the proponents. The second section summarizes the data on prices of currencies, essentially an elaboration of the previous paragraph. The third section infers the model of the currency market that appears implicit in the arguments of the proponents. Their model had two groups of participants, goods traders and money traders; the model did not allow for long term foreign investment. Moreover they believed that the shocks would occur primarily in the goods market; instead the shocks have occurred primarily in the securities and money markets. They believed that the prices of currencies would change in response to bad harvests, increases and decreases in the oil price, the discovery of natural gas, and a thousand other goods market shocks. The money market traders had an implicit strategy based on a mean reversion view of prices, and they would intervene to dampen the deviation of the market price of a currency from its long run equilibrium price. They did not consider that an economy could “import” a shock because the prices of its securities and the value of its trade balance would change in response to changes in cross border money flows.

 During the nineteenth century when currencies were pegged to gold, changes in cross border money flows led to higher levels of investment in the “new lands” that were on the receiving side and a lower level of investment in Britain and France, the capital exporting countries. There is a modest literature on whether foreign investment led to higher levels of GDP in the capital exporting countries. But there was never any doubt that investment spending would increase in the money-importing areas.

 When currencies have been floating, the money inflows have been associated with consumption booms; investment may increase but much of the increase in spending is associated with increased spending on real estate, and much of the increase was “wasteful.”

 The chapter explores the relation between the changes in the inflow of foreign saving and changes in the domestic saving. One plausible explanation for the modest increase in the domestic investment is that the increase in the price of the currency that is induced by the increase in money inflows leads to a decline in the profit rate in the tradable goods industries.

1. THE ECONOMIC CONSEQUENCES OF THE FOURTH WAVE OF FINANCIAL CRISIS

 Sharp declines in prices of securities are almost always associated with recessions. The story is that the declines in the money inflows lead to a decline in trade deficits and hence in the supply of goods available to the countries, which in turn leads to a decline in the prices of securities in response to the increase in the amount of money demanded. Moreover banks become much more cautious lenders, in part because of concern for the adequacy of their capital.

 Some smaller open economies have recovered relatively quickly, usually because the sharp decline in the price of their currency; South Korea and several of its neighbors recovered relatively quickly from the 1997 crisis. In contrast Japan has been in the economic doldrums for twenty years, and its government debt increased to two hundred percent. Japan is in the lead in terms of a number of countries in the choice between more austere policies to reduce its fiscal deficit or more expansive policies to reduce its unemployment.

 The end games for both approaches are unclear. More austere policies to reduce the fiscal deficit would lead to increases in the unemployment rate in the short run, but eventually would lead to a decline in unemployment if households were to reduce their saving and spend more because some wealth objective would have been achieved, presumably because goods prices had declined. More expansive policies would lead to an increase in employment in the short run, but the likelihood fiscal constraints later.

 The global expansion since the 2008 crisis has been very sluggish; some countries have had "double dip" recessions. The United States, Britain, France, and other countries have had high levels of unemployment, large fiscal deficits, and their ratios of government indebtedness to GDP have been exceptionally high. Moreover many of the countries that have had high levels of unemployment also have had large trade deficits, so the plausible story is that their trade deficits have contributed to their output gaps.

 What then is the explanation of their trade deficits? France and other members of the European Monetary Union; they have ceded control of monetary policy to the ECB and cannot manage the value of their currencies. Britain has lost control of the value of the pound to the vagaries of money inflows; London is a premiere destination for money from Russia, China, the Gulf, Greece, etc.

 The United States is in a unique position because of the reserve currency role of the U.S. dollar. China and some of the other Asian countries maintained a low value for their currencies as a way to stimulate their exports of tradable goods and to move to produce higher value added exports. Singapore has consistently had a current account surplus of more than ten percent of its GDP for more than twenty years. The U.S. role implicitly has been to provide global consistency; the result is that the tradable goods sector has shrunk by several percentage points.

 China and the other Asian countries with large surpluses have had a deflationary impact on the goods prices and an expansive impact on the prices of securities.

1. INTERNATIONIAL MONETARY REFORM AND DOMESTIC FINANCIAL MANAGEMENT

 The current international monetary arrangement is dysfunctional because of the way the shocks are transmitted to countries from cross border money flows. . Return to the question asked by the proponents of floating currencies—is it preferable that prices and incomes in the economies adjust so the parities can be retained, or instead is it preferable that the prices of currency adjust? The proponents believed that it was less costly for the currencies to adjust because the annual change would be modest and primarily reflect the differentials in inflation rates. But now they should recognize the very high costs imposed on domestic economies as prices and incomes adjust to the overshooting and the undershooting.

 There are two advantages of the current arrangement. From their narrow point of view, the authorities are “off the hook” in that they are not required to change the prices of currencies; instead market forces change these prices. From the point of view of global welfare, the arrangement permits a ready adjustment to the changes in long run equilibrium prices of currencies that result from differential changes in productivity, etc.

But the tradeoff is that there is a lot of unnecessary adjustment to the changes in the prices of currencies relative to the necessary adjustment to the changes in the values of the long run equilibrium rate.

 When currencies were pegged, capital flows quickened or advanced the date when the changes in the parities occurred; hence these flows were socially useful because they forced the hands of the authorities. In contrast when currencies have been floating, these flows have been socially costly, in that they have led to massive overshooting and undershooting. Institutional arrangement is necessary that will limit the cross-border flows.

 The domestic financial management issues involve three overlapping issues—one is the management of monetary policy, a second is financial regulation and the scope and level of capital requirements and the third is management of the lender of last resort activities of the central bank. (The fourth issue is micro and beyond the scope of this book centers on the size structure of banks; de-consolidation is needed so that no bank has no more than five percent of the national market. Where is Judge Greene when he is needed?)

 The key problem for the management of monetary policy is that the system is under-determined, Tinbergen’s rule is violated because the key instrument of policy impacts both the domestic economy and the external balance, there is need for another instrument. The thrust of this section is that the history of domestic financial regulation is one of failure, each crisis leads to new measures, which fails to prevent or even to delay the next crises, but nevertheless leads to higher costs of financial intermediation and thus encourage the development of an informal banking system. The practice has been to expand on the regulatory measures that initially were adopted to cope with the idiosyncratic failure of individual institutions to cope with the systemic implosions that result from macro monetary mis-management. Obviously the “solution” is to prevent or dampen the source of the systemic crisis—and then when they occur, for the central bank—together with the Treasury—to provide liquidity and to bail out failed and failing institutions.

X. SUMMARY AND CONCLUSION

 The focus of this book is the source of the four waves of financial crisis since the early 1980s. Each of the four waves of financial crisis--1982, early 1990s, 1997, and 2008--was preceded by a three, four, or more years when the indebtedness of a group of borrowers increased between twenty and thirty percent a year. Most of the increases in indebtedness involved increases in the supply of credit available for the purchase of real estate. The principal exception was that the growth of credit in the 1970s financed the deficits of the governments and government-owned firms in Mexico, Brazil, and ten other developing countries. Similarly a modest amount of the increase in the credit after 2002 financed the fiscal deficits in Britain, Greece, and Portugal.

 The source of these crises lies in the factors that have led to the rapid growth of credit. Most of the episodes of a rapid growth of credit involved cross-border finance. The rapid growth in the indebtedness of the governments in the developing countries in the 1970s was financed by the major international banks. The banks in the Nordic countries borrowed extensively in the offshore markets in the late 1980s because the net interest costs were less than their domestic borrowing costs. The external indebtedness of Mexico, Thailand, and other emerging market countries in the early 1990s surged; some of the flows to these countries involved investment in plant and equipment by multinational firms that were seeking to establish sources of supply in countries with relatively low labor costs, and some of these flows involved the purchase of shares in firms that were being privatized, and some involved borrowing in foreign centers by the banks headquartered in these countries seeking lower costs sources of funds.

 The rapid increase in bank loans for real estate in the second half of the 1980s occurred as a price of the yen was increasing at a rapid rate, after having decreased sharply in the first half of the decade, contributed to the increase in asset prices in two ways--the Bank of Japan intervened extensively in the currency market to dampen the increase in the price of the yen, which led to rapid increase in the monetary base and the money supply. The combination of the increase in the price of the yen and the increase in Tokyo stock prices attracted money from abroad; the Japanese current account surplus declined by xx percent of its GDP, which led to an increase in the supply of resources available to the country. The purchase of Tokyo stocks by foreign investors was motivated by the increases in the prices of these stocks and in the price of yen, and their purchases contributed to these increases.

 The rapid increase in the supply of credit available to the U.S real estate market after 2002 resulted from the surge in China's exports and its trade surplus with the United States; the Peoples Bank of China used some of the U.S. dollars earned from this surplus to buy the IOUs of Fannie Mae and Freddie Mac, the government sponsored mortgage lenders. Each increase of $100 billion in Chinese purchases of mortgage related securities would finance the purchase of 500,000 houses in a year.

 When money flows to a country increase, the price of its currency increases and the prices of securities in the country also increase as an integral part of the adjustment process. The process is symmetric; when the pace of money flows to a country decline, the price of its currency falls, and the prices of securities in the country also fall.

 The transition from a phase when the indebtedness was increasing at the rate of twenty to thirty percent a year to a much lower rate was inevitable, because debt could not increase much more rapidly than GDP for an extended period. When the growth of indebtedness slowed, and the prices of currencies and securities declined, the lenders almost always incurred massive losses. Continental Illinois Bank failed in 1984 as a result of its loans in the 1970s to borrowers in the developing countries, in Texas, Oklahoma, and Louisiana and other oil producing states, and in the grain-producing states. Most of the Japanese banks became wards of the government after the massive collapse of property prices. Similarly the banks in Nordic countries failed in the early 1990s as the prices of their currencies fell.

 One of the clichés in international finance is the story of the "virtuous and vicious cycle." The story is that money flows to countries that are successful in achieving a low inflation rates and from countries that are not successful--more or less a cross sectional story that explains differences among countries. The competing interpretation of the same cliché is that countries initially appear virtuous as the flows of money to them accelerate, and then the vicious aspect inevitably appears when the pace of the flows slows, and the prices of their currencies decline.

 The adjustment process to an increase in money flows to a country when its currency is floating differs sharply from when its currency is pegged. There is an immediate increase in the country's GDP; the prices of securities increase because of the purchases by foreign investors and the increase in the demand of domestic investors as their incomes increase. Households increase their spending as their incomes increase, the economies boom--as long as the credit supply is growing. The boom is an integral part of the adjustment process that ensures that there is an increase in the country's trade deficit that matches the increase in in its exports of securities.

 The process is too good to last and it doesn't, at some stage the lenders wise up to the fact that there are on a non-sustainable trajectory, and the reduction in the flow of credit causes the boom to morph into a bust.

 The puzzle is that the lenders appear not to have learned these credit booms almost always end in a costly disaster. The lenders fail to ask the obvious question, "Where will the borrowers get the money to pay the interest if they can no longer obtain the money from new loans?" This question was obvious from the arithmetic of cash flows between the borrowers and the lenders.

 The source of the instability is the interaction between the shocks that have led to the sharp increases in the demand for securities available in a country by foreign investors, and the impact of their purchases on the domestic economy; the increase in household spending and income that followed from the increase in the price of securities dominated the negative impact of the ensuing increase in the country's trade deficit on income and employment.

 The international monetary arrangement--the floating rate arrangement--is inherently unstable. The positive claims for a floating currency arrangement are challenged by the data on the scope of overshooting and undershooting, and the large sudden declines in the prices of currencies like the one that Mexico experienced in 1994-1995 and the one that Indonesia experienced in the summer of 1997. The model of the international money market that was implicit in the argument of the proponents was too simple, and could not accommodate long term cross border investments. These long term movements appear to pull along movements of short-term money. The cliché that "destabilizing speculation would be unprofitable" may or may not be true, but it is largely irrelevant. Moreover the proponents greatly underestimated the frequency and severity of monetary shocks both on the demand and the supply side. Reconsider their question "Is it better to allow the prices of currencies to adjust to the changes in prices and GDP, or to require that the economies to adjust to the parities"-- now because of the severity of shocks, the economies have to adjust to the extremes of overshooting and undershooting.

 Capital requirements and other regulations may be useful in reducing the losses that the deposit insurance agency may encounter because of causes that might broadly be called bad management. These requirements are irrelevant for coping with systemic crisis. The irony is that the economy bears the costs of these regulations during the twenty or forty years between systemic crisis, and then when one occurs, they are useless.

**Professor Alan Yan** presented results from his recent research on the 3 bubbles that have occurred recently in a part of China, Inner Mongolia, and particularly around the city of Ordos. Ordos is one of the twelve major subdivisions of Inner Mongolia and means “palaces” in the Mongolian language. It claims to be related to the eight white yurts of Genghis Khan. It has a Population of 1.59 million, occupies an area of 86,700 square km or 33,495 square miles. Proven coal reserves are 167.6 billion tons, or 1/6th of China’s total.

Proven natural gas reserves are 800 billion cubic meters, or 1/3d China’s total and its cashmere products production are 1/3d of China and ¼th of the world's. It also has abundant rare earths.

By way of background he explained there has been huge growth here between 2001 and 2011 with increases in GDP per capita of 16 times compared to a decline during that same period in US median household income. In 2001 GDP was 17.2 billion Yuan with GDP per capita in US$ of $1572. By 2011 these were Y321.85 billion and $25,239. This was primarily the result of a natural resource boom that also led to a big increase in government revenues.



Interestingly Ordos has been lauded as an eco-city that is a very attractive place in China to live. In November 2007, President Hu stated: “Ordos is a successful example of implementing the concept of “developing scientifically” in western China. “The Ordos Development Model” was promoted nationwide and ranked first in overall growth competitiveness in the China in 2009 and in 2010 was one of “China’s Top Ten Leisure Livable Eco-City” and “the 6th Safest City in China”.

But if one looks below surface there have been real problems and it has become a Modern Ghost Town. In 2003, Ordos city officials launched the creation of a new 1-million person city district 16 miles from Dongsheng District. By 2010, 1.1 trillion yuan ($161 billion) had been invested by the government. But it had only 28,000 residents.

So that taking the city inhabitants as a whole each has almost 3 apartments. Thus several projects have stopped due to a lack capital or renters’ empty apartments. 80% of construction has stopped due no funds and out of 500,000 workers before only 200,000 remain and these are leaving. Housing prices have fallen from Y20000/m at the peak to Y3000/m. There were buildings with total floor area of 22.25 million square meters under construction in the city as of November 2011 but not now.

According to official data by the end of April 2012, the number of planned new constructions were 49 but only 7 had started. Investments in real estate were Rmb1.04bn or a drop of 83.4% from a year earlier. This situation has affected government revenues since land sales are down 80%. Construction industry and real estate industry taxes have dropped by 14.8% and 29.6% respectively.

Even public officials are trying to return the subsidized apartments they bought at Y4000/m. Further while Local government debt is only stated at Y2.5 billion officially it is really Y300 billion because of the reduction in demand for various raw materials. Professor Yan estimates debt relative to GDP is 100% or roughly Y300 billion compared to government revenue 75 billion. [The EU’s warning system triggers at 60%.]

The reason official debt is lower than real debt is the use of Local Development Companies. This is a kind of underground lending and in Ordos could be as much as Y200 billion. Also, interest can run as much as 3% per month, though law limits it to four times the official rate.

Local governments can raise capital through urban development companies associated with them. Between 2008 and 2011, the Dongsheng City Development Group’s equity doubled; but its liabilities grew to ￥14 billion from ￥634 million or 21 times!

Further they have budgeted to build 600 km of new highways, 14 industrial parks and 18 power transformer substations plus ￥150bn worth of private and government investment this year, up from ￥107bn last year and ￥80bn in 2010. Another￥2.5bn will be spent on a new sports arena for the National Ethnic Minority Traditional Sports Games in 2015. However this growth in local government debt is also a national problem as banks push out the maturity of debt local government outstanding.

But because banks generally only lend to state enterprises and large firms, smaller firms rely extensively on the private or underground market. For example in Ordos, most residents are involved in underground lending with a size of Rmb200bn. In Wenzhou, Zhejiang Province, 89 percent of families and 60 percent of businesses are engaged in similar activities with a size of Rmb180bn. Sihong Town, Jiangsu Province, 98% of the residents are involved in private lending. He then showed some examples of private lending notes.

However, private lending rates by law are not supposed to exceed 4 times the official lending rates by financial institutions set by the People’s Bank of China. If the rate exceeds it, the practice is defined as loan shark lending and will not be protected by law.

This is why debt instruments [promissory notes] do not mention interest but just that one must repay a certain amount of principle each month, usually 10%. This is thus a silent lending system. The decline in real estate prices combined with the escalation in interest payments due has meant that many borrowers have defaulted leading to a collapse in the system. The collapse of private lending has been huge since private lending is bigger than the official or organized lending market, and since the official borrowing market from banks is actually limited to state and large enterprises, there is a long list of officials and developers that have been caught in lending scandals where they have on-lent to the private market essentially arbitraging the system..

This shadow banking system has created paper wealth based the high compound interest rate that has evaporated because it has not been sustainable even though it is widespread in China.

The collapse of lending and construction has now become a real problem because in 2011 there were 19 million Chinese employed in the construction industry and revenues from land use account for 63% of local revenues.

Based upon China’s Input-Output Tables from 2007 the real estate industry’s value added was 4.63% of GDP and Real estate related industries (steel, construction, cement, chemical industry products, etc.) were 5.45% of GDP. Real estate related consumption (decoration, furniture, appliances, etc.) was 0.18% of GDP for a Total 10.3% of GDP. New Construction alone absorbed 19 million workers in 2011.

People only buy the right to use the land for a certain number years [zoning]. Yet During 2009-11, revenues from land transfer (right to use the land for 50-70 years) accounted for 63% of major cities’ total revenues. This raises the question of whether there is a symbiotic relationship between developers and the land and whether the Real Estate bubble will now burst on a nationwide basis or is limited to Inner Mongolia. Professor Yan thought it was probably limited to Inner Mongolia and was not applicable to China as a whole.

This is because Ordos currently relies for 60% of its revenue on coal and so must move to higher value added industries if it is to sustain its growth. This is why it is presently offering preferential access to its Natural Resources in exchange for industry investment and has been giving away billions in Natural Resources and profit for relatively small investments in manufacturing. With rates of return on such investment so large firms can afford to borrow in the underground economy. Inevitably though property prices will continue to decline or rental rates must come into sync via inflation. The feeling is further declines in Real Estate prices are likely via bankruptcy or the equivalent.

The central government has called on “equipment manufacturing industries to be moved to the west”. Naturally, these industries have become the new hope for Inner Mongolia. During the “12th Five-Year“ period, the equipment manufacturing industry is supposed to achieve ￥352 billion of revenues, by 2015 and ￥800 billion in 2020 compared to less than ￥100 billion in 2010. As an example in 2005, the Ordos government gave Huatai Automobile the exploration rights to two coal mines: Nian pan Liang and Tang Jia hui; a piece of land with an area of 6,000 mu (988.42 acres) at the price of ￥10,000/mu. Huatai promised to invest ￥20 billion and achieve annual revenues of ￥60 billion and Huatai sold the rights to Nian Pan Liang for ￥1 billion in 2008.

In 2009, Inner Mongolia government “Equipment manufacturing and high-tech projects with fixed assets investments over ￥4 billion can get coal resources. The standard is 100 million tons of coal for every ￥2 billion investments in fixed assets. By one estimate a 100 million tons of coal can bring in ￥25 billion in profits.

Summarizing 100% return and leverage ratios of 10:1 and cost of borrowing 50% leads to profits of 600%. Thus many new comers to the real estate market borrowed heavily not from the banks, but from other individuals. The supply of credit of credit came from owners of coalmines, farmers (relocation compensation), companies, bankers (access to cheaper capital), officials (connections) so that everybody was involved in private lending. To control the rampant real estate market and inflation, the central government tightened monetary policy in the 2nd half of 2010 but it didn’t stop many investment projects and many could not be stopped. Thus private lending rates rose dramatically in some areas. In Wenzhou, it reached 100% a year.

Professor Yan also discussed a possible bubble in photovoltaic products where an entrepreneur over-expanded and because not enough public money was available he borrowed privately at 5% per month that rose to 100% per years as banks cut back due to the government’s tight money policy. He eventually had to flee to the US. The Government is now talking about a new round of stimulus projects. But these projects risk leading to another boom and bust situation as the government seems over-reactive in terms of fiscal/monetary policies only keeping an eye on the government-driven economic growth model where promoting GDP is everything and the possible local or individual impacts as in Ordos are secondary.

Yet in the short term he does not feel the real estate bubbles will burst in major cities or for local government debt bubbles since maturities have been pushed out. But specific private lending bubbles may burst as in Ordos.

**The Lawyers** attending the conference began their presentation on the role of prudential regulation with respect to the prevention of bubbles as not likely but rather with the goal of moderating a financial bubble’s growth and the seriousness of any aftermath. They accepted that there may be an inefficient allocation of resources from such prudential regulation, but if this inefficiency can be limited, it may be a reasonable cost to pay for ameliorating the consequences of a bursting financial bubble. The use of prudential regulation to prevent asset price bubbles is considered by some to be a fool’s errand because financial bubbles are only identifiable after-the-fact.

During the period of asset price increase there will be skeptics and enthusiasts, with the sentiment of the enthusiasts outweighing the skeptics. This situation is no different from a period of asset price increases that afterward turns out to be based on a solid innovative foundation (e.g., the rise of the importance of cars, telephone, radio and the Internet). Policy or regulation that pays more attention to the skeptics risks inhibiting the efficient allocation of resources and would seem to be based on the general inefficiency of financial markets which requires constant intervention to ward off asset price bubbles.

Not all financial bubbles are equally important. Unlike the bursting of the housing bubble, the bursting of the tech bubble led to only a mild recession. The difference was related to the amount of leverage. With the deflating of the tech bubble, stock market losses were absorbed by households through holdings of equities, mutual funds and pension funds. These were largely unleveraged holdings. Households took the hit, adjusted spending and moved on.

With the deflation of the housing bubble, households were again the first to absorb losses, but those losses and the economic downturn caused households to default on their mortgages, which caused losses to the financial sector. Over $1 trillion in housing value loss was transferred to highly leveraged financial institutions that held mortgages and mortgage-backed securities. Since equity holders have limited liability, even modest losses can wipe out capital and generate losses for debt holders. The fear of such losses leads to runs by debt holders. Uncertainty as to which financial institutions had positive equity caused lending to freeze up and fear of insolvency caused pressures on financial institutions to remain liquid, which led to the sale of assets in fire sales.

[Editor’s Comment: It is likely that debt holders such as SIVs or banks with more leverage had more fear and thus a greater desire to remain liquid.]

Although prudential regulation has its costs, when executed properly, the result should be that financial institutions will be less susceptible to the effects of asset price bubble deflation. Some typical prudential regulatory tools include capital requirements and leverage limits, activities limitations, requirements that management be competent, restrictions on financial flows between the financial institution and its owners and restrictions on transactions between insured depository institutions and their nonbank affiliates. It is also critically important to have adequate numbers of well-trained and well-paid supervisors. The global financial crisis shook confidence in such micro-prudential tools as the primary instrument for ensuring financial stability. In the future one should expect to see greater reliance on macro-prudential tools. (e.g., countercyclical capital requirements, loan-to-value ratios that vary over the business cycle)

 The Dodd-Frank Act provides for enhanced prudential requirements for large systemically important financial institutions and extends these requirements to certain nonbank financial companies that will be designated by the Financial Stability Oversight Council (“FSOC”) as firms subject to Federal Reserve supervision. If there was more effective prudential regulation (and conduct of business regulation, would the collapse of the housing bubble have been less severe? Certainly, financial institutions would have been less leveraged and fewer unaffordable loans would have been underwritten.

The question is how to make prudential regulation more effective not only through additional powers but also through more effective implementation since many regulators appear to have been too timid in their supervision of financial institutions leading up to the last financial crisis. Smart people have proved to be quite capable of working their way around the regulators and hyper-technical regulations.

There is a need to have regulators that are well paid and equally as smart or smarter than the regulated with sufficient supervisory discretion and the judgment to know when to exercise that discretion and follow through.

[Editor’s Comment: Singapore for example takes this approach. It is also seems a way to address the risks of cooption and the revolving door noted in other parts of these Notes.]

The recent financial crisis resulted from lenders with too little “skin in the game”, deteriorating underwriting standards and regulators who identified with and who were coopted by the financial institutions they were supervising. Dodd-Frank and objectivity in coming to terms with mistakes made in the past will provide a starting point for addressing these and other shortcomings in financial institution regulation.

Concerning the issue of systemic risk, regulators did not take into account the harm that large, interconnected and highly leveraged financial institutions could have on the economy if they failed. Unsupervised activities in the “shadow financial system” made it hard for regulators to understand the dynamics of bank credit markets and public capital markets. The FSOC was designed to serve as a systemic-risk regulator.

One way that the Dodd-Frank Act addresses systemic risk is through the FSOC. The FSOC has 10 voting and 5 nonvoting members. The voting members are made up of the heads of various regulatory agencies; the Treasury Secretary serves as the chair. The FSOC must meet quarterly and most decisions are made by majority vote. The purpose of the FSOC is to: (i) identify risks to U.S. financial stability due to the activities of large, interconnected bank holding companies and nonbank financial companies; (ii) promote market discipline by eliminating expectations that these firms are too big to fail; and (iii) respond to emerging threats to the stability of the U.S. financial system.

In addition, the FSOC will be responsible for designating certain nonbank financial companies for supervision by the Federal Reserve because of the potential risks they pose to U.S. financial stability. To prevent or mitigate risks to U.S. financial stability that these nonbanks and bank holding companies with consolidated assets greater than or equal to $50 billion could pose, the Federal Reserve, on its own or pursuant to recommendations by the FSOC, shall establish prudential standards that are more stringent than the standards that would ordinarily apply and that increase in stringency based on the systemic footprint of the financial institution.

These enhanced prudential standards include single counterparty credit limits, greater public disclosure to support the evaluation of the firm’s risk profile, limitations on funding with short-term debt, a requirement to establish risk committees, capital plans to be reviewed by the Federal Reserve that demonstrate that the firm has robust, forward-looking capital planning processes that account for its unique risks and leverage limits. Systemically important bank holding companies and nonbanks will also be subject to a resolution plan or “living will” requirement (“DFA Rule”). The plans must provide: (i) for the rapid and orderly liquidation or restructuring of a systemically important firm under the Bankruptcy Code or other resolution regime; (ii) information that provides the Federal Reserve and the FDIC with an understanding of the firm’s structure, complexity and internal operations; and (iii) a plan for funding critical operations during the firm’s resolution. The plan must be evaluated under “baseline”, “adverse” and “severely adverse” economic conditions.

If the Federal Reserve and the FDIC jointly determine that the plan is not credible or would not facilitate an orderly resolution under the Bankruptcy Code, the firm must resubmit its plan. Firms that do not timely resubmit their plans may be subject to more stringent capital, leverage or liquidity requirements or restrictions on growth, activities or operations. A firm that has more stringent requirements imposed, but does not resubmit a credible plan within 2 years may be required to divest certain assets and operations.

There are roughly 124 firms (about 90 headquartered outside of the U.S.) that are required to produce living wills. The FDIC has its own resolution plan rule (“IDI Rule”) that covers approximately 37 insured depository institutions (institutions with $50 billion or more in assets). The purpose of the DFA Rule is to, limit systemic risk and moral hazard, while the IDI Rule focuses on making sure depositors are paid off and that the deposit insurance fund is protected.

[On the topic of Financial Regulation see Addendum to these Notes for some ideas from Martin Lowy, a former counsel to the NYS Banking Commissioner, who was supposed to come to the Conference and present but could not.]

The orderly liquidation authority (“OLA”) is a new resolution scheme provided by Title II of the Dodd-Frank Act. Although it should be expected that the living will exercise and enhanced prudential standards will result in firms that are resolvable under the Bankruptcy Code with limited financial disturbance to the U.S. financial system, OLA is available as an option when the relevant governmental parties determine that the use of the Bankruptcy Code to resolve a financial firm would pose systemic risks to U.S. financial stability.

OLA is a bank-like receivership process modeled on receivership provisions of the Federal Deposit Insurance Act; it has certain advantages over the Bankruptcy Code in ameliorating the financial distress that might come about from resolving a systemically important financial institution, such as the availability of government funding to preserve the continuity of systemically important operations until they can be liquidated or sold. Funding, for which the government must be reimbursed, will provide the breathing room the failed firm will need to avoid asset fire sales that may be harmful to U.S. financial stability.

The expectation is that OLA will rarely be needed because supervisors will make sure that the risk profile of systemic financial institutions is addressed through enhanced prudential requirements and credible living wills.

With respect to the fraud and scandals that normally surround a financial crisis it actually takes a lot of time and effort to identify and prosecute since one is looking at the past and needs evidence. This is why so few cases involving mortgage-backed securities have been brought so far. Yet the DOJ does have a task force that is examining mortgage-backed securities though mostly these are civil related cases. Getting whistleblowers is one aspect of this process. D-F violations are limited mostly to mail and wire fraud that are related to commodities’ futures or swaps. Also under SOX false statements to auditors are covered and not just what goes into the 10K and the CEO and the CFO validate. This point was illustrated by a case involving earnings manipulation where the firm took earnings immediately rather than booking it properly as a loan.

**Dr. Ben Chou** then explained how Game Theory might be applied to the current Euro Crisis and financial organizations attempts to manipulate the Rule-Making process mandated under Dodd-Frank.

Looking at what went wrong in Greece he noted that Greece's economic reforms led to it abandoning the drachma as its currency in favor of the euro in 2002, making it easier for the country to borrow money. It then went on a big, debt-funded spending spree Latin American style circa 1970s and 80s, including paying for high-profile projects such as the 2004 Athens Olympics, which went well over its budget.

The country was then hit by the global downturn and a high Euro value relative to the dollar, which meant that it had to spend more on benefits and received less in taxes. There were also doubts about the accuracy of its economic statistics due to some debt manipulation with the aid of Goldman Sachs. Widespread tax evasion also hit the government's coffers. In 2010, the EU, IMF and ECB agreed to a bailout worth 110billion euros, and later, there was a second bailout of 130billion euros, plus a debt write down of 107billion euros. These economic problems meant lenders started charging higher interest rates to lend Greece money due to perceived increased default risk.

The price for Greece has been the increased austerity and Eurozone monitoring. The austerity program includes drastic spending cuts, tax increases, and labor market and pension reforms. These have had a devastating effect on Greece's already weak economic recovery. This has naturally raised the question of whether it should leave the Eurozone. If Greece were to default or even to leave the euro, the country would almost certainly reintroduce the drachma, which would devalue dramatically and quickly, making it even harder for Greece to repay its debts unless it redenominated them into drachma since a devalued currency would decrease its debts while making Greek exports and tourism less expensive.

At the same time such an event could cause a major financial crisis that could spread to two much bigger economies such as Italy and Spain. This is the dilemma facing stronger countries in the Eurozone such as Germany, the Netherlands, and Finland since if both Italy and Spain were to default or leave the Euro, it would probably be the end of the Euro.

European leaders have already agreed on a 700billion-euro firewall to protect the rest of the Eurozone from a full-blown Greek default. It may be enough for an orderly exit of Greece (with the estimated cost of 300billion euro), but it probably would not be enough for a disorderly exit with an estimated cost of 1trillion euro.

Using Game theory to assess the negotiating positions of Greece versus the strong economies led by Germany one can pose the following non-cooperative game where each country only cares about its own payoff. Sometimes the game can be a prisoner’s dilemma (PD) game in which a combination of dominant strategies can lead to an inefficient equilibrium. Using Germany and Greece as an example of such a two-player PD game, Germany gets the options of Eurobonds versus no Eurobonds and Greece has the choices of Austerity Program versus no Austerity Program where Germany’s dominant strategy is no Eurobonds and Greece’s dominant strategy is no Austerity.

On the other hand we could design a cooperative game where Germany would use transfer payments to aid Greece’s economic recovery and keep it in the Eurozone, which benefits Germany by keeping the euro weaker than it would be without Greece. Indeed a well-designed fiscal transfer program can lead to a win-win situation for both nations. Germany should thus help Greece establish a stimulus package to (1) increase exports, (2) lower unemployment, (3) increase aggregate demand, and (4) keep its productive workers in Greece.

The idea is Italy and Ireland have the most incentive to leave the euro, followed by Greece, Netherlands, Belgium, Portugal, Spain, France, Finland, Austria, and Germany. Thus from a cooperative game perspective the countries with the least incentive to leave should pay the countries with the most incentive to leave to stay. Chander and Tulkens (1995) originally proposed such a sharing rule, although in a different context. Before nations engage in monetary transfers, each nation has a utility level *Vi*. After nations engage in monetary transfers, each nation has utility level *Wi* . Based on this one can define the monetary transfers which will work as each participating nation is better off by forming a larger coalition with utility or monetary transfers such that *Wi* ≥ *Vi*..

Some countries must be the net contributors while others are net receivers of monetary transfers. The countries with the most to gain are the net contributors, while the countries with less to gain are the net receivers. The question is whether practically this can be done.



Dodd Frank differs from the Euro crisis because the regulator has the authority to regulate domestic financial institutions as explained above. From a theoretical perspective, the goal of Dodd Frank is to increase the safety of financial investments and the financial system, but this implies a lower rate of return for the financial institutions being regulated since they now have to maintain more capital against many income sources such as derivatives. Regulators thus must use carrots as well as sticks to get firms to cooperate in terms of investing conservatively versus aggressively in order to reach an efficient equilibrium from the firm and system viewpoint since a system failure can also negatively impact the firm.

Such a cooperative game must address the following: What is the carrot in Dodd Frank?

What is the stick in Dodd Frank? Can the regulator and financial institutions have or reach a win-win situation? Can Dodd Frank bring them closer to a win-win situation? How?

**Professor Mike Ehrlich** began by explaining how he and some colleagues believe the current mortgage problems related to the fact most mortgages are underwater and thus not re-financeable could be resolved along with the accompanying foreclosure problems. The idea is to get major mortgage holders to sell the homes to investors prior to any foreclosure and to then convert the homes to rental properties where the prior owner would have the first opportunity to rent.

In addition local governments are looking at the possibility of using eminent domain to achieve the same final result. Fannie Mae is opposed this process due what it feels is a Congressional Mandate not to lose money. Yet foreclosure is actually quite costly and it is less costly to convert to automatic refinancing for a rental conversion. Simplicity in the process is important including getting rid of any 2d mortgage holders in the case of a short sale and using a deed to transfer ownership in lieu of a foreclosure. To give an incentive to the prior owner “renter” there would be a shared appreciation [75% +/- incentive to the mortgage holder related to the principle write down] as part of the revised mortgage. The process would begin with an appraisal based on the write-down of the existing mortgage given the current market value of the house.

Servicers would lose under this system but they should be seen as marginal players even if they possess a second lien. The challenge is how to wind down the GSEs. Likely changes in mortgages and housing are larger down payments, higher interest rates, and smaller homes though in the current market interest still remains low if one has the down payment and home prices though rising are also still low.

An Abstract of the paper prepared by Professor Ehrlich and his co-authors follows, while the complete paper, “The Mortgage Crisis and Current Housing Market Practical and Complete Recommended Solution, can be downloaded from the Leir Center website: www.leirbubblecenter.org - Working Paper #9.

“Abstract: Introducing a little discussed concept to mortgage markets termed Price Appreciation Rights; this proposal presents a practical private sector, non-partisan solution to the ongoing housing and mortgage crisis plaguing the United States economy. Under this plan, financially distressed homeowners present a deed-in-lieu of foreclosure as an alternative to default and agree to rent the property from the loan servicer at an affordable rate.

This arrangement prevents vacated property decay and maintains the value of the rented property and that of its neighboring properties. In addition to the rental payment, qualifying renters may also make equity payments into the property with the goal of reaching a 20% equity stake. Upon financial recovery of the renter and after reaching the 20% equity stake, the renter can then repurchase the home for the value of the property at that time. In return for assuming 100% of the risk in the rent-repurchase agreement, the loan servicer is entitled to 75% of the increase in the home’s value realized during the rental phase, i.e. Price Appreciation Rights. The renter is entitled to 25% of the Price Appreciation Rights. This solution can be administered in similar forms to first time homebuyers and other subprime market participants. If properly implemented, the proposed solution should return proper clearing mechanisms to both the housing and mortgage markets. As a result of returning to functional mortgage and housing markets, housing demand and prices should begin to increase leading to economic recovery including higher levels of employment.

In addition, this proposal suggests a sliding interest rate scale of 6.65% down to 5% for borrowers with a 96.5% loan to value ratio (based on June 2011 interest rate levels). That sliding scale rewards both borrowers and lenders with a 12% ROE on the top 6.5% tranche for extra principal payments and 8% on the next 10% tranche. It is specifically designed to offer a private alternative to government sponsored loans. The plan encourages rapid collateralization of the loan toward 20% equity to reduce its risk both to the lender and the housing system itself. The fact that there are no widely available private alternatives now probably indicates that current FHA loans underprice market risk.

This proposal complements the one announced on October 24, 2011 on refinancing at lower current interest rates, because they serve different categories of distressed borrowers. In fact, the one announced on October 24 might be enhanced by incorporating price appreciation rights to mitigate a portion of tax payer losses arising from lower interest rate refinancing, while still lowering default risk from lower current payments.

We also believe a recovery in the housing market would lead to a quicker, substantial reduction in unemployment. This hypothesis is based upon Latoya Egwuekwe’s research that illustrates how unemployment trailed the collapse of the housing market on a county-by-county basis during the 2007-2010 period.

http://www.latoyaegwuekwe.com/geographyofarecession.html.

Our proposed relief-repurchase mortgage has the potential to greatly aid in the reversal of this trend and return the U.S. economy to significantly higher growth.

# Proposal Summary: Solution to the Mortgage and Housing Crisis

1. To revive the residential housing market, market participants need a means to overhaul the current system in a way that is equitable to all parties by sharing the loss from principal reduction. To achieve this, we propose the following:
	1. Reset sub-prime residential mortgages to current market price levels
	2. Protect the most innocent (least culpable) -> The Distressed Home Owner. For Example, current mortgage greater than current appraisal, and 1/3 of verifiable monthly income less than current monthly mortgage payment & monthly property tax payments.
	3. Ask the most sophisticated & knowledgeable party in the crisis to split the loss burden -> the financial industry equitably shares the loss burden.
	4. In return, provide an opportunity for the “knowledgeable” lenders to mitigate their losses through future home Price Appreciation Rights. Additionally, lenders avoid 70% of losses from foreclosures.
	5. Permanently improve and align incentives to prevent recurrence of this mortgage crisis.
2. Proposal to revamp the current house purchasing system includes:
	1. Offer a special no money down self-collateralizing mortgage with a declining interest rate based on eventually meeting the traditional 20% equity-to-value targets (7% to 5% interest rate)
	2. Reduce the time for a short sale/foreclosure to refinance a property with a deed-in-lieu process with current owner as renter until sale
	3. If owner qualifies for hardship (e.g. 30-40% verifiable income greater than house payment based on current appraisal), that current owner can refinance by becoming a renter with an option to buy with a declining interest rate mortgage until the 20% equity-to-value target is met. Interest deductions and property tax deductions will continue to the renter.
	4. Initially, extra principal payments produce a 12% return on equity to both the renter and the lender
	5. To avoid non-documented loans, renters with options to purchase authorize payments from their employer source
	6. The renter will give up 75% of the appreciation in the property to mitigate the loss of the previous lender from principal reduction.. Recovers about 80% of lender losses, thereby protecting tax payers from institutional driven losses.
	7. At the renters option, once the equity/loan value is at least 20%, the loan will be converted to a conventional mortgage with no closing cost (only an appraisal to determine loan/value ratio), renter-‘ will receive title, and can select a fixed or variable mortgage going forward
	8. Once the mortgage is converted to a conventional mortgage, the previous lender will be paid off from the refinance proceeds including 75% house price appreciation rights and will no longer have interest in the property
	9. If the previous owner who is currently a renter does not meet affordability requirements, the current renter will continue to rent until a buyer is found. Although not as diligent as an owner, a renter is superior to having the house unoccupied.
	10. If the previous owner meets distress and affordability requirements, but later relinquishes all his/her interest in the property before conversion to a conventional mortgage, the previous owner shall receive accrued principal payments and 25% of property price appreciation. The lender can then find a new renter using similar mortgage terms (assignable loan) with price appreciation rights to the previous lender still intact.
3. Benefits of the proposed system:
	1. Foreclosures will dramatically decrease and many current owners will remain in their homes.
	2. Short-sales will be expedited and sold to new buyers who can afford terms with the property preserved
	3. Version of proposed mortgage structure can be used as a new sub-prime mortgage with a down payment
	4. The no money down mortgage will be eliminated when the crisis passes
	5. Home prices will stabilize and home price appreciation will begin across all housing markets
	6. New buyers will enter the market at a very favorable time for home ownership.

It was also noted states are very active in this process. There exists a program in PA for modifying mortgages when one has lost a job, and NY is trying implement something through the banking law committee of NYC bar.

End – William V. Rapp, H. J. Leir Professor International Business, New Jersey Institute of Technology and Director Leir Center For Financial Bubble Research

*I look forward to seeing everyone at Conference #3 September 20 and 21, 2013 when we will examine in more detail the Great 1929 Crash, The Japanese Bubbles of the 1980s and the Dot.com Boom and Bust.*

**Addendum**

# Monetary Policy Based on Stress Testing

By Martin Lowy

This paper is intended to quickly describe a series of policy conclusions and recommendations that, taken together, would significantly change the means by which the Federal Reserve Board seeks to manage the U.S. economy. Many of the statements in this paper are controversial, and each requires additional substantiation to win over skeptics. But unless the set of ideas is grasped as a whole, the potential significance of the individual parts may not be understood. The details will be developed in future papers.

## Basic Lessons of Recent Economic History

Substantially everyone cheered “the Great Moderation” that appeared to take place between about 1992 and 2005. The economy grew (other than a normal-sized hiccup in 2001) at a fairly steady pace and employment was robust, with modest inflation. This was the kind of economy almost everyone wanted to have. They called it the “Goldilocks economy” because it was “just right”. The problem was that too much of the growth and employment depended on escalating amounts of borrowing and leverage in the consumer and financial sectors. The result of the excessive build-up of credit and leverage was the credit implosion that led to the Great Recession.

In retrospect, policy makers did not at the time sufficiently understand the likely consequences of the credit boom that fuelled the Great Moderation’s apparent economic advances.

The boom and bust cycle of the 2000s was larger than any since the Great Depression, but severe recessions in 1973-74 and the early 1980s also featured large swings in credit formation and leverage.

Following the implosion of 2007-2008, the Fed has employed various policy tools to attempt to spur job creation and economic activity. These tools all have sought to utilize the medium of credit formation to spur the economy. They may have been successful in preventing a worse outcome, but they have not been successful in creating a healthy job picture and economy.

It appears to me that future policy should focus on preventing excessive credit/leverage and the boom conditions that they promote. The boom times seem nice, but the bust is too destructive. It simply takes too long to get back to economic health after a bust; therefore policy should focus on preventing credit-induced booms.

These observations have led me to ask whether there is a better way to conduct monetary policy in the interests of more stable growth. To create such a theory of monetary policy, I have been trying to design a way to measure the amount of credit/leverage in the economy and a way to manage the economy to smooth out the extreme events that are caused by excessive credit/leverage. I have been working on that problem for a long time, but my research has not gotten me very far. However, the way that the Federal Reserve Board has administered stress tests for large banks has convinced me that there is an easier and better way to manage the flow of credit without having to measure it or to significantly interfere with the operations of the market. The stress test mechanism could do that job and provide a better way to mange the economy in the interests of gradual growth and stability because stress testing lending institutions is naturally counter-cyclical.

## Fundamental Reexamination

Why have the means of conducting monetary policy over the last 40 years not led to the stable growth that society would prefer? I think the personnel at the Federal Reserve Board are not the problem. Almost uniformly, the Governors have been intelligent people of good will. The problem, in my opinion, lies not in the people but in the theories that they have applied. Those theories appear to be soundly based in history and the theory of macroeconomics. But that, I would urge, is their fundamental problem.

The means that the Federal Reserve Board uses to manage the U.S. economy are, in my opinion, fundamentally flawed. The reasons that they are fundamentally flawed are linked to the history of macroeconomics. The defects are based on the functions of money and banking, which have changed in many ways over the last 40 years. The basic problems are that neither money nor banking function as prevailing theories would suggest. Specie has declined significantly in its importance either for commerce or for managing the economy. Bank deposits and bank loans also have lost much of their meaning. Most fundamentally, changes in money supply, however defined, are negated or enhanced by changes in the velocity of money, over which no known policies have significant influence. Recent experience shows that V can be quite volatile and can negate changes in M.

Moreover, banks, no longer constrained in their lending by “reserves”, lend what they believe they profitably can lend based on their required capital and the loans available in the marketplace. Adding to their reserves will not make them lend. Moreover, in the U.S., the capital markets dominate the lending business for large corporations, which may be induced to borrow by low long-term rates but which may use the borrowings to create increased leverage rather than increased productive capacity or may add the productive capacity in other countries. The large corporations will increase productive capacity in the U.S. when they are constrained by capacity, but in an economy that is not so constrained, they are more likely to buy other companies or to buy back stock, thereby increasing financial leverage, or to add capacity in markets that are growing faster.

Monetary policy thus is relatively ineffective to spur demand following a credit-fueled boom and bust. Moreover, even were monetary policy successful by inducing renewed borrowing and leverage, that success likely would be temporary and would lead almost inevitably to another bust. In addition, the dislocations for investors that are caused by managing the economy by means of interest rate manipulation create long-term problems. Some of those problems are known, but I believe there will be others that are difficult to foresee at the time the policy lever is employed.

When the economy is growing briskly, the current ways that the Fed has sought to manage the economy also have not been as effective as one might wish, in part because of the theoretical issues that I have mentioned, and in part because it is psychologically difficult to “take away the punch bowl just when the party gets going.”

These criticisms of monetary theory are not meant to contend that recent Fed actions to ameliorate the impact of the Great Recession necessarily are wrong. Extraordinary times may well demand extraordinary measures. But the criticisms *are* meant to contend that (1) such measures cannot be effective and efficient for the long term, and (2) since they cannot be effective for the long term, they should be phased out as soon as possible. But what should replace the current policies?

## Goals for Monetary Policy

The current policies should be replaced by policies designed to prevent or reduce the boom and bust cycles through which the economy goes. Society’s goal should be to design and implement monetary policies that have the effect of reducing the amplitude of booms and therefore the depth of busts; in short, to encourage a gradually and smoothly growing economy. I will assert a corollary here: Only credit-fueled booms are dangerous and to be avoided; therefore the focus of any new policy regime should be on measuring and controlling the credit/leverage in the economy; enabling credit formation but discouraging excessive credit/leverage.

## A New Role for Stress-Tested Capital Adequacy

Luckily, the Federal Reserve Board already is experimenting with a better way to manage the economy. The fundamental building block is the stress test of bank capital adequacy. Properly administered, the stress test should deter a tested bank or other lender from advancing credit (broadly defined) that would implode in the event of foreseeable adverse economic circumstances. If sufficiently broadly administered, stress tests thus should prevent a credit-induced boom, since the tests would counteract the normal creditor euphoria and increased leverage that fuels the boom.

Since a stress-test regime administered to all large lenders would prevent credit-induced booms, it also would, by definition, prevent the busts that follow the booms. And since the busts would be prevented, long-term heroic monetary policy measures should become unnecessary.

## The Human Factor

It probably would be naïve to think that stress tests could be put on automatic pilot. Economic cycles, albeit cycles of lesser amplitude, still would exist, and the tests ideally would take into account the economy’s place in the cycle, being less stringent in bad times and more stringent in good times.

Human intervention, however, would open the system to politics and other sorts of mischief that one would like to avoid. The design of the program should seek to minimize the possibility of mischief, especially mischief foisted by the lenders, whose compensation might suffer by not having the boom years.

## The Role of Credit

The stress test regime would, admittedly, require society to understand the role of credit differently from the way it currently seems to understand the role of credit. Basically, society would have to make a decision to the effect that although credit is useful in providing some of the investment that economic growth requires, credit need not be the principal driver of growth.

I do not deny that credit is useful to an economy or that some types of credit are useful in order to promote economic growth. But I do contend that not all credit is useful; that leverage necessarily increases risk; and that subsidizing credit distorts economic incentives. In fact, I would argue that equity investment, not credit, is the best investment medium for the economy.

The following brief comments on some types of credit are intended to suggest their relative usefulness to society.

Business credit to carry inventory and receivables or to build plant and buy equipment is important to an economy. So is trade finance. But whether or not loans to buyers of companies to leverage their purchases is useful is a matter for debate. I would resolve that debate by letting the market decide the issue. Similarly, whether leveraging the purchase of financial assets is useful, I would leave to the market, as modified by the information that the stress tests provide. My basic point is that although credit is useful to businesses, it should be priced by the market, not by the government, except to the extent that creditor conduct has to be modified at times of relative euphoria by reference to the downside possibilities that stress tests illustrate. Markets are not perfect, and often government intervention to provide information or infrastructure can be useful. I would make a policy distinction between government intervention to provide information and government intervention to directly affect prices.

Consumer credit is fundamentally different from business credit because consumers historically have not been good at evaluating whether or not they should borrow. Consumers often also are not good at evaluating the terms on which credit is offered to them. For those reasons, government often should intervene to prevent over-reaching by creditors. Nevertheless, credit is useful to consumers to purchase long-lived assets, such as homes, cars and major appliances. And, coincidentally, such long-term credit is important to the economy as well. But as with business credit, it is better for the market to price the credit rather than the government. If particular consumers are priced out of the immediate-purchase market, then probably it is better for them not to borrow to bring their purchases forward because the rates are too high to make the purchases worthwhile in the long term. If society decides that some people should be subsidized, it would be better to subsidize them directly rather than through more opaque and less targeted interest rate subsidies.

 Short-term consumer credit, such as credit card lending, payday loans, and other forms of high-rate, short-term credit are another matter entirely. These forms of credit, although in the short run apparently good for the economy and the consumer, in the long run are not good for the economy or the consumer. Such credit may bring purchases forward in time, but in the long run, they result in lower disposable income for the consumer and a reduction in real benefit to the economy.

Credit within the financial sector is pure leverage that is useful only to the extent that it enhances the “real economy”. As such, government should be neutral toward credit in the financial sector, except to the extent that the leverage that it produces is dangerous in economic downturns. The stress test regime should prevent that sort of dangerous leverage.

In general, credit should be priced by the marketplace, not by government intervention. Such market pricing would, I believe, be likely to increase the price of credit on average. It also, if that forecast of more expensive credit is correct, would increase the returns to long-term savers. In my opinion, increasing the returns to long-term savers and making those returns more stable would be a good result for an aging society that will depend in many ways on its returns on saved capital for the welfare of its older citizens and its pension, endowment and insurance institutions.

## Monetary Policy Lite

If society were to decide to understand credit in a manner similar to the construct that I have described, then society would not be concerned about the stress tests’ impact on credit. Credit would find a rough market equilibrium and would tend to remain in rough equilibrium.

**Such an understanding would place proper emphasis for economic expansion on productivity and the number of workers, rather than on credit.** **That emphasis would bring the role of education to the fore because both productivity and the number of workers depend on the quality of education. Better education, once achieved, would lead to a more stable, more productive, more just society. Credit-fuelled booms cannot do that.**

The depth of the Great Recession resulted primarily from the lack of final demand that followed from the over-leveraging of consumer balance sheets over the period 1995 to 2007. When the ability to continue to borrow against home equity (directly or indirectly) ceased, consumer demand necessarily declined precipitously. In my opinion, consumer demand can re-exert itself in a healthy way only when employment and employment earnings grow. The role of credit in creating jobs and earnings for the long term should be secondary. When the role of credit becomes too prominent, it makes the economy fragile and subject to the boom-bust phenomenon.

*In order to govern the level of credit/leverage in the economy, the stress test regime would have to be applied to all large lenders*. Society should set a threshold amount of credit for each institution, such as $50 billion in current dollars, held, originated or guaranteed (in any manner) by the institution and its affiliates. Credit-like derivative instruments should be included.

But including an institution within the stress test regime would not require that the institution maintain regulatory capital. Most types of institutions could be governed by whatever capital regime governs them, but they would be required to publicly disclose the results of the stress tests. Such disclosure would apply, for example, to mutual funds, insurance companies, hedge funds, pension funds, endowments and other forms of institutional lender, regardless of whether they originated credit and sold it or merely held credit instruments. For entities such as mutual funds and conduits that do not have published capital, the disclosure would be in the form of gain or loss on the portfolio in hypothetical stress-tested circumstances.

My hypothesis is that, if the stress tests are properly realistic, then at times of incipient overheating they either will dissuade the tested entities from extending credit or will dissuade investors from taking the attendant risks. At times of relative economic slack, the tests should have the effect of encouraging well-capitalized institutions to advance credit to credit-worthy borrowers.