Economics of Banking and Finance Markets
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Lecture - 34
Financial Crisis-I

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Hello everyone, welcome to this session. In the previous session, we have discussed what are the factors affecting financial crisis and we had discussed 5 key points. The remaining one is the government fiscal imbalances. And this point is more relevant for developing countries and emerging market economies. So, after discussing this point, then we will see the theoretical framework or the structure and the sequence of events in the financial crisis.

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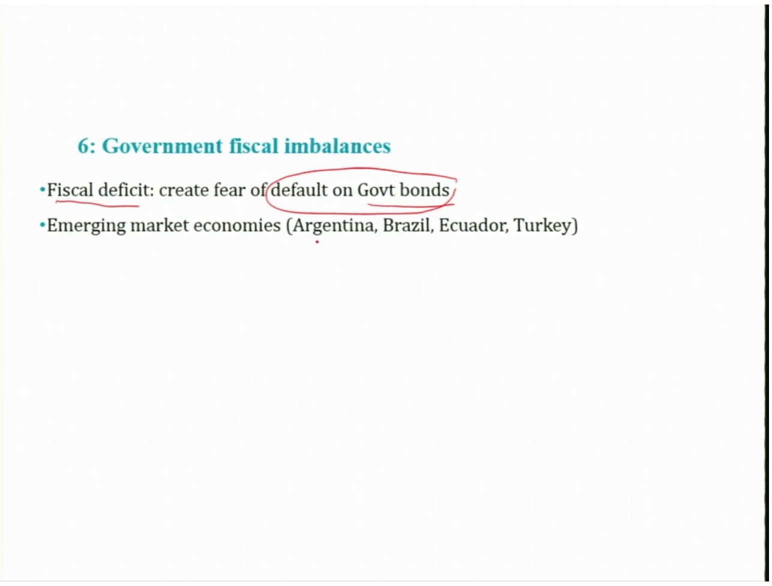

So, coming to this part, the government fiscal imbalances especially when government deficit happened; that means, government deficit you know that the borrowing requirements of the government, when the government expenditure is greater than the government revenue. So, as a result, you know that when the fiscal deficits keep on increasing over time, then you know that most governments they finance, they raise the fund to cover up the fiscal deficit by borrowing from the market.

And borrowing from the market means, mainly by issuing bonds. So that means, if the government fiscal deficit keeps on increasing, they will be supplying more and more bonds in the market. And a fear will be popping up in a way that there will be high possibility for default on government bonds.

So, normally we believe that government bonds are low risk, that the default risk is very low. But, especially in developing countries and other emerging market economies when this fiscal deficit keeps on increasing, there is a fear of default on government bonds. It had happened in several countries as well, that means, they were unable to pay back the debt that they had raised through the bonds market. So, especially emerging economies like Argentina, Brazil, Turkey; these countries often face this kind of problems.

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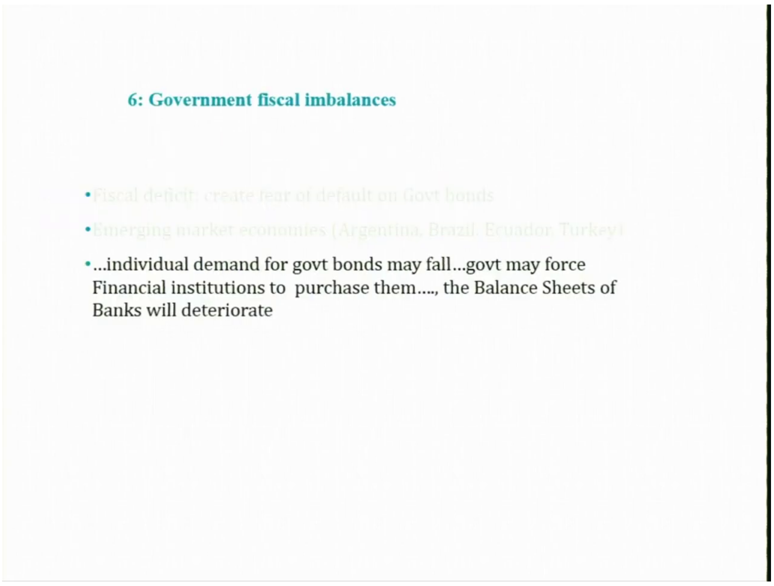

So, as a result let us see what is going to happen, if there is increase in fiscal deficit, that is, government fiscal imbalances, then there is fear of default risk, so, individual investors and institutional investors will respond by a decline in the demand for government bonds.

That means, the riskiness of government bonds increases, and in one of the sessions we have seen that when the riskiness of bonds increases, its demand declines. So, individual institutional demand for government bonds decline. Then, in this case, government may force financial institutions to purchase them. Especially, in many developing countries they have public sector banks, public sector financial institutions and they will be forced to purchase the government bonds.

Then, we know that, as a result, if these institutions are forced to purchase government bonds; but it may not be their right investment decision, that may not be their correct portfolio allocation of their resources. They may have to distribute their fund in a way that they must meet liquidity, profitability, all these parameters they must fulfil. But, if they are forced to invest more in government bonds, that may not be their right investment decision sometime, then as a result, you know the balance sheets of banks will start deteriorating.

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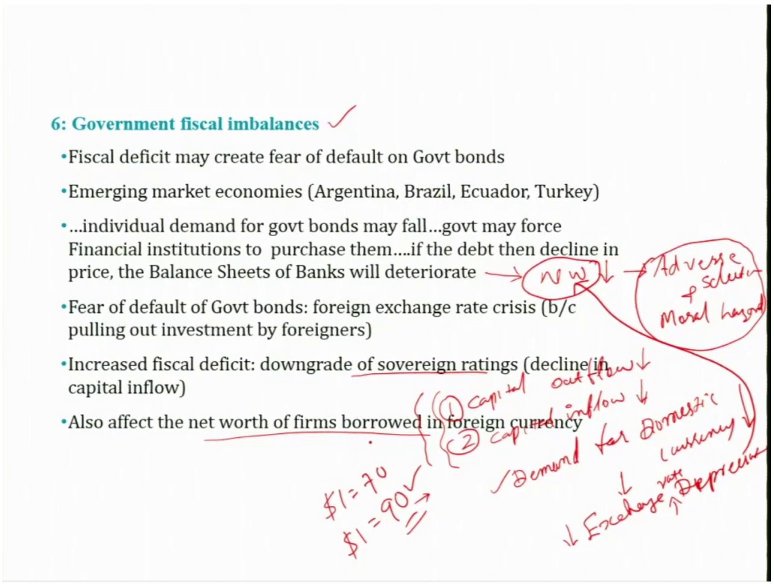

So, now recall what we have studied in the previous class session; that means, when the balance sheets of banks deteriorate, then you know that the banks' net worth will be declining. And this will lead to the adverse selection and moral hazard problems.

And second one is, if there is fear of default of government bonds, the foreign investors will reduce their demand for these bonds. In general, foreign investors do invest in government bonds of other countries. Suppose India's fiscal deficit, suppose it keeps on increasing then; obviously, you know that those who has invested in Indian government bonds, they will pull back their money; that means, capital outflow will happen.

Similarly expected capital inflow that also will decline. That means, who are supposed to make new investment in Indian government bonds also will decline. So, what would happen, as a result? You know that, as a result, the demand for Indian currency, that is, demand for domestic currency decreases.

So, as a result you know that exchange rate depreciation will happen. So, due to increase fiscal deficit, an exchange rate depreciation will happen.

One more point is that, because of increased fiscal deficit, there will be a downgrade of sovereign ratings as well. One of the parameters that normally used for the credit rating agency, sovereign rating agency is the fiscal deficit. When the fiscal deficit increases, they downgrade the sovereign ratings, that the governments rating, will be downgraded. And, as a result again the same things which I mentioned here, the decline in capital inflow will happen. So, the further outcome will be that the demand for domestic currency will decline, and exchange rate will decline, exchange rate will decline. This also will, this will depreciate.

So, that means, when the exchange rate depreciates, suppose initially 1 dollar is equal to 70 rupees. And suppose due to this when 1 dollar is now 90 rupees and then, you know that, as a result the debt burden increases of firms who had borrowed in foreign currency. That means, again the balance sheet will get affected, the net worth of the firms decreases.

So, that means, the further effect, the net worth of the firms declines, as a result we can see that this will lead to financial crisis.

So, any of this can be the seed for financial crisis. Maybe asset market effects, we can see that if there is a supply side shock, that the energy price, that the supply side shock for example, the increase in the price of oil. It would affect the automobile sector and especially in the consumer industry who are is producing the consumer goods and services.

The consumer industry also will get affected you know that because of that their sales, their level of the volume of sales will decline because the increase in the cost of production. And, as a result you know that the dividend will decline, and their stock price will decline, and this will lead to asset market effects. And may be due to increase in interest rate, maybe due to some changes policy, sometimes due to an unintended consequence of monetary policy, financial crisis can erupt.

Maybe, suppose there is inflation, and as a result if they reduce the money supply, then interest rate can increase. And, similarly, in balance sheet of a bank, suppose government asks the firms to make prioritize lending, then as a result they may have more NPAs. And it will lead to a deterioration in the banks' balance sheet, banking crisis.

Actually, these kinds of things are happening often, but what the thing is that it may be minor, maybe immediately the policy maker recognize it, and they do some policy intervention, then it will be neutralized. So, this kind of things are happening, but when it out of control, when it becomes considerable, then it can lead to a financial crisis. So, these are the factors that we discussed here.

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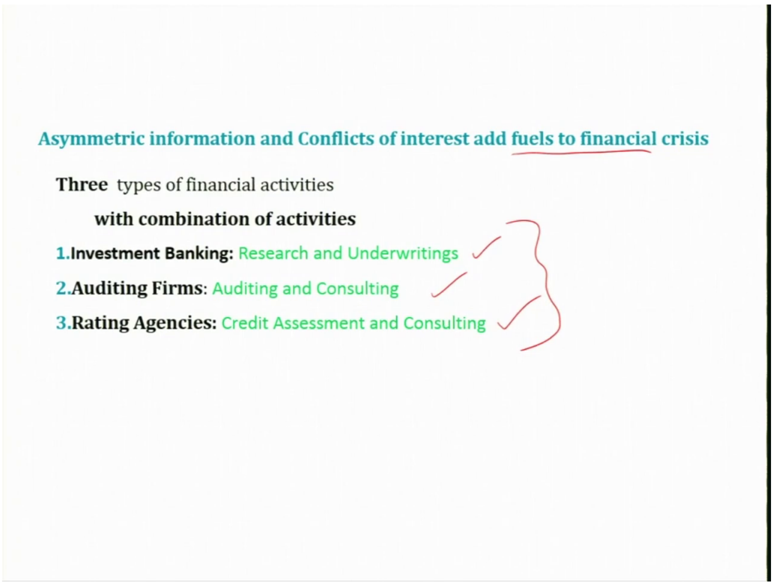

So, in addition to this, the asymmetric information problem that we had discussed in the previous sessions such as the conflict of interest that is happening in the investment banking, auditing firm, rating agencies; these add further fuel to the financial crisis, in addition to the factors we had discussed so far.

So, in addition to this, the conflict of interest and asymmetric information problem that also plays a crucial role. In 2007-8 crisis, this conflict of interest also played a crucial role in aggravating the problem. Now, after discussing the factors that will affect affecting the financial crisis, let us now see what the sequence of events in a financial crisis are.

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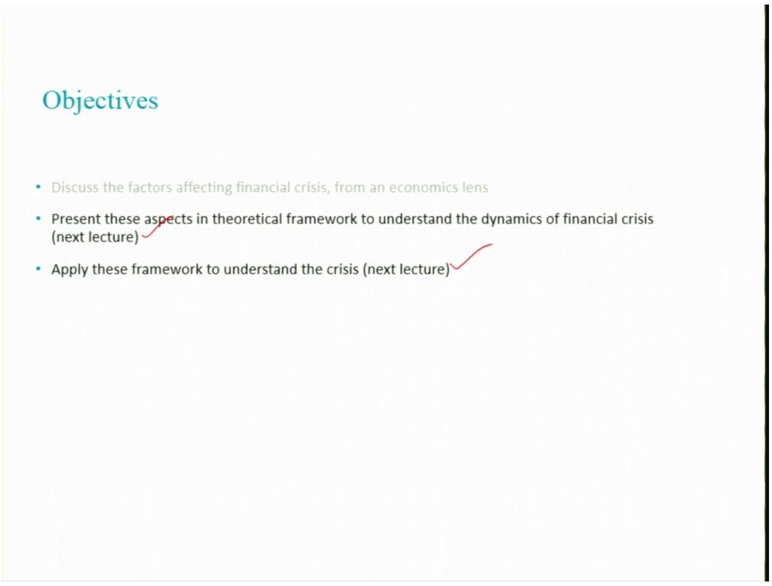

Here, we are going to develop a theoretical framework to understand the dynamics of financial crisis. So, here we will see what the stages are. At stage 1, by including the factors that we discussed, how the financial crisis starts. And, in the next session we will apply this framework to understand the crisis, financial crisis of 1929 and or more elaborately of 2007-8 crisis.

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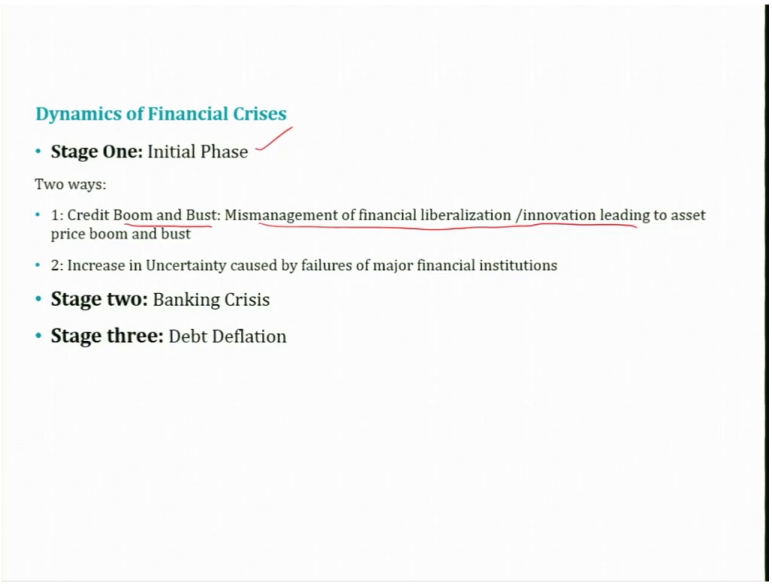

So, these are the dynamics of financial crisis, we can classify it into 3 stages.

In the stage 1, we can call it the initial phase, mainly there are two ways in which a financial crisis can start. One is called credit boom and bust. This is mainly because the mismanagement of financial liberalization or liberal innovation leading to asset price and bust.

So, in this point, we will be discussing how financial innovation or when countries engage in financial liberalization; that means, the elimination of restrictions on financial market and institutions initiates financial crisis. That means, the particularly when introducing new types of loans or financial products which is known as financial innovation that in fact, eliminates many of the financial market restrictions in fact.

So, in the long run, what is going to happen that in the long run financial liberalization promotes financial development and engages a well-run financial system that allocates capital efficiently. But, in the short run, we are going to see that it is going to create some negative effect. So, before we discuss this fact, let us see what the other stage are. And stage 2 is considered as banking crisis and stage 3 is debt inflation.

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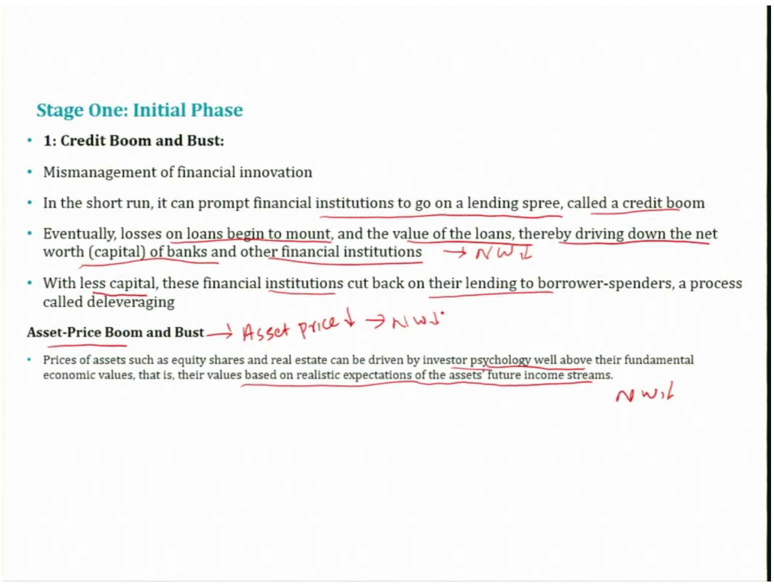

So, let us see with stage 1. As I mentioned here, financial innovation is one of the responses to avoid restrictions and regulations, in the long run is going to benefit the economy because anyway these are all innovations. So, in the long run we can see that we can anticipate that capital will be used more efficiently. But, in the short run, it can prompt financial institution to go on a lending spree called a credit boom.

So that means, the dark side of financial liberalization is that it can prompt financial institution to go on lending spree; that means, lenders may not have the expertise or the incentives to manage risk appropriately in these new lines of business. And, even with proper management, credit boom eventually outspread the ability of institutions and government regulators to screen and monitor credit risk and leading to overly risky lending.

So, as a result what is going to happen, after a period eventually the losses on loans begin to mount. Because, when they are making loans to new lines and even giving loans to high default risk, to the high-risk individuals and institutions, eventually you know that losses on loans begin to mount and thereby drive down the net worth of the bank and other financial institutions.

So, simply we can say that when loans increases, when NPAs increases, then the net worth of the bank will decline. So obviously, bank will respond to cover up this loss and you know that as a result, the capital adequacy ratio, leverage ratio, it will get adversely affected. And, then with the less capital, what will they do? These financial institutions cut back on their lending to borrowers-spenders, a process called deleveraging.

They realize that they are making losses on their loans, they try to cut back on their lending to borrowers-spenders. it is a process called deleveraging. So, as a result, the flow of fund in the financial system starts declining.

Similarly, another related thing is that there will be asset price boom and bust.

The prices of assets such as equity shares and real estate can be driven by investors psychology; that means, the investment made by people is not based on the economic fundamentals of that firm or the sector; instead that it will be driven more by the investor psychology. Maybe, because of mostly incentivized by the financial innovations as well and then their values based on the realistic expectations of the assets of future income stream.

That is, based on that expectation they will be making investment. As a result, the rise of asset price above their fundamental economic values is an asset price bubble. The asset price bubble happens because when the market price of an asset is above their economic fundamentals.

Then, you know that when the market price of an asset is above the fundamentals, and after certain point of time; obviously, there will be a bust of this bubble. When the bubble bust and asset price realign with fundamental economic values, and then stock and real estate price tumble, companies see their net worth is dropped. Again, they see that their net worth declines.

You know that this asset price decline this is because of the asset price boom in the beginning. And, when it busts, then the asset prices decline. This would lead to decline in the net worth of the firm and then the firms will be more vulnerable to again the asymmetric information problem, that is, to adverse selection and moral hazard.

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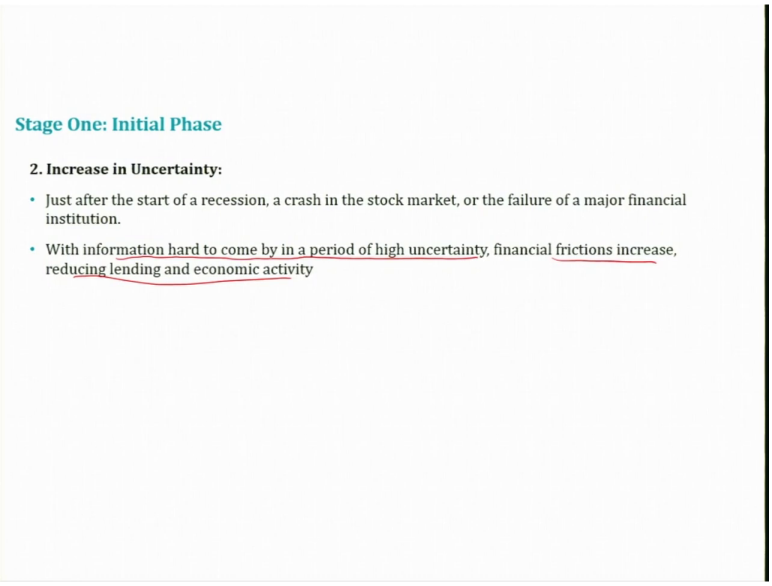

In addition to this, increase in uncertainty in the economy also prompt in the initial phase; that means, just after the start of a recession, suppose a crash in the stock market or the failure of major financial institution, all these would increase the level of uncertainty in the economy. So, as a result if there is more and more uncertainty in the economy, then information will be very hard to come by in a period of high uncertainty.

Then, this would lead to financial friction, the financial friction increases, which would further lead to the asymmetric information problem, which will further reduce lending and economic activity. So, these are all the factors that may normally happen in the stage 1 of a financial crisis.

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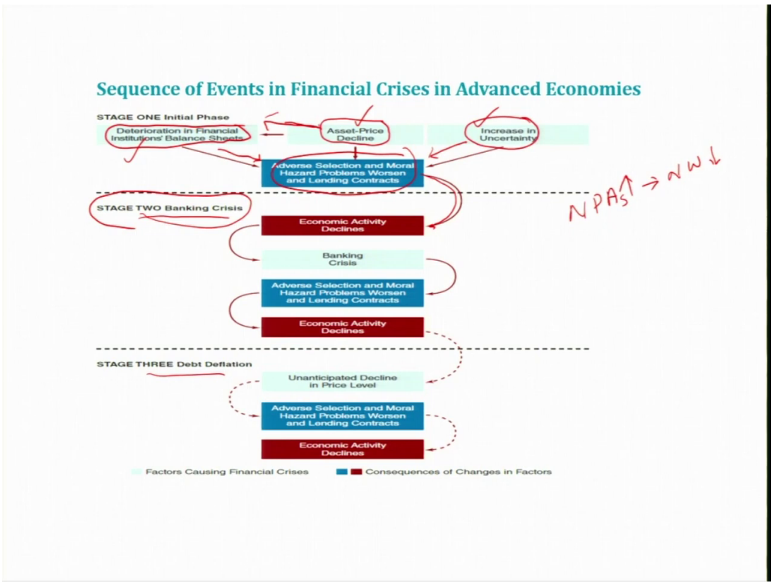

This is a framework that we discussed here. So, here the this is the stage 1, the stage 1 is this. Stage 2 is banking crisis, then stage 3 is bank deflation.

The financial innovation, this is going to lead to credit boom. But, after certain point of time there will be asset price decline because of the bust in the asset bubble. Then, this would lead to deterioration in the bank financial institutions balance sheet. Similarly, another point that we discussed that the increase in uncertainty, this will directly lead to aggravating the adverse selection and moral hazard problems.

So, coming to this part, this is the first part, the asset price decline. Then, this will lead to deterioration in financial institutions balance sheet, then the net worth of the firm will decline. And, then as a result, again the problems of asymmetric information, this problem get worsens. So, two ways, one is asset rise and second is uncertainty. Finally, all these will lead to aggravating the adverse selection problem. Then, this will lead to further tremor in the economy, in the system.

Because of this, the economy will enter the second stage, which characterized with a banking crisis. So, banking crisis, what we can see that due to the deteriorating balance sheets and tougher business condition lead some financial institutions into insolvency which happens when their net worth becomes negative. So, here many firms who have borrowed from the bank, they are unable to pay off their loans. Then, as a result you know that the banks will be ending with many NPAs, Non-Performing Assets.

Because many firms, because of their financial condition deteriorate, they may not be able to pay back their loans. So, as a result banks NPAs increase; that means, banks net worth again, here, banks net worth declines. So, what would happen if the banks net worth declined? As we have seen in the previous session, some banks will not be able to pay off the deposits or other credits, then they will go out of business.

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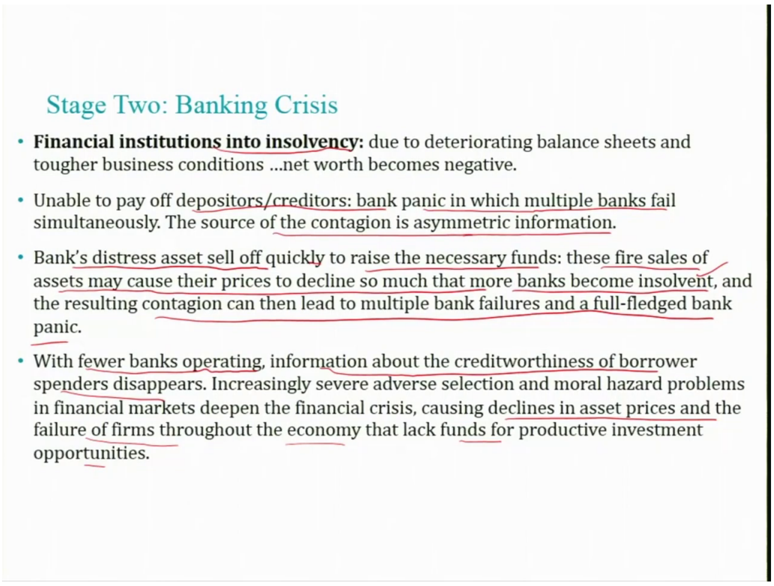

So, let us discuss this point in detail, the banking crisis. So that means, when financial institutions fall to insolvency, then what we say that many firms will be unable to pay off deposits. And, then as a result, you know that multiple banks fail simultaneously. This is the point that we have seen in the one of the previous sessions, and it will exactly happen here.

That means, people will be running to bank to withdraw their deposit, because again the asymmetric information problem is there. They cannot really distinguish which bank is good and which bank is bad here. So, in this case, this is having a contagion effect, source of this contagion is nothing, but asymmetric information. And, adding further fuel to this, you can see that many banks see that there is a deposit outflow from their bank.

So, as a part of their liquidity management, to pay back their deposit they will engage in banks distress sale of their assets. That means, they engage in an asset sell that is nothing, but banks distress asset sells off to quickly raise the necessary funds. So, what would happen as a result? Because they are suddenly selling, they are making a distress sale of their assets. So, these fire sales of asset, which will further cause damage; that means, it may cause the prices to decline so, much that more banks become insolvent.

Because they are selling in a distress condition, then you know that oversupply of assets. And obviously, the buyers also will doubt what all their assets, maybe most of their assets will be loan, loan resale. Then, the loan resale, they will be getting less value. The price they are getting also will be very less and they will be eventually ending up with the lots of loss.

And then finally, this will lead to becoming banks insolvent and resulting contagion can then lead to multiple bank failures and a full-fledged bank panic. So, this would lead to banking crisis, aggravating the banking crisis. Then, you know that the sequence of events, if you read it in proper line, we can see that there will be fewer banks operating as a result. The information about the credit worthiness of borrower spenders disappears.

And increasingly severe adverse selection and moral hazards problems in the financial markets deepen the financial crisis and causing declines in asset prices, and failure of firms throughout the economy that lack funds for productive investment opportunities. So, this is the full-fledged in the second stage 2, financial crisis will be characterized with a full-fledged banking crisis.

Now, let us move to the third part in the stage 3. Here, in the second stage, we have seen this one that banking crisis. And this again led to further aggravate the moral hazard problem, adverse selection problem. Then, overall, the lending declines, when the lending declines, then the productive sectors which can make the best use of capital, they will be having deficiency of capital. It will be very expensive for them to borrow and whoever is remaining bankers in the market, they will be charging high interest rate. Then, as a result overall borrowing will become costly.

And as a result, the economic activity will decline. So, when the economic activity declines, we can see that the declining GDP, declining employment, and overall economy is moving to a kind of recessionary stage. Then, this will lead to entering the third stage, that is called debt deflation. So, here in the debt deflation, we are going to see the unanticipated decline in price level.

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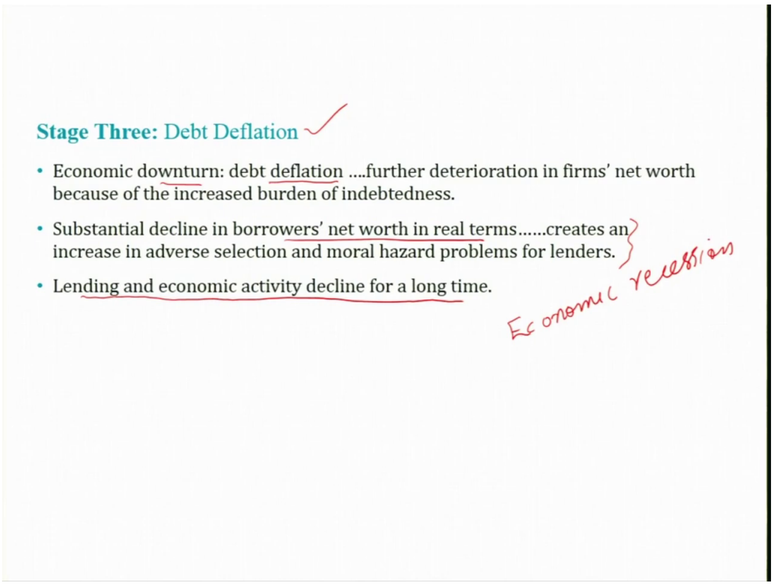

So, let us see how this would create problem. So, because of the economic downturn, there will be debt deflation. Debt deflation means again the further deterioration in firms' net worth because of the increased burden of indebtedness. So, the substantial decline in borrowers' net worth in real terms happen here and it increases adverse selection and moral hazard problems for lenders.

And the point here is that the debt deflation happened here because when the economic activity declines, then there will be an unanticipated decline in the price level. Then, as a result when there is unanticipated decline in the price level, then you know that debt servicing become expensive.

The repayment of loan and its interest rate increases the burden, the debt payment burden increases. And this would lead to further lead to borrowers' net worth, decline in the borrowers' net worth in real terms. So, this again, we have seen, we had discussed these multiple times that declining net worth leads to worsening of adverse selection and moral hazard problem.

So, in the long run, what is going to happen? In the long run, lending, and economic activity decline. This is nothing, but the stage 3; economy will be ending up with an economic recession. Economy in a recession; that means, the volume of economic activity will be very low. And it would lead to overall decline in economic activity; that means, low GDP, low employments etcetera.

So, these are all the 3 stages, that we just now discussed. And, in the next session we will apply this framework and all the factors that we had discussed in the previous session to understand the 1929 Great Depression and 2007-8 financial crisis in detail and.

Thank you and see you in the next session.

Keywords: financial crisis, fiscal imbalances, default risk, stages of financial crisis, initial phase, credit boom and bust, asset-price boom and bust, banking crisis, debt deflation, great depression 1929-30