

Financial Intermediation and Future of Financial Intermediation

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A Financial System acts as a lubricant to the real economy. Prior to innovation of money, goods and services were exchanged directly for goods and services. The barter system has a number of disadvantages. i.e. lack of double co-incidence of wants, absence of a common measure of value, indivisibility of commodities and difficulties of storing wealth. The following simple circular flow model (figure 1) explains the barter system as well as money usage by the public. In this diagram, inner flows show real flows and in the absence of the money, households would need to use Barter System to satisfy their daily requirements. The middle flows represents the introduction of money. Due to the introduction of money we can separate the act of sale from the act of purchase. Outflows represent lending and borrowing transactions

in the economy. Lending by households means that they are surplus units and borrowers (firms) are deficit units in the economy.

In the absence of financial intermediation, surplus and deficit units meet to fulfill their financial needs. A person with surplus funds out of his/her current income may want to lend these funds in order to maintain the ultimate objective of safety, liquidity and expected return. On the other hand, deficit units try to minimize their deficit through borrowings from surplus units.

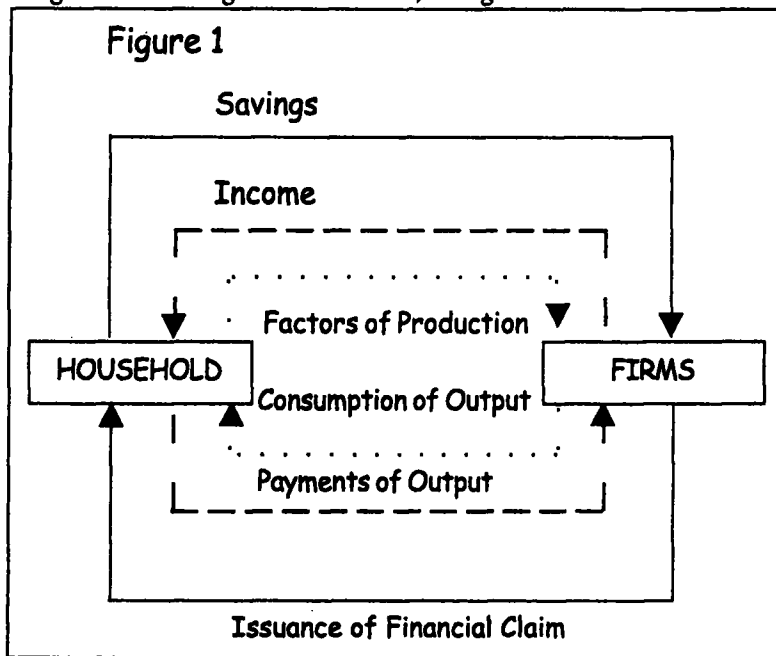
Direct transactions between surplus units and deficit units can be seen in the economy even today, but it has following three major problems. These are –

- 1) Different requirements of lenders and borrowers.
- 2) High transaction cost.

- 3) Problems arising out of information asymmetry.

Different requirements of Lenders and Borrowers

Lenders have very short-term goals on lending. Their important objectives are three fold. These are safety, liquidity and expected return for their surplus. Deficit units borrow funds to finance investment and will tend to repay the borrowing over the expected life of the investment. When people borrow funds, they issue a financial claim (Financial Instrument), which has the characteristics of risk, liquidity, term of maturity, real value, certainty and expected return, to the lenders. From a lender's point of view, default risk would arise due to non-repayment of borrowed money and from the borrower's point of view liquidity risk can be generated to the lender. Furthermore, the transactions of borrower's are long term in nature and lender's transactions are short-term in nature. These factors clearly show the concept of different requirements of the two parties. Then the question arises that how lenders and borrowers can minimize or reconcile these conflicting requirements?



Transaction cost

When lenders and borrowers engage in direct exchange of financial requirements, transaction cost plays a vital role. In the presence of high transaction cost, it is difficult for a potential lender to find an appropriate borrower. Therefore, we need to discuss the transaction cost faced by lenders and borrowers.

Transaction cost can be divided into four categories –

- 1) Search Cost - Both lender and borrower need to incur this cost for searching and finding information about a suitable party. (to borrow or Lend)
- 2) Verification Cost -

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Lenders/borrowers must verify the accuracy of the information about borrowers/lenders.

- 3) **Monitoring Cost** -
If a loan is granted, the lender will monitor the activities of the borrower.
- 4) **Enforcement Cost** -
The lender will need to ensure the enforcement of the terms and conditions of the contract.

Problems arising out of information asymmetry

This is a very important concept in the financial world. Asymmetric information refers to the situation where one party in a transaction has more information than the second party. This is a common problem not only in financial transactions but also for other activities. In most cases, a seller has more information than the buyer does (Second-hand car market is a good example). In the case of the financial industry, a borrower has more information than lender. The borrower knows the potential return and risks of the investment than the lender. Therefore, the existence of asymmetric information creates problems for the lender at the verification stages and after the monitoring and enforcement stages.

The information asymmetry creates two sub-problems –

- 1) Adverse Selection
- 2) Moral Hazard

An adverse selection occurs when selecting a potential borrower by the lender. This is a problem, which arises at the search and verification stages of the transaction. The ultimate result of this selection is an adverse outcome or the loan may default. It can be defined as a credit risk or default risk (bad risk). Why does adverse selection occur? Assume that you have two friends Sajitha & Samitha. Samitha will borrow only when he has an investment project. He is sure about his

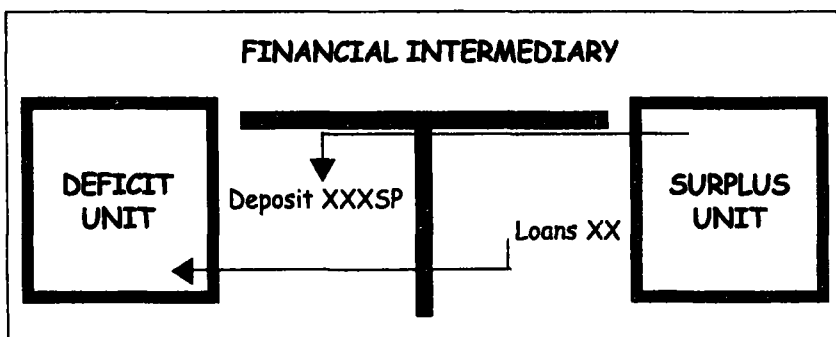
returns and his aim is also to pay back the loan. Your second friend Sajitha is a risk lover. He always thinks about earning more money, which is based on high risk and high return concepts. If his project fails, he cannot pay back the loan. Can you guess who would first ask money from you? Definitely Sajitha. If information were symmetric, you will never lend to Sajitha due to high risk. But information asymmetry directs you to lend to Sajitha for high return. In this example, selection of Sajitha to lend money can be considered as an adverse selection.

The second problem of asymmetric information is moral hazard. This is a problem that occurs after the loan is made or at the monitoring and enforcement stages of the loan. After granting a loan, the borrower may commit an immoral activity from the lender's point of view, by making it less likely to repay the loan. The important idea here is, a borrower will behave differently when he is using borrowed funds compared to using his/her own funds. If he/she misuses borrowed funds and considers that is all right since it is not his/her own money, this can be defined as moral hazard.

Assume that you have lent Rs 100,000/- to your friend Sajitha because he convinced you that he could pay back money

has decided to invest money at a Betting Center and postpone the earlier decision of buying a computer. He may have the aim of earning more money today and pay back the loan to his friend. If he makes a good selection with all the information, he can win. However, he does not have all the information. Therefore, his selection in the Betting Center may also be an adverse selection. The ultimate result is losing a Rs 100,000/- bet. He may never feel bad because he did not earn this money. Due to this process, he will default the loan and we can consider this case as a moral hazard. On the other hand, if you knew Sajitha was likely to bet on horses with the borrowed funds, then you would prevent him from doing so. However, it is difficult for you to monitor the activities of Sajitha once you have lent the money because of the information is asymmetric.

Different requirements, high transaction cost and information asymmetries of lenders and borrowers lead to the establishment of financial intermediaries in the world. This is one of the greatest idea ever forwarded by the people of the world to overcome the above three problems.



within a month with 20 per cent interest. He explained to you that he can buy a computer by using the borrowed money and make more money by doing graphic designs. You know that he is a Graphic Designer. You lend money for the said purpose, but you do not know Sajitha's activities thereafter. After obtaining the money, Sajitha plans to visit the IBM Showroom, but on the way he

The process of Intermediation

The Process of Financial Intermediation

Financial Intermediaries were established in the 15th Century. It indicates us that the ancient people have also realized the problems of direct transactions of financial needs. At the be-

gining, we saw that the borrower issued a financial claim on the borrowed fund to the lender. Now society has financial intermediaries. How can they help the borrower? A financial intermediary can obtain the financial claim from the borrower and lend depositors money to him. In other words, a financial intermediary is able to hold the long-term, high-risk claim, which is issued by the borrowers, and finance this by issuing deposit claims, which are low risk and are short term in nature. Therefore, the financial intermediary transforms the characteristics of the funds passed through the firm. The intermediary is undertaking three main transformations –

- 1) Maturity transformation
- 2) Risk transformation
- 3) Size transformation

Maturity transformation explains the mismatch between the assets and liabilities. Liabilities (deposits) are short-term, whereas assets (loans) are long-term. (For example, one-year deposit and 10 year loan). In other words, financial intermediaries borrow 'short' and lend 'long'. Therefore, a mismatch arises in the balance sheet. This mismatch will expose the liquidity risks, which is the risk that financial intermediary will have insufficient liquid funds to service the deposit withdrawals.

Risk transformation means redemption of the risk faced by the intermediary. Most risky items such as loans and advances appear on the assets side of the balance sheet. Financial intermediaries are able to transfer risky assets into riskless deposits by –

- 1) Minimizing the risk of individual loans it has taken on.
- 2) Diversifying risk (provide loans to different groups).
- 3) Pooling risk – (Law of large numbers – grant number of loans)
- 4) Maintain adequate capital – to meet losses generating from asset side.

Size transformation means to collect

small deposits and grant large loans to deficit units.

Financial intermediaries reduce the transaction cost to a reasonable extent and benefits will go to the borrower. An intermediary can collect low cost funds and distribute it among borrowers at a lower cost. If a lender can lend to an intermediary with lower cost he/she will lend money to the intermediary and maximize his/her return. Similarly borrowers prefer to borrow from intermediaries, if the transaction cost is lower than direct borrowing. Then the question arises how a financial intermediary can reduce transaction cost.

Consider the following equations for direct lending –

$$\begin{aligned} R &= \text{Interest Rate} \\ T_L &= \text{Transaction Cost of Lender} \\ T_B &= \text{Transaction Cost of Borrower} \end{aligned}$$

$$\text{The net return to the Lender} \\ R_L = R - T_L \quad \longrightarrow \quad (1)$$

$$\text{The net cost to the Borrower} \\ R_B = R + T_B \quad \longrightarrow \quad (2)$$

$$(2) - (1) \\ R_B - R_L = T_B + T_L \quad \longrightarrow \quad (3)$$

Now we can introduce a Financial Intermediary. Consider their cost as C and assume that the borrower will pay it. Then our equations are as follows :

$$R_L = R - T_L^1 \quad \longrightarrow \quad (4)$$

$$R_B = R + T_B^1 + C \quad \longrightarrow \quad (5)$$

T_L^1 & T_B^1 means transaction cost after the introduction of intermediaries.

$$(5) - (4) \\ R_B - R_L = T_B^1 + T_L^1 + C \quad \longrightarrow \quad (6)$$

$$R_B - R_L = T_B + T_L \quad \longrightarrow \quad (7)$$

$$\text{Therefore:} \\ T_B + T_L = T_B^1 + T_L^1 + C \quad \longrightarrow \quad (8)$$

$$(T_B + T_L) - (T_B^1 + T_L^1) = C \quad \longrightarrow \quad (9)$$

That means the gap between lending and borrowing rates will be lower and ben-

efit both parties provided:

$$(T_B + T_L) - (T_B^1 + T_L^1) > C \quad \longrightarrow \quad (10)$$

Equation 10 tells us that the intermediary has lowered transaction cost by more than its charge.

Intermediaries reduce or eliminate the problems arising out of information asymmetry. Therefore, they are able to attract the public and sell their package to both lenders and borrowers with out any problem.

As mentioned above, lenders have less information than borrowers. Therefore, as a consequence of that they are faced with the problems of adverse selection and moral hazard. How can a banker avoid adverse selection and avoid it completely? A Banker can obtain more information from the nature of banking business. Further, if they have a large customer base in the country, they will have more information. If the banking industry has a close relationship among banks, they can exchange information. New institutions like Credit Rating Agencies and the Credit Information Bureau have also helped to get more information. Therefore, a bank can eliminate adverse selections problem to a certain extent. This system of private production and sale of information does not completely solve the problem of adverse selection because of the free-rider problem. The Free-rider problem occurs when people do not pay for information, and take advantage of information that other people have paid for. If this happens, the role of the Credit Rating and Credit Information Bureau will diminish.

The intermediary reduces the problem of adverse selection through the credit scoring method. Credit scoring means to analyze the borrower. By analyzing borrowers, an intermediary can avoid bad risks and keep the good risk centrally based. The next method is obtaining adequate collateral from the borrower to avoid an adverse selection problem. If the banker has adequate collateral, the in-

termediary can do business without any problem. For example, consider a mortgage loan. If the intermediary wants to reduce the risk of a loan, the bank can ask for adequate collateral. The borrower may pledge his house with a mortgage and therefore, reduce the lender's loss.

Intermediaries can eliminate the problem of moral hazard through the restrictive covenants into loan contracts. A restrictive covenant can be directed towards the discouraging undesirable behavior of the borrower. Consider the example we discussed above. If you ask Sajitha for the purchase receipt of the computer, then you can prevent him from betting on horses. That means, under restrictive covenants, the intermediary can monitor the borrower and restrict his activities to safeguard bank lending. In addition, requesting collateral for loans also helps to reduce moral hazard.

The above discussion shows clearly how financial intermediaries reduce the problems faced by lenders and borrowers. Hence, intermediaries are viewed as "social accountants", specializing in the acquisition and dissemination of information and as "delegated monitors" by the economists.

Future of Financial Intermediaries

Financial intermediaries began their activities more than five hundred years ago. During this period the scope and the activities of the intermediaries have been changed. However, significant changes were occurred in the industry during the last two decades in the industry are very important than before.

As mentioned earlier, financial intermediation occurred due to the different requirements of borrowers and lenders, high transaction cost and asymmetric information between them. However, evidence showed that financial intermediation has declined in the recent years in many parts of the world due to the follow-

ing reasons :

- 1) Lack of low cost funds.
- 2) Check writing facility against any account.
- 3) New financial instruments
- 4) Credit Rating Agencies.
- 5) New technology.
- 6) Availability of more information.

Financial intermediaries pay low interest rates for depositors and charge high interest rates from borrowers. To attract depositors as well as borrowers, they publish information through various media. In addition, the same media announces alternative liquid investments, which offer high returns. Therefore, people have second thoughts of depositing money with intermediaries. This leads to reduce the low cost funds to the intermediaries. Consequently, development of the money market funds and the mutual funds such as Unit Trusts, growth rates of deposit base of these institutions declined dramatically.

Prior to financial intermediation, public have information asymmetry. But with new changes, new firms have been established to provide financial information. One of such important institutions is the Credit Rating Agency (CRA). The CRA will provide a rating on a borrower in the market. According to these ratings, an investor can judge the risk before investment. This will provide information to lenders as well as to the borrowers. Borrowers, who have received good ratings, can sell their financial claims to lenders without any problem. Lender can get high return than investing in a financial intermediary and the borrower can fulfill his needs at a lower cost. In other words, firms with a good credit rating (AAA or AA+ or A) can borrow directly from the market by issuing a claim (securities) such as commercial papers, debentures or bonds. Due to the introduction of new firms, information gap between borrowers and lenders has been reduced to some extent. In addition, informational advantages that intermediaries monopolized in the market declined and enables to new firms to carry out the intermediary functions to the public. Today this

process has been termed as "financial dis-intermediation".

However, financial intermediaries still provide services to the public. Due to new developments, intermediaries decided to reduce intermediary activities, which are costly to them and introduced various other services to the public to maintain the profit levels and the prestige, which they had earlier. Due to the popularity of dis-intermediation activities in the financial market, financial intermediaries reduce their traditional activities and engage in following:

- 1) Enter into risky business.
- 2) Engage in off-balance sheet activities.

One of the risky businesses selected by the intermediaries is lending to real estate companies (Property Development). Financial intermediaries in Asian region select this sector to invest their money before the East-Asian crisis. Due to property loans, most of the cities in the East Asian countries became concrete cities. Excess supply of buildings reduces the prices of buildings as well as rents of the buildings. Furthermore, some of the buildings cannot sell or be rented out due to excess supply. This leads to increase the bad and doubtful loans of the bank's balance sheet. Most of the banks have adequate collateral on those buildings, but due to an excess supply they could not dispose these in the market. The end result is the financial crisis (10th largest bank in Japan - Hokkaido Takashaku Bank collapsed in 1997 due to this problem).

Dis-intermediation directs financial intermediaries into engaging in off-balance sheet business. Off-balance sheet business can be defined as any activity that does not lead to an accounting entry on the firms' balance sheet. This business includes both contingent claims and several other financial services, which generate fee income into banks.

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Four main off-balance sheet items can be seen mainly with financial intermediaries –

- 1) **Loan Commitments**
Advance commitment for provision of a loan, which will only appear on the balance sheet when the loan is made. This is a bank commitment to provide credit when the borrower's need arises.
- 2) **Guarantee**
Bank gives a guarantee to a third party on behalf of a customer. Liability occurs if the customer defaults. Then the transaction appears on the balance sheet.
- 3) **Underwriting**
When a firm makes a shares issue or bond issue, a bank may guarantee to buy shares or bonds which are not purchased by investors.
- 4) **Swap and Hedging Transaction:**
These activities are relating to financial derivative activities.

Financial derivatives are contracts that derived from a financial instrument. These contracts are very risky.

- 5) **Loan Related Services**
Originating loans and acting as an agent for syndicated loans.
- 6) **Trust and Advisory Services**
Financial Intermediary acting in portfolio management, arranging merger and acquisitions, safekeeping of securities.
- 7) **Brokerage and Agency Services**
Share and bond brokerage, unit trusts brokerage, life insurance brokerage and travel agency.

These activities show us that financial intermediaries are moving away from traditional banking activities and engaging in new activities. Therefore, financial intermediaries reduce their traditional intermediary activities and depend mostly on fee income activities. With regard to case of Sri Lankan experience, most of our intermediaries have a similar trend, but in limited nature. If people have more information, any institution, firm or Government cannot fool them and they will behave rationally. ■