Economics of Banking and Finance Markets
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Lecture - 22
Selection problem in finance markets - II

Welcome to this session. In the last session, we have discussed the issue of asymmetric information and market failure in finance market.

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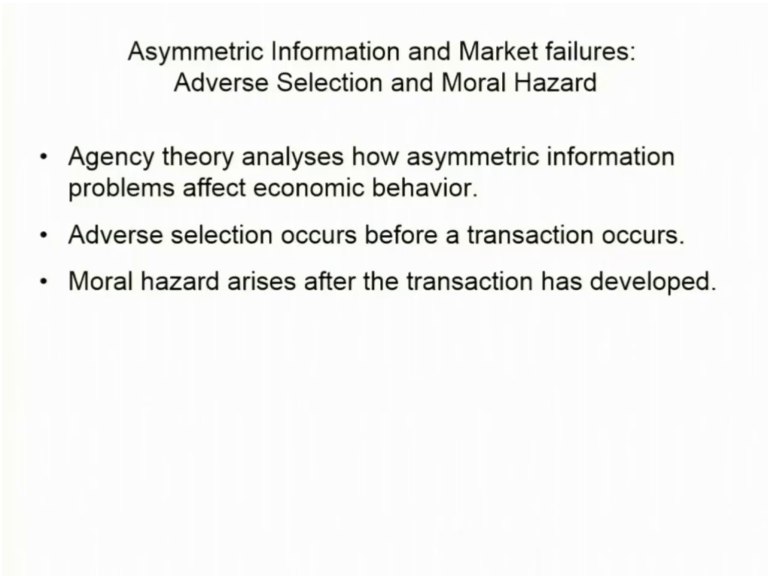

And, we introduced the concept called adverse selection, we discussed the concept in detail. And, we also discussed at that time, another concept called moral hazard, which we are going to discuss in detail in this session. But prior to that, we will complete the discussion on adverse selection.

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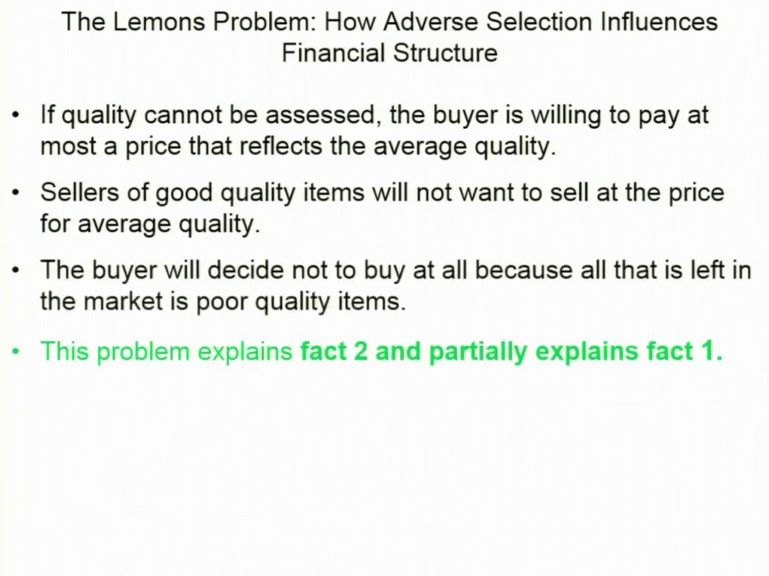

So, how does the lemons problem, that is, adverse selection influence financial structure. We had discussed in the previous class that if quality cannot be assessed, buyer is willing to pay at most a price that reflects the average quality. And subsequently we also we discussed this issue in the context of lemons in stock markets.

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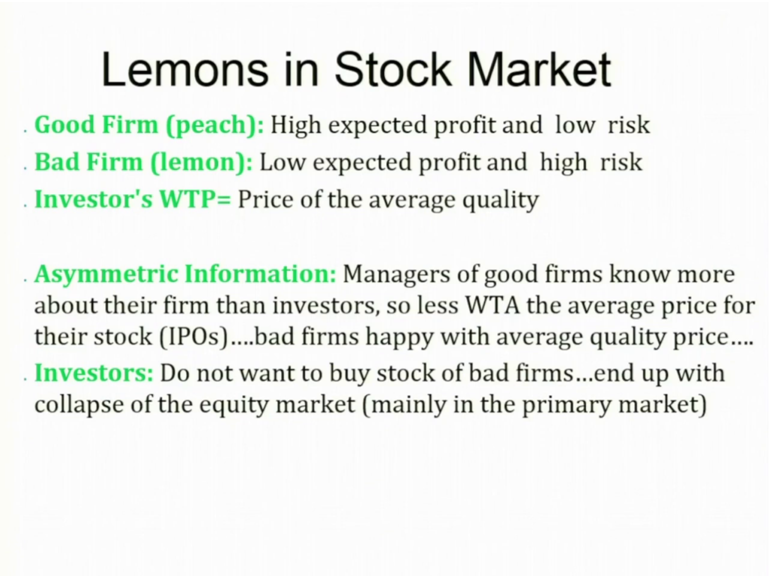

So, we have seen that there are firms, good firm, and bad firm. Suppose an investor cannot distinguish between good firms with a high expected profits and low risk, and bad firms with the low expected profits and high risk, and then this would lead to the collapse of the finance market.

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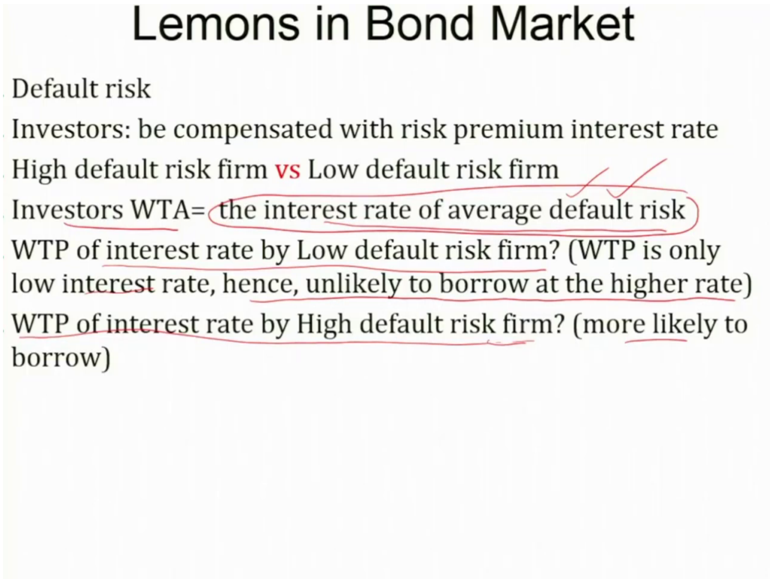

Similar problems can arise in the bond market as well. So, we have seen that one of the characteristics associated with the bonds is it is a default risk. So, what if an investor considers purchasing a corporate bond instrument from the bond market? So, we can see that the interest rate should be high enough to compensate the investor for average default risk of the good and bad firms trying to sell the debt, then only he or she is going to buy a bond.

So, investors should be compensated with the risk premium interest rate. So, we have seen that market comprised of firms with a high default risk and firms with a low default risk. And what we can see here is that the investors their willingness to accept is the interest rate of the average a defaults risk, that is the expected price that the a mean average of the interest rate of high default risk firm's interest rate and low default risk firm's interest rate.

So, how about the willingness to pay of the firms? Do you think that the low-risk firms are willing to pay more? No, because economic fundamentals, the default risk, is better for them, their default risk is the low and the project activities, the economic and project activities that they are going to undertake is also in a better condition. So, because of that the willingness to pay of interest rate by low default risk firm is the low.

Hence, when the market consists of both low risk and high-risk firms, the market interest rate is going to be the interest rate corresponding to the average default risk. Then, in this scenario, we can see that the firms with the low default risk is unlikely to borrow at the higher rate. For them, average interest rate is higher than their willingness to pay.

So, they think that they should be getting capital from the bond market at a low interest rate; that means, they will back out from the market. And, how about the willingness to pay of interest rate by high default risk firm? So, we know that they are already aware of their default risk, they are already high risk. They are already aware that the project activities that they are going to undertake is not in a better condition.

So, they will be happy to pay the average default risk premium interest rate, because actually they have to pay a high interest rate, but they will be happy to pay the average the interest rate corresponding to average default risk. So, what is going to happen here? You can see that if the market behaves in this way; that means, low default risk firm backing out from the market and then the market will be overrepresented by high default risk firm. So, eventually, you know that, at this high interest rate, only the firms with high default risk firms will be a prevalent there.

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The lenders also will be aware that the market is now dominated by only the high-risk firm, and they think that is better not to lend in this market. Even though they are getting high interest rate, but the risk is that, because the high default risk, there is no guarantee that they will pay back. In short, because of all these, the investors will not buy any bonds at all.

So, this problem explains fact number 2; that means, issuing marketable debt and equity securities is not the primary way in which businesses finance their operation. So, because of the asymmetric information and the resulting adverse selection problem this, in fact, explains fact number 2; that means, issuing marketable debt and equity securities is not the primary way in which businesses finance their operations. It also partially explains the fact that stocks are not the most important sources of external financing for businesses.

Because, we have seen that in the equity market, firms with high expected profit and low risk, they will not be getting the expected IPO amount.

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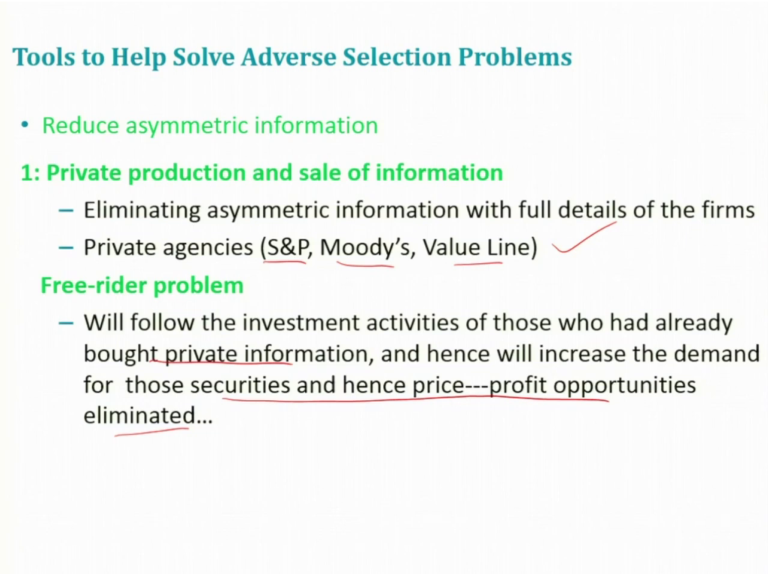

Let us now discuss what are the tools that can be used to resolve the adverse selection problems in finance markets. So, the solution to the adverse selection problem in financial market is to reduce the asymmetric information by furnishing information to people supplying funds with more details about the individual or firms seeking to finance their investment activities.

So, one way for saver-lenders to get this information through the private companies that collect and produce information distinguishing good firms from bad firms. Then sell it to the lenders or the demanders of bonds or the subscribers of shares-equities. One of the solutions here is private production and sale of information. So, companies for example, companies like Standards and Poor's and Moody's and Value Line for example, all these agencies in the US what they do is they gather information on firms' balance sheet positions and investment activities.

And sell these data to the potential buyers including individual libraries and financial intermediaries who are is interested to invest in the finance market. However, the system of private production of a production and sale of information does not completely solve the adverse selection problem in securities market.

Why? Because there is free rider problem. What is free rider problem here? The free rider problem occurs when people who do not pay for information, they take advantage of the information that the other people paid for.

The free rider problem suggest that private sale of information is only a partial solution to the adverse selection problem. So, suppose you have bought some private information, for example, from these agencies. What is going to happen here? So, when you bought this private information, as compared to others in the market, you have some comparative advantage about information in the market.

And, when you start utilizing or make use of this information then; accordingly, that means, based on this information you are in a better position to distinguish which a company's IPO is better, which company's bond is better. So, accordingly, whatever investment activities that you are doing, I will also follow you and will invest in the equity market and bond market.

Here what I will do that, since I am not paying for this private information, I will just try to free ride the information that you have bought, and I will just follow you. Whatever investment activities you are doing because you already bought private information. So, I will just follow your investment activities; whichever bond that you are buying I will also buy that. And, whichever IPO or bond, stocks that you are buying, I am going to buy that. So, what is going to happen?

So, it is not only me, but many people also who think that this individual or group of individuals or firms they had access to private information, and then all others will try to follow them. Whichever bond you are buying, investing others are also going to demand the same bond. So, as a result you know that bond price will be increasing. When the bond price will be increasing, you already know that the interest rate for that bonds will be declining.

So, as a result, since you already paid for this information, but what the net advantage that you are expected to get. Because others are free riding or following you then because of that it will increase the demand for those securities. And hence the profit opportunities are eliminated here. So, this is one of the key problems with the production and sale of private production.

To overcome it, another solution is government regulation to increase information.

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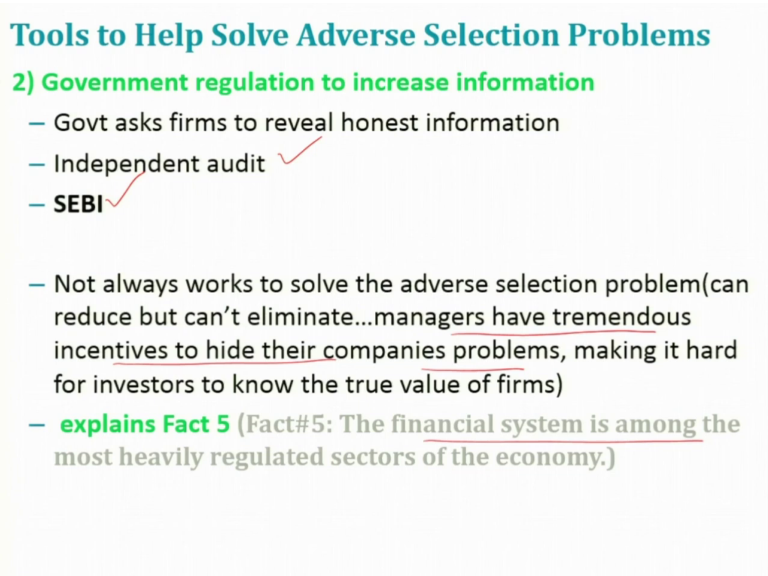

One we can see that to avoid free rider problem, the financial market will benefit from government intervention and then can overcome the free rider problem. So, government could, for instance produce information, to help investors distinguishing good firm from the bad firm.

But you know that it is a politically difficult propositions because the government agencies are supposed to make it public that these firms are high risk, and these firms are really bad firms or bad risk.

So, in this case, government can ask firms to reveal honest information. Government can ask the firms to publish the information about their balance sheet through an independent audit, using an independent audit about their balance sheet and investment activities. They can make it compulsory that the firms need to undergo independent audit and reveal all this information to the public. So, for example, in the US, the Securities Exchange Commission is the government agency that requests firms selling securities to undergo independent audits, in which accounting firms certify that the firm is adhering to standard accounting practices.

And other countries also follow this practice. For example, in India, the Security and Exchange Board of India security SEBI, ask all the listed companies to publish their balance sheet, and ask for auditing of their balance sheet by independent audit agencies. So, what we can see here is that we cannot a eliminate the problem of adverse selection problem. What we can do here is that the government can do here is that it can reduce or minimize the adverse selection issue or the lemons problems.

The issue here is that managers have tremendous incentives to hide their company's problem, making it hard for investors to know the true value of firms. Even, sometime, they may hide their debt obligation of the company, or they may postpone it.

All these explains fact number 5, which we said that the financial system is among the most heavily regulated sectors of the economy. So, because of all these things there is government regulation to increase information or to reduce asymmetric information.

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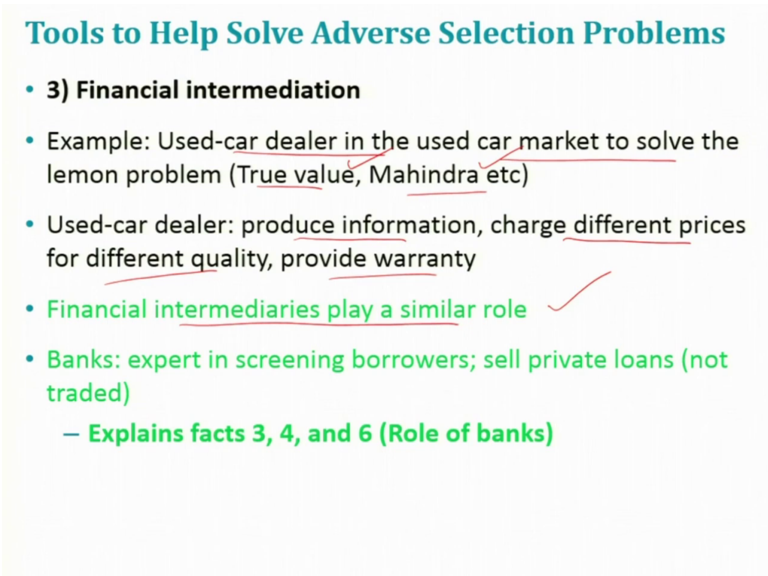

Another tool to reduce the problem of adverse selection is the financial intermediation. In the used car market, we have seen that most used cars are not sold directly by one individual to another. So, an individual who considers buying a used car might pay a privately produced information by subscribing to some magazines. For example, who is providing the information about a particular brand which require less repair or whichever brand has the good value.

A more formal way of doing this one is instead of going for a private information is better to go for a used car dealer in the used car market to solve the lemon problem. So, the dealers who have expertise in the field, who can distinguish good quality and bad quality car. The dealers are one of the solutions to resolve the adverse selection problem in the lemon in the car market.

So, in India you know that there is True value, Maruti True value and Mahindra used car markets etcetera. So, here you know that in the used car dealer, what they do? Obviously, they have more expertise in the field, they produce information and charge different prices for different quality, in addition they also provide warranty

If some cars are bad quality, they will sell it at a lower price. They make a different price for different types of cars as they have more better information about the car that they are going to buy and sell. So, this is all about in the case of used car market.

And, how about in the case of financial market? So, in the case of financial market what we can see here that in the financial intermediaries play a similar role, what used car dealers do in the used car market.

So, here the financial intermediaries, who is financial intermediary? So, a financial intermediary such as a bank, for example, a bank becomes an expert in producing information about firms, that it can sort out good credit risk from bad one. And, you know that an important element of bank’s ability to profit from information, it avoids the free rider problem by primarily making private loans rather than by purchasing securities that are traded in the open market.

So, since there are lots of customers for banks, for instance, you know that they have lots of information about the financial activities of their customers. For example, individuals and other firms who are their customers, they know the amount they are depositing in their account and the amount they are withdrawing. And, about the financial activities, how they are spending for different activities and the financial flow of these individuals.

So, all the banks are having lots of information about the financial position of each individual and firms having accounts with them, that is, transaction with them. So, in this case, they are having private information. So, unlike other individuals because we say that all these information are private information indeed. So, the information with the bank, they are not going to share it with us. They are having private information and what they are doing with this?

Using this private information, they do not need to worry about free rider problem because, they are not sharing this information with the anyone. They are in fact, using this information for their own business activities because they to make private loans. So, if they make a private loan to a particular individual or firm because they already know what the default risk is, based on their financial transaction and other business activities they already know what is the risk of these people or these individuals and these firms.

So, banks, they become expert in screening borrowers, and then they sell private loan, this is not traded and then they do not need to worry about the free rider problem. So, because of this, this explains the fact number 3, 4 and 6 about the role of banks: why banks are important lenders in the finance market in the case of external borrowing.

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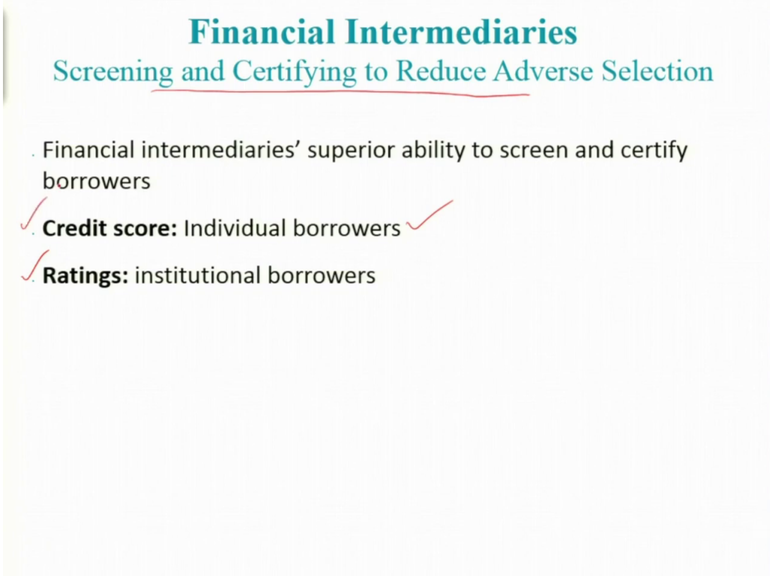

So, in the case of financial intermediaries, an important thing is that when they do screening and certifying, it reduces adverse selection problem. Financial intermediaries have superior ability to screen and certify borrowers. And the banks can supply information to the credit rating agencies to give the credit score of individual borrowers.

And similarly, the credit rating agencies also have business expertise in assessing the default risk, the financial conditions, and the balance sheet, the overall the financial conditions and the investment activities of the firms. They are also having expertise in rating or giving credit rating for individuals. The credit score is mainly for the individual borrowers and the credit rating is mainly for the institutional borrowers.

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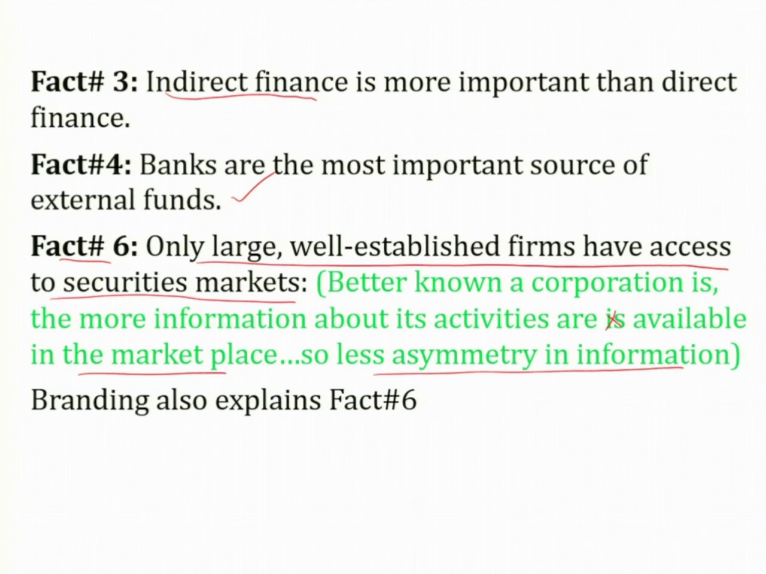

Because of all these things, what we can see that the fact number 3, that the indirect finance is more important than direct finance. The indirect finance means borrowing through the financial intermediaries, we can see that it is because of the information asymmetry and the resulting adverse selection.

To overcome the information asymmetry, it is better for corporations to borrow through financial intermediary instead of directly borrowing from the market or raising more funds through the IPO, instead of borrowing from bonds market; it is more advisable for the firms to borrow through financial intermediaries.

And you can also see that banks are the most important source of external funds, because of the fact is that we just discussed now. And we can also see that the 6th fact, that is, only large well-established firms have access in the securities market. So, we can see here that a better known a corporation is, the more information about its activities is available in the marketplace. So, there is less asymmetry in information. So, for example, the corporation, for example, like Microsoft, Google, Coca-Cola etcetera. So, you can see that all these firms are well known corporations right. They are the better known corporation; about the financial activities, what are the investment activities they have been doing or most of them will be widely discussed in the media and there are more and more information available in the public domain.

So, as a result you know that there is less information asymmetry for these firm's financial activities, financial condition, or default risk etcetera.

So, because of this you can see that large and well-established firms have more access to securities market. And, this also explain the branding, branding also explains fact number 6; that means, the well-known corporations can borrow easily, they can raise fund easily from the market.

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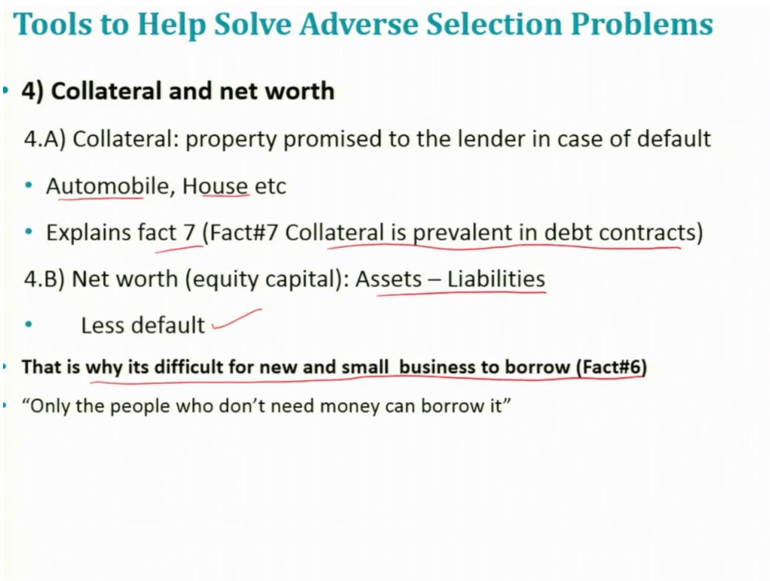

Then, the final one is the collateral and net worth. So, what is collateral means? Collateral means, collateral the property promised to the lender if the borrower defaults. The adverse selection can also happen if a lender suffers a loss and is unable to make loan payments and thereby defaults on the loan. Then it reduces the consequences of default risk.

You are aware, that some of the collaterals are automobile, house that they mortgage etcetera. The advantage here is that what if the borrower defaults on a loan, the lender can sell the collateral and use proceeds to make up for the losses on the loan. For example, if you fail to make your mortgage payments, then the lender can take the title to your house, auction it off and use the receipts to pay off the loan. So, then you know, because of this, collateral is one of the most important features, a prevalent feature in the finance market; especially in the debt market.

So, this explain the fact number 7; that means, collateral is prevalent in debt contracts.

Then, coming to the net worth; Net worth means, especially the equity capital, net worth is calculated in this way; that means, assets minus liabilities that is the net worth of a firm, that the difference between a firm’s assets-what it owns, and its liabilities; what it owes. The firms’ net worth also can serve similar role of collateral.

That means, if a firm has a high net worth, then even if it engages in investments that lead to negative profits, the lender can take title to the firm’s net worth, sell it off and use the proceed to recover some of the loss from the loan. So, in addition, a firm with high net worth is less likely it is to default because the film has a cushion of assets, that it can use to pay off its loan.

So, here you can see that those who are having high net worth, they are less likely to default, less likely they are to make a default of the loan that they have taken. So, that is why it is difficult for new and small business to borrow, means they have less collateral, and they have less net worth. It also means that only the people who do not need money, means who have high net worth and collateral, can easily borrow from the financial market. That is, those who are having more collateral and having high net worth, they may not need money in fact, but it is easy for them to borrow from the finance market.

We have now completed the discussion of the concept called adverse selection. We also discussed what are the tools to address these problems.

And, in the next session let us discuss other aspects of a market failure, that is called moral hazard.

Thank you.

Keywords: Adverse selection, private information, free rider problem, government intervention, independent auditing, collateral, net worth