

**Global Financial Crisis and Government Intervention:
Surplus Generation, Gearing Ratio, Asymmetry of Financial Multiplier
and Other Considerations**

by

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I. INTRODUCTION: CRISIS NOT ANTICIPATED BY THE EXPERTS

Starting with the US, since the middle of September, 2008, global financial markets have taken a severe drubbing. Whether it is the stock markets, real estate or financial institutions, all of them have been experiencing a decline and a crisis. The real economies the world over are in a state of rapid decline with a recession (if not a depression) a near certainty. Is this a crisis of capitalism in its generalized form or is it a manifestation of a specific form of capitalism?

This paper focuses primarily on the US economic situation to build a theoretical understanding. This is used to analyze the actions taken by the government. While it has been argued that the sub-prime crisis in the housing mortgage markets was at the root of the crisis, this paper analyzes whether this argument is correct.

Financial experts have been caught off guard¹. A bare perusal of the evolving events suggests that they had little idea of the overall situation and reacted to each individual event in isolation. In other words, while the crisis was evolving for over a year, the root cause of the crisis was not being addressed. Even now it is unclear that the US government is addressing the root cause of the crisis? President Bush has asked the US Congress for vast powers unheard of in the US history and that has upset many a people (but for lack of alternatives they are going along). He wants to give the financial system, the one that is seen to be at the root of the crisis, huge additional resources and power. Actions taken by the US government suggest that but for some modifications it wants to keep the system going as it was. This raises questions about a) the feasibility of the steps being taken, b) whether those whose mind set and actions led to the crisis can help to resolve it² and c) does a resolution of the crisis require a clean break from the existing system?

This paper analyses the inter linkages of the financial system to understand how the crisis quickly spread to all parts of it? In this context it is important to ask whether these markets not only in the US but also all over the world were taken in by the same models and were they in a mode of self deception and ignored reality and warnings? Or, was there deliberate fraud all along or at least after things started collapsing, to hide the real picture? The role of auditors and credit rating agencies, the institutions on which the public depended has been called into question. FBI is investigating whether fraud was committed in the institutions that have failed and Lehman Brothers executives have been accused of not revealing the full picture.

The governments world over are intervening in the financial markets like never before. They have provided liquidity in hundreds of billions of dollars, lowered interest rates to revive the economy, pumped capital into financial institutions in trouble, forced mergers of weak institutions with stronger ones, brought an end to Investment Banking, etc. Monetary authorities have changed the cash reserve ratio (CRR), etc. Funds have been found when they have not been available for interventions in social sectors like, health or for employment, infrastructure maintenance, housing, etc. One wonders what will happen to the Fiscal deficits of the major OECD countries³ since they are offering huge sums to businesses.

In normal times the extensive measures undertaken would have worked but will they succeed now? Of course, markets have reacted to each news of intervention but this has been for a short period of time and then the decline has continued (See Graphs 1 and 2). Does this suggest that the steps taken are inadequate⁴ or is it that they are not what is required?

This paper tries to throw light on the questions mentioned above by analyzing the nature of money and the present day financial markets.

II. MONEY, RISKY FINANCIAL ASSETS AND UNREGULATED INVESTMENT BANKING

Financial assets, including money, constitute a spectrum. They maybe characterized as more of less like money. Thus, government bonds are like money (near money) because they can be liquidated quickly and used as money. Other assets are not so easy to liquidate, and therefore, are less like money. Each asset also has some risk attached to it since there is a possibility that it may incur a loss to its owner (for a more comprehensive discussion of this, see Keynes, 1936 and Kaldor, 1960). For instance, a share of a company may fall in value (or the company could go bankrupt) and result in a loss to the owner.

There are two major concepts linked to the money markets that are relevant here and need analysis to grasp the nature of the crisis. These are the money multiplier and the gearing ratio or leveraging in case of financial assets.

In the usual text book fashion, one may then write,

$$M = m. C \quad m > 1.$$

Where, m is the money multiplier, M , the money supply in the economy and C the currency with the public (issued by the Central bank). ' m ' depends on the institutional practices in the system, the CRR, etc. It can be shown that as the CRR is lowered (raised), ceteris paribus, ' m ' becomes larger (smaller) and more (less) money becomes available in the economy.

The system of money creation in modern banking depends on borrowing and lending. This requires trust that when the money is needed by the depositor, the bank would give the money back. This works since not everyone wants the money back at the same time.

The important point to note in the context of the discussion in this paper is that the entire process works within certain limits and gives the financial system stability.

This simple picture of the financial markets was complicated by the existence of the investment banks and involvement of other financial institutions. Investment banks did not take deposits but used their own capital and the funds given to them by their clients to invest. These and other financial institutions became increasingly unregulated in the last two decades. Thus, they had few prudential norms and could buy huge amount of assets by borrowing from others. They obtained the borrowings on the promise of paying high returns - their clients were happy with them because they assured them of high returns and their shareholders were happy because they were assured of high profits. Their reputation became so good that everyone was willing to lend to them and invest in them. They also got to dominate policy since they were seen to be successful and they used this to push for further deregulation.

In the USA, the stock market is regulated by the Securities Exchange Commission (SEC). It sets the rules for the functioning of the market and oversees the implementation of the regulations. However, according to reports, due to the pressures of the deregulators, it changed the rules to effectively reduce regulation (in a meeting held on April 28, 2004) in spite of warnings by experts and further even the residual regulatory role was not performed effectively (Labaton, 2008b)⁵.

Institutions, like, Freddie Mac and Fannie Mae that did not initially wish to be a part of these new financial arrangements were also badgered to be a part of these markets. According to a news item (Duhigg, 2008) Fannie executives were told by Congressmen and other investors that they were dodgy and were missing a big

opportunity to make extra money. They were also told to lend to the poor using this extra money. This accelerated the build up of the sub-prime assets.

It has been argued for sometime that corporations and rich individuals have been using tax havens (of which there are 77) to reduce possibility of regulation and this has forced national policies to change (Kumar, et. al., 2006 show that due to competitive pressures, corporate tax rates were reduced across EU) and introduce greater deregulation.

What all this implies is that on top of the creation of money in the regulated banking institutions, financial assets are created in the unregulated system of financial institutions. Since these institutions do not require keeping margins with the Central bank, they can borrow and then invest the entire amount of the collected funds into more assets. Here then there is no limit to the amount of assets that can be created, unlike in the case of money creation regulated by the Central Bank. Layers upon layers of assets (derivatives, hedge, CDS, etc.) of different kinds have been created whose asset value is in hundreds (if not in thousands) of trillions of dollars.

The purchase of these assets is often based on payment of margins, that is, only a fraction of the asset value has to be paid immediately. Consequently, one ends up having on one's books financial assets that are a multiple of what one actually can call as one's own assets. When these financial assets mature, only gains and losses need to be settled. The full value of the asset never comes into play except for book keeping purposes.

One may express this, in a *stylized* fashion:

$F = f \cdot M$ where f is like a multiplier expressing the multiple of financial instruments over the money supply, M and F the quantum of financial assets so created.

f is a multiple, determined by complex factors, like, leveraging being used by the financial institutions, margins used to create assets, etc. As financial institutions got more deregulated (including and especially investment banks, like, the failed Lehman Brothers) they used higher and higher leveraging ratios, so that f increased (could even be infinity). This ratio became very high in case of Investment Banks, like, for Bear Stearns it had become 33 when it collapsed. This is what led to the

creation of the financial bubble in the world economy. Just like in the case of the money multiplier, financial assets are created in the process of multiplication. These cannot be extinguished simply by fiat since they are based on contracts between parties. These would have to be reversed or dissolved. But, entities own each contract legally and can or would try to enforce them through the legal process since a reversal or dissolution would mean a loss.

The dynamic aspect of the process spelled out above is that more and more of trades of financial assets occur so that asset prices rise and capital gains accrue. Paper wealth goes up. Profits are made on each other by the financial institutions. This can be self sustaining only if the value of assets keeps rising and capital gains are also invested back into the financial sector itself (See next section for elaboration).

Clearly this process is unstable and cannot go on endlessly (Kumar, 2007). Difficulties started increasing due to growing inequality that resulted in sub prime lending in housing mortgages, credit cards, etc. Thus, some of the underlying assets started crumbling. As already mentioned, pressure was brought to bear on Freddie Mac and Fannie Mae to get into sub-prime lending (Duhigg, 2008). As long as capital gains accrue, this lending was profitable. The difficulty came when the real economy started faltering (discussed in Section IV).

III. PROFITABILITY OF FINANCIAL INSTRUMENTS AND CONSEQUENCES.

Investments are for profit. Financial markets give a return on investments like any other investment. As suggested above, as long as the profits are on the books only, they do not disturb the system but when they (or a part of them) have to be encashed, funds have to be withdrawn from the production of goods and services. A part of the gross profits earned in production need to be paid out as return on the financial capital created through the multiplier f .

In the finance sector, there is concentration of capital in the hands of a few and their scale of operations is huge with trillions of dollars moving everyday. Small margins lead to huge profits on the capital invested (even if they are notional). This sector has a high degree of monopoly so that it is able to get a higher profit rate than other activities. The factors affecting this profitability are discussed below.

III. a. Financial Assets and their profitability

If A has some money invested in property, he could take a loan on it from a bank and then invest it in shares. She could use this as a collateral and then again buy more shares or other financial assets or more property. Note, though the net assets are unchanged, gross assets increase. In the process, total borrowings rise. This builds up a bubble of financial assets on a much smaller base of assets from the real economy and results in an artificial increase in prices of the former as more and more funds chase the same set of real and financial assets. The bubble grows.

For *simplicity*, even at the risk of overdrawing the lines between different sectors, let us assume that there are two broad *stylized* sectors, a Financial sector which circulates financial assets created on the base of assets from the real economy and a real sector where production of goods and services takes place and there is the circulation of the usual financial instruments, like, credit, deposits, mortgages, buying of shares and bonds, etc. There has been an increasing financialization of the latter to create a huge volume of the financial assets.

We can write the ownership of all Financial Assets (FA) as a multiple of net own assets (Oa) from the real sector. Assume that *all* individuals who have real assets (Oa) also invest in the financial assets in broadly the same way and that one can represent, as a composite, all the financial assets, FA.

$$FA = g \cdot Oa, \quad g > 1 \text{ and maybe called the gearing ratio of own capital.}$$

Clearly, if prices of financial assets (capital value) rise by a factor i ,
Capital gain is $i \cdot FA$.

$$\begin{aligned} \text{Thus, the profit rate from FA would be } R &= i \cdot FA \times 100/Oa \\ &= i \cdot g \cdot 100. \end{aligned}$$

Since $g > 1$, the rate of profit (R) is higher than what the investor could have earned on the simple capital gain on the net own assets (Oa) without the functioning of g .

Note, higher the g , higher the profit rate R.

As R rises, more funds would flow into this financial circuit, i.e., Oa and g would rise (funds previously not invested in the circuit would also flow in) and then the demand for FA would rise and prices would rise, i.e., i would rise.

Thus, R would again rise and this cycle would continue.

However, for any reason, if $i < 0$, even by a small magnitude, that is, the prices of financial assets decline (capital loss occurs) then in that case the profit rate R would become negative and again by a multiple. This would reverse the cycle with funds flowing out and O_a would decline and i would decline further and R would become more negative.

In this case, the total asset value (FA) would fall by i. g. O_a .

The situation becomes dangerous very quickly since as soon as the magnitude of i. g. > 1 , the entire initial capital of the investor (O_a) would be wiped out.

Bankruptcy may follow, especially with the existence of the rule of mark to market.

Actually, much before this situation is reached, of complete wipe out of the capital of the financial entity, it would need to raise more capital but would not be able to do so from the market due to the decline in its credit worthiness. This would be a trigger for the value of its own assets (O_a) to fall sharply and bankruptcy would follow.

So the turning point would be when capital gains begin to dry up ($i = 0$) (or there is a sudden even slight decline in the prices, $i < 0$) that the incomes from capital gains not only dry up but the asset base of the investor (O_a) start eroding. Remember, O_a is a small fraction of the total of assets built up (FA) so that a small fall in price can wipe out the former.

In brief, the process of creating financial assets through a high and unregulated gearing ratio is highly unstable (also discussed in Kumar, 2007). There is no resting place. Either there can be a rise or a fall (collapse). The situation is also asymmetric since much of the purchase is with margin money but when losses occur, a payment has to be made and for this some asset (or the underlying asset) has to be sold. If the loss is big, as in the case of a financial collapse, paying back with the margin money becomes difficult. Other assets may have to be sold to make up for the shortfall⁶.

According to reports, capital gains in the USA peaked in 2006 and have declined subsequently. Was this the trigger for the collapse of the financial markets in 2008?

III. b. Anatomy of the Financial Crisis

In the previous sub-section, it is suggested that the profit rate (R) on the financial assets (FA) falls if i or g or O_a decline. g may be reduced by regulation because as Kalecki (1971) shows, for entrepreneurs, its rise increases the risk of investment. However, in the case being considered here, no such regulation existed, so that g was actually rising. In such a situation of a rise, *ceteris paribus*, there is no obvious reason why g should decline on its own. So, for the moment we leave it out of the analysis.

i , the fraction by which the prices of assets rise can change for a variety of reasons. It depends on the demand for these assets and that rises because of the high profits these assets offer (R). Under the circumstances, i can only rise and so would R.

Is there a limit to this and if so can that trigger a fall in prices and reverse the cycle of rise?

To understand this, let us compare the returns on the underlying productive assets (O_a) and the financial assets (FA). Here a simple case is taken where we abstract from issues of liquidity and risk (as considered in the case of own rate of money return by Keynes, 1936 and elaborated later by Kaldor, 1960). This may partly be justified since the financial actors have been behaving as if they hardly took risk into account.

On O_a , one would earn both a capital gain (i) and a return from production (r). To start with assume that capital gain is the same as on the financial assets (but could be less).

$$\text{Return on } O_a = r \cdot O_a + i \cdot O_a = (r + i) \cdot O_a.$$

On FA, as shown earlier, the return is $i \cdot g$.

Since g is usually large and r is unlikely to be much larger than i , and in fact, likely to be smaller than i , it would be safe to assume that for $i > 0$,

$$R = i \cdot g \gg (r + i).$$

This is the reason for the attractiveness of the financial assets compared to productive assets. Consequently, capital gains on the former are likely to be larger than on the latter. If we call the capital gains on productive assets k , then we can write

$$i > k .$$

The implication of this would be that FA would increase faster than O_a .

Further, if $i \cdot g > 1$, then the entire productive capital base of the economy would be insufficient to pay for the profit on FA. However, profits are paid out of current incomes and not by liquidating capital. If the output capital ratio is α , then assuming that the entire capital of the economy is O_a , the maximum output of the economy would be $\alpha \cdot O_a$.

Thus, for $i \cdot g > \alpha$, where α is usually less than 1, the entire output of the system would be inadequate to pay for the profits of the financial sector and the situation would be unstable.

However, it maybe that agents do not cash in their profits on FA and instead reinvest them in the same (or similar) financial activities. This then forms a self contained sector and in that case there would be a delinking of the profits in the financial sector and the real sector.

But when salaries and profits from the financial circuit are to be withdrawn, they have to come from the profits of the underlying real assets. Thus, gross margins in real production have to rise to make these payments. Any squeeze on the net profits of the underlying assets by drawing on them would not work since then these assets would start losing their value and the situation would start becoming untenable and the bubble would start deflating as has happened now.

Gross margins in production can be increased to counter the above mentioned trend of decline, if the wage bill is squeezed or if foreign markets come into play to expand profits or capital uses tax havens to lower its tax liability, etc. All these factors have resulted in a rise in inequality in the world and as will be discussed later, contributed to the eventual collapse of the financial markets.

In the process of build up of financial assets, money has to go around faster and faster. The velocity of circulation of money also goes up. Newer and newer

assets get created. As asset prices rise, the individual (or the institution) holding the assets, feels richer and sees income from capital gains rise. She feels, even if she is in danger of default because she does not have the funds, she can sell and make a profit since the asset prices rise (as happened in the case of the sub-prime housing mortgage).

As long as only a small fraction of the financial assets are sold to realize the capital gains and to move investments out of this circuit or if the investors reinvest the proceeds into similar assets and there is no reason not to do so since it is proving to be highly profitable, the game of high returns can continue. Could there be some other trigger for larger withdrawal of funds from the financial circuit?

Indeed, if people begin to switch to other assets, like, commodities futures, then the profits from this financial circuit would be cashed and taken out of this circuit and the value of 'i' can fall and even turn negative (see next section).

IV. BASE FOR FINANCIAL ASSETS CREATION: IMPACT OF LOW US SAVINGS PROPENSITY, WAR EFFORT AND TAX HAVENS

The rise in the Financial assets (FA) requires at a minimum that the underlying base of assets (Oa) be stable (if not increasing) and not erode. There are several factors in the case of USA that may either increase or decrease Oa. Factors leading to its rise are:

I.1. The US economy has had a low and declining savings propensity⁷ in the recent past. This would lead to an increasing multiplier for the economy and an increase in the level of output. Thus, if distribution is unchanged the surplus would increase and so would Oa.

I.2. Disparities have also risen rapidly and have reached the levels that used to prevail in the Nineteen Twenties. As discussed in the earlier section, the high return on financial assets (R) would lead to a rising share of profits and correspondingly a falling share of wages⁸.

The rising profits of the financial sector (and the managerial salary paid which are actually in the nature of profit sharing and hence profits) also result in a rise in the profit rate in the real economy due to greater mobility of capital and weakening of labour. Thus, there is an all round shift in distribution against wages and in an increase in the surplus and Oa.

I.3. Greater exploitation abroad is another possibility. But, as pointed out below, the US economy with its low savings propensity would not have enough capital to invest abroad and take advantage of the higher surplus generation there.

Due to weak and poor labour laws and existence of a large unorganized sector in the developing world, the profit margins for businesses can be high. Outsourcing and integration of production across the globe has led to higher margins for companies of the advanced nations. Local capital in the developing world is willing to squeeze its labour harder with help from the local governments that have turned distinctly more anti-labour in the name of efficiency⁹.

I.4. Finally, the shift in terms of trade against the developing world has also helped the advanced nations to increase their surplus generation. The creation of the WTO has led to greater competition amongst developing countries and to a fall in the prices of their products. Thus, TOT has shifted against them and led to higher profits for the producers in the developed world.

Factors leading to the erosion of the surplus generation in the US economy and to the erosion of Oa, are the low savings propensity and the dependence on foreign capital inflows, rising defense expenditures, siphoning out of capital through tax havens and so on. These are discussed below.

II.1. In the build up of financial assets, more and more of the work force is diverted to the financial sector so that the growth of the real sector would be less than what it could be.

II.2. With net savings of the USA declining (negligible in the recent period), investments in the USA need to be financed by sucking savings from abroad¹⁰. As foreigners own more of the assets of the economy and if the profits they earn are taken out of the USA then the part available within the economy declines.

While the foreign capital coming into the US expects high returns, a large part of it has been from the reserves of the foreign Central Banks which are investing into government securities that offer much lower returns. This happens due to the dollar's position as the unofficial reserve currency.

However, more recently there has been a shift away from the dollar (Kumar, 2008c) due to the loss of confidence in it. This is a result of the rising budget deficits and mountains of the currency lying abroad. The Euro has strengthened and

simultaneously the dollar has declined and with that funds moving into the US economy have slowed down and thereby slowing down the build up of Oa.

II.3. The defense budget of the USA has seen a sharp increase since 2000¹¹. Further, since 2001, internal security expenditures have seen an upsurge after the 9/11 incident. Both these would erode the surplus available.

II.4. Increasingly, the rich have resorted to tax havens and off shore banking channels to hide their rapidly rising profits¹². This results in lower savings rate in the national economies and also lower share of tax collection in GDP. Consequently, more capital has to flow from outside and also the deficit in the budget rises forcing cut back in expenditures to hold the rising deficits. Both these tendencies would lower the available surplus.

It maybe argued that a part of the funds from the tax havens would flow into the US economy and increase the available funds for Oa. However, these funds would be highly footloose and would be the first to go away from the US economy and would accentuate the trend noted in point 2 above.

II.5. The weakening of the dollar has led to a shift of funds to commodities. Thus, the base of assets from the real economy available for creating financial assets has weakened.

II.6. Any withdrawal of profits and salaries and bonuses from the financial sector (instead of being invested in it) would have to come out of the real economy and this would lower the base of assets, Oa. They could be reinvested in the financial sector but then why would they be taken out of it anyway.

The above discussion points to a pressure for reduction of Oa in the US economy in the recent phase. To compensate for this, new sources of Oa had to be found and that is where the sub-prime housing mortgage loans came in. With little regulation, more of sub prime related assets were created. Further, it was expected that these assets would lead to higher returns because one could charge a higher rate of interest.

Such new assets fuelled an increase in Oa. However, the increase in their volume also coincided with the petering out of the housing boom since wages were being squeezed (as mentioned in point I.2 above) so that not only the returns on these assets started falling leading to a decline in capital gains but there was a default on payment of these loans. This then triggered a fall in the prices of these

assets, especially in the boom areas of the USA. This made Oa shrink and capital gains (i) on these assets turned negative. Thus, the associated financial assets also declined in value and since these assets were spread across different layers of the financial assets chain, even these assets started to lose value and both Oa and i (generally) turned negative. All this of course happened over time and not immediately as one asset affected another and the process exploded.

Simultaneously, due to rising disparities, the growth path of the economy became narrower and more unstable. This is because of its increasing dependence on a narrow consumption base of a few (See, Alternative Survey Group, 2007). The capacity of workers to consume or invest declined and they became less credit worthy and this then fed into the abovementioned factors.

The rising disparity, narrowing growth path and instability, decline of the position of dollar, switch away of investments from the US and use of tax havens not only led to the sub prime mortgage lending but also problems in it and the start of the financial crisis being witnessed.

V. MONEY, MULTIPLIERS AND GOVERNMENT INTERVENTION IN A CRISIS

V. a. Non-Functionality of the Multipliers

The question is, if the bubble could grow in an orderly fashion can it not deflate in an equally orderly manner and go back to the size where it all started? One obvious reason why this is not possible is, as pointed out above, the situation is asymmetric. In the down turn, trust breaks down completely and buying and selling stops and liquidity dries up.

It is like in the physical world, when complex systems are involved, starting from order one ends up in disorder. Take the case of a gas confined to one part of a vessel and then allowed to expand to the whole of it. The probability that all the gas would be back to where it started is so low that it is an impossibility. While the motion of each molecule maybe reversed, the totality of motion of all molecules cannot be reversed. In Physics, it is categorized as micro reversibility but macro irreversibility. The same applies to other complex systems and in the present case to the financial system that has come up through leveraging.

While each step of lending and borrowing is orderly and contracts are written for each of them, reversing the transactions is not that simple because based on any one asset there are many other layers of borrowing and lending. A limited

disturbance at one point alone may be tackled by some substitute for that particular asset when trust prevails. However, when disturbances take place at a large level and require many interlinked transactions to be simultaneously reversed then the question of trust becomes crucial because without that there can only be a collapse of the system rather than a simple step by step reversal.

Referring to the equation for financial assets, contracts for FA exist and entities hold them as their wealth/assets. These are deflated because the demand for them has collapsed; they only have a notional price, close to zero.

Depending on the leveraging, g , if asset price fall (i) is greater than $1/g$ (see section III. a), the margin on the basis of which the asset was held, then the financial entities would lose their entire capital and become bankrupt. If the price fall is larger, then the crisis would be even deeper. In the circumstances trust cannot be restored.

Every business entity has assets and liabilities on its books. As asset prices collapse, one side of the books decline in value while the liabilities side remains unaffected so that the accounts become unbalanced. The financial entity appears to be bankrupt or close to it.

Further, all transactions consist of two sides – the buyers and the sellers. In the case under discussion, one side of the transactions breaks down on a large scale. Everyone is willing to borrow but not lend since one is not sure if the borrower would be able to return the amount – risk is seen to be large. Thus, even if the government is willing to provide the institutions liquidity (money) they would not wish to lend because they do not know who to trust.

More than in the case of physical systems where entities have no consciousness, there is consciousness in the individuals (and therefore in the institutions) making up society and this makes systems left to themselves far more irreversible. In the above example of expansion of gas, there is Brownian motion which leads to irreversibility but that is a mechanical process. In the case of society, people are not automatons but have consciousness and learn from mistakes. The process is a deliberate one and not a random one and action may be coordinated in the same direction, perhaps the wrong one, so that reversing situations becomes even more difficult.

The money multiplier ' m ' collapses to almost one due to the lack of lending and borrowing amongst the economic agents. All financial players try to move out of various assets and into money, and the public does the same. Recent reports

suggest that liquidity has sharply risen in the US economy. The asset prices not only collapse, a mismatch takes place between the assets available for sale and what the financial agents want to hold.

In brief, as trust breaks down in the financial system it not only affects the financial multiplier (f) which tends to zero but also the money multiplier (m) which tends to one and government cannot effectively tackle this collapse. The normal functioning of the economy gets affected and production is set back.

V. b. Limits to Government Intervention in a Crisis: Asymmetric Multipliers

Government bail out through capital injection and other steps may also not work because the losses can keep mounting (See foot note 4). After all, the government take over of assets would be a fraction of O_a while the need is for a multiple of O_a and possibly as much as, (i. g. O_a), the value of assets created at the peak of the upswing, where i^* is the maximum value that i reached .

Can the government's buying of assets and provision of liquidity stem the decline? Not really since the asset base that is collapsing (FA) is far too big for any normal operations. The Central bank can only intervene in the process of money creation (M) but has no instruments for intervening in the financial asset markets which are unregulated or minimally regulated. It cannot recreate g which collapses in a crisis. If the leveraging was say 33 times, then what the governments can provide, even if they want to, is only a tiny fraction of the amount by which the assets lose their value. Hence the collapse cannot be prevented.

In a deep crisis, since the money multiplier (m) collapses to one and the gearing ratio becomes inoperative, the government has to intervene at each step of the entire chain and reestablish the value of each of the assets (FA) that were created prior to the crisis, otherwise some financial entity or the other would go bankrupt.

To hold up the system the government would have to buy each asset at the price it was at when the crisis started. The Central Bank would have to recreate the multiplier which created the money supply by releasing a multiple amount of cash that it used to release in the past because effectively the multiplier has collapsed to one. It would appear that the government would have to take over the entire financial

market and replicate its functioning which seems will nigh impossible and may involve moral hazard.

If the government or some agency it sets up buys the financial assets at the original price, they would be subsidizing the seller and themselves making big losses. The original price of the assets at the start of the crisis (i.g.Oa) was notional and not necessarily realistic.

If the agency buys these assets at the much lower current price then they are setting the new price and all other prices would also fall to that level. Thus, institutions would suffer massive losses, would become illiquid, their entire capital base would be wiped and they would go bankrupt.

In brief, there is an asymmetry in the situation when the financial bubble grows and when it collapses and this prevents successful government intervention. While the rise is gradual the fall is sharp. Trust and confidence amongst the financial entities breaks down in the fall and that is what leads to the collapse (Goodman, 2008). The problem is irresolvable when trust disappears at a systemic level at the peak of an asset bubble.

VI. CONCLUSION

This paper, using a *simplified* dichotomy between normal money markets and the financial markets, has analysed the reasons for the recent dramatic collapse of the latter in the US and elsewhere. It also analysed why the unprecedented government intervention running into trillions of dollars has not been successful. It suggests that the crisis in the financial markets is not only due to the structure of these markets but its origins lie in the systemic problems confronting the US and the world economy. The origin of the crisis is not just in the sub-prime housing mortgage crisis as many seem to believe. In fact, the sub-prime crisis is itself a manifestation of the bigger issues confronting the US economy in the last few years.

It is shown here that unregulated financial markets using a high degree of leveraging yield high rates of profits, so attract more and more funds leading to larger capital gains and, therefore, to higher profitability. But, it is shown that such markets are inherently unstable since there is no resting place. They can either go up or down. The trigger for the present decline originated in the wider economy which led to the sub-prime crisis.

This paper points to the contrast between the regular banks regulated by the Central bank and the other unregulated financial institutions dealing in financial assets. Further the use of the CRR leads to a stabilizing influence since a limited amount of money supply gets created by the banks while in contrast, for the latter, the absence of any CRR kind of requirement results in destabilization in both directions – during the growth of the financial bubble and its deflation.

Financial assets that get created are a multiple of the assets in the real economy (the base of creation). Further, it is the latter that determines the capacity to pay the profit to the former and since it is being outstripped in size, a crisis is inevitable unless the financial sector forms a closed loop with profits reinvested. This also suggests that since more and more surplus had to be generated, even sub-prime assets became acceptable to the financial sector.

It is pointed out that in a crisis, the money multiplier, the financial multiplier and the velocity of circulation collapse. It is pointed out that there is an asymmetry in these variables. When the bubble grows it does so in an orderly fashion via these variables but in a financial collapse the underlying mechanisms collapse and most importantly, the money creation mechanism stops working. Financial entities find that their assets collapse in price and their capital gets wiped out in no time. How does this happen?

Financial institutions have assets and liabilities on their books. In a crisis, while the liabilities remain, the assets collapse in value and since they are a multiple of the capital of these institutions, they have the potential of bankrupting these institutions. Since even non financial institutions may have invested in financial instruments through leveraging, they may find themselves close to bankruptcy and this would affect production in the economy. Entities that looked healthy at one point of time go bankrupt quickly.

Government actions cannot correct for the losses that the market creates since the former is only able to provide temporary relief by infusing relatively small sums into the collapsing asset base of the regulated institutions. The government has instruments to intervene in money creation but not in the leveraged financial markets so it cannot prevent the financial markets from collapsing and as they collapse, the money markets also follow suit. Since trust breaks down, the government is not able to effectively intervene and revive the money markets either. The economy is in a kind of a 'liquidity trap'. The article suggests that the structural

problem of asymmetry cannot be overcome once a decline sets in. Deregulated financial markets are in that sense not self-correcting.

The prevailing view amongst the policy makers and the experts is to save the financial system and that whatever resources are necessary to do so should be found. But, the current problem confronting the world is systemic and its solution is not just in the solution to the financial sector but requires a revamp/reform of the world economy where all the interlinked problems can be addressed simultaneously.

While the food, energy and other commodity price rise is being taken care of by the sudden drop in demand due to the deepening recession, inequality and slowdown is not being tackled with the same urgency as the financial crisis. This is an obvious consequence of the bias of those who dominate the world economy. While the financial system and the real economy obviously interact and have an effect on each other, giving priority only to the former will not lead to a solution to the current financial problems.

The paper highlights the helplessness of the governments in successfully tackling the crisis because they would have to revive the money markets so that the money multiplier begins to be operative and transactions start taking place. Both these tasks are not in the realm of government actions since these are determined by institutional practices and the role of the markets cannot be replicated by the government since it cannot retrace each and every step involved. When trust breaks down, the government can try to restore it but the attempt may not be successful since the problem is systemic, as at present. The multipliers that have stopped functioning cannot be revived in any orderly fashion.

Some obvious consequences of the financial crisis due to the massive uncertainty that it has created are: Slowing down of investment, emergence of spare capacity in industry, economic entities going liquid, difficulty for businesses in obtaining credit for production, possibility of deep recession or depression, rise in unemployment and possibility of protectionist measures by nations to prevent their economies from declining further.

While matters can go from bad to worse with the collapse of the financial markets, the governments have a role in preventing the real economy from collapsing (Kumar, 2008e) by investing aggressively into it - in social and physical infrastructure, achievement of MDG goals, etc. This would also prevent unemployment from rising too much and keep social tensions in check. There is also

a need to change the accounting practices of firms in the real economy so that their capital does not erode due to the practice of mark to market. The governments also need to move against tax havens and the black incomes generation.

It could be argued that the current financial crisis is a result of deregulated financial markets or the raw functioning of capitalism, based on the idea of 'free markets', and in that sense it is a crisis of a particular form of capitalism. However, it maybe argued that this tendency towards raw capitalism is inherent in capitalism and especially to the extent the financial bubble was pricked by developments in the wider economy, the crisis is a generalized one.

The paper also points to the importance of the time frame of the working of the financial systems. While the going was good, all caution and criticism of the unregulated (free) markets was ignored so that the crisis has hit suddenly and with an uncontrollable force. The failure of the unregulated markets would have wider philosophical repercussions. The idea that 'free markets' are best for society would weaken but the limitations of government in correcting their flaws once the situation becomes grave also become clear. So, the search for alternatives to the current development path are likely to receive a fillip. Further, notions of atomistic individuals and rational individuals maximizing their gains are also in for a rethink. Big changes are in the offing in the coming years and we need to see that they are in the correct direction.

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End Notes

1. Various statements made by the US Treasury Secretary, presumably one of the best informed experts, show how he missed the evolving crisis. (NYT, Interactive, 2008).
2. The initial package of \$700 billions passed by the Congress on October 3, 2008 was a give away to the Wall Street firms for buying their collapsing assets. This plan was changed when the situation did not seem to be coming under control and it was decided to infuse capital into the banks as was being done by the British government. There was resistance to regulation amongst

the bankers and the Treasury Secretary almost agreed to their demands. They also did not want their high salaries and severance pay to be curtailed, etc. (Landler, 2008)

3. In various ways, governments across the globe have committed around \$ 5 trillion by now and the fiscal deficits of various governments will now be double and triple of what was planned at the start of the year. It is an interesting contrast that when in the developing countries, a crisis has resulted in large fiscal deficits, they were lectured for imprudence, etc. Now no questions are being raised and help is being extended primarily to the financial sector, a votary of fiscal discipline, on a vast scale. In India, the ruling elites have resisted what they saw were give aways to farmers, government employees, etc., even though these are chicken feed compared to what has been doled out to businesses (See Kumar, 2008b) or is now being offered to them in various ways.
4. When the US government announced the \$168 billion tax stimulus, it was considered to be huge and adequate. However, in Kumar (2008a) it was argued that this was 'too little too late' given the magnitude of losses already suffered. The markets welcomed this and for a while the Dow Jones index stabilized and even moved up. But things started to deteriorate from July onwards as financial institutions started to falter. When on Sept 18, the \$700 billion bail out was announced, again it was thought to be huge and markets rose but in Kumar (2008d) it was argued that this was inadequate given the situation. In Kumar (2008e) it was argued that policy makers need to confront the reality and let the public know the true picture and piecemeal approach will not work.
5. SEC has now admitted that there were fundamental flaws and that self regulation does not work. In fact, it is also suggested that the changes made effectively thwarted the European Union also from regulating the US Investment banks (Labaton, 2008a).
6. For instance, in the recent period, FIIs have sold stocks in India to take money back to their parent companies. So the stock market in India has been experiencing a free fall. Money from real estate is also being withdrawn and its prices are falling. These actions have created problems for other financial entities and there seems to be a panic.

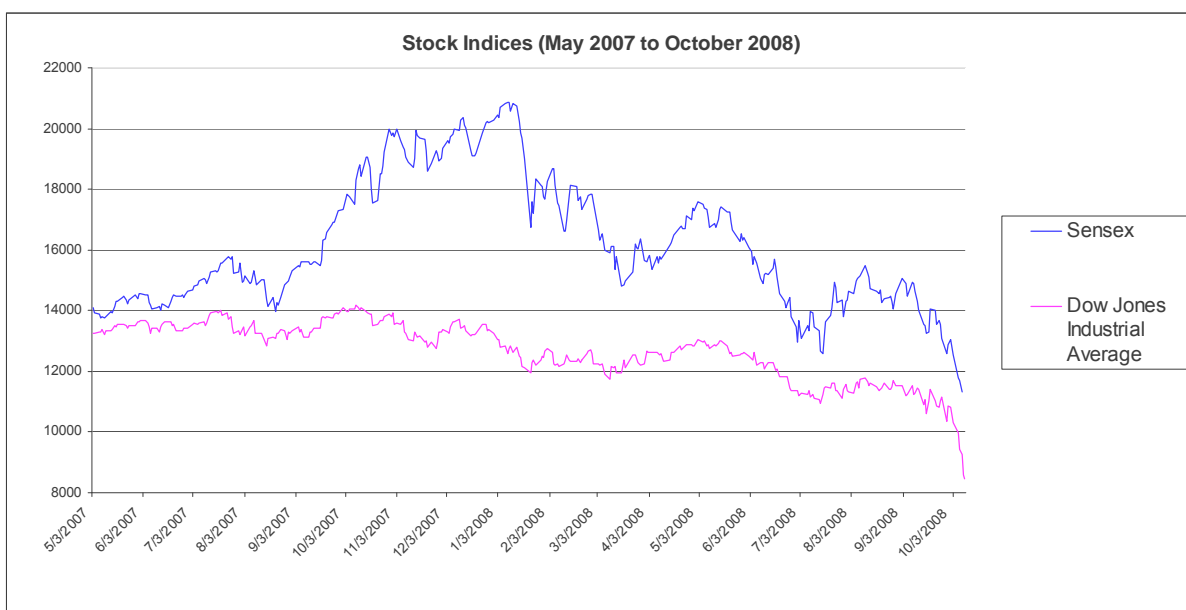
7. Economic Report of the President 2008 on US economy shows that net savings have declined from 5.8% in 2000 to 1.9% in 2006 and they are in the range of 1 – 2 per cent in each of the quarters in 2006 and 2007.
8. Sectors linked to investment, real estate and finance are reported to employ around 10 per cent of the private sector's labour force but they are said to yield about 40 per cent of the total profits.
9. The Courts have also adopted a more anti-labour view and enabled labour to be squeezed.
10. The USA is heavily dependent on inflow of foreign capital since its savings propensity is low. 5% of US GDP is provided by foreigners and they hold \$16 trillion of US assets. Foreigners own about 30 per cent of the US corporations and about 60 per cent government bonds. This was made possible due to the dollars acceptance everywhere and its functioning as virtually a reserve currency.
11. Table on Receipts and Outlays in Department of the Treasury and Office of Management and Budget. (2008) shows that the Defense Budget has been on the rise, rising from 3% in 2000 to 4.5% now. If the expenditures on internal security and intelligence are added, the drain on surplus generation in the US economy is clear.
12. In the recent purchase by the government of the Fortis and ABN AMRO Banks in Netherlands, apparently, dossiers have been seized by the Ministry of Finance showing that black money was being routed through them. Fortis is reported to have 700 subsidiaries in tax havens. Thus, banks themselves seemed to be encouraging the movements of funds (legal or illegal) and helping circumvent regulations. The government has however assured clients that banking secrecy will be observed, that is, information about their possible illegal dealings will not be made public.

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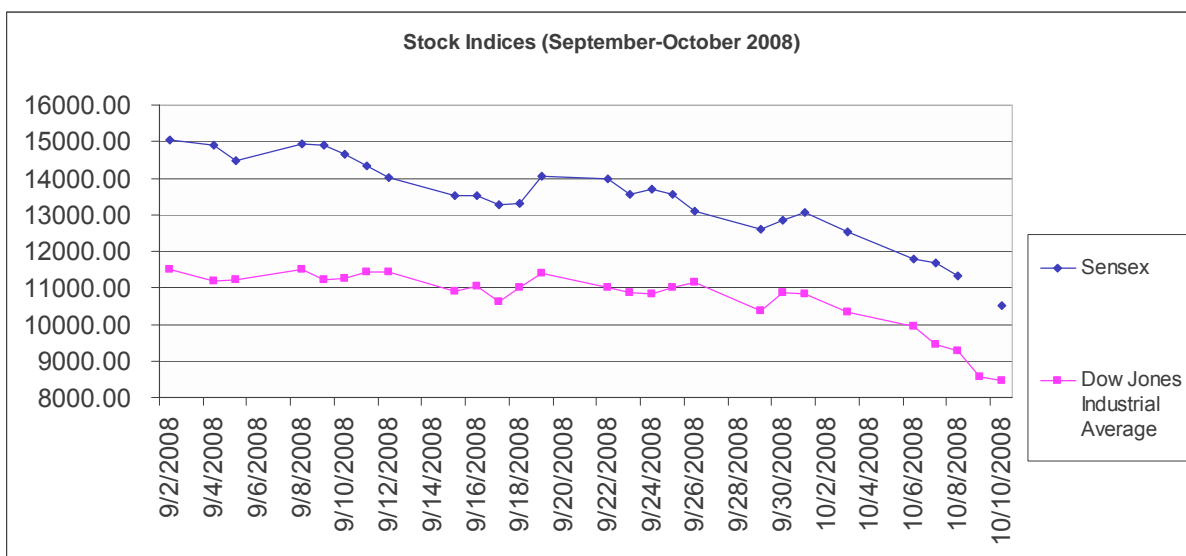
Graph 1
Dow Jones and Sensex



Note: Sensex has followed the trend in Dow Jones, except between Nov. 2007 and January 2008.

Sources: As listed under Graph II below.

Graph II
Dow Jones and Sensex



Notes: 1. The markets have repeatedly risen when some good news came like, on Sept 5, 2008, Sept 16, 2008, Sept 18, 2008, but only to fall again like, on September 9, 2008, September 12, 2008, September 29, 2008 and October 2, 2008.

2. The overall trend is unmistakably one of decline.

3. Gaps in the graphs are due to the market closing on those days.

Sources: 1. http://www.econstats.com/eqty/eq_d_mi_3.htm, for Dow Jones Index and

2. Weekly Statistical Supplement, Reserve Bank of India for BSE Sensex.