**TABLE 2: GROSS AND NET POSITIONS OF THE BANKS.**

| | Due to | Due from | Net position |
|---|---|---|---|
| **X1** | 22 355 | 22 337 | ***18*** |
| **X2** | 24 313 | 23 397 | ***916*** |
| **X3** | 20 084 | 24 426 | ***-4 342*** |
| **X4** | 25 347 | 16 787 | ***8 560*** |
| **X5** | 17 097 | 22 249 | ***-5 152*** |

The final settlement among the banks can be arranged in two ways. Either debtors (X3 and X5) put the proper amounts in a box from where creditors (X1, X2, and X4) can take their claims, or they can ask the central bank to debit and credit their accounts. Having accounts at the central bank is another financial innovation that helps payments between members of the banking system.

**FIGURE 11: FINAL SETTLEMENT USING CENTRAL BANK ACCOUNTS.**

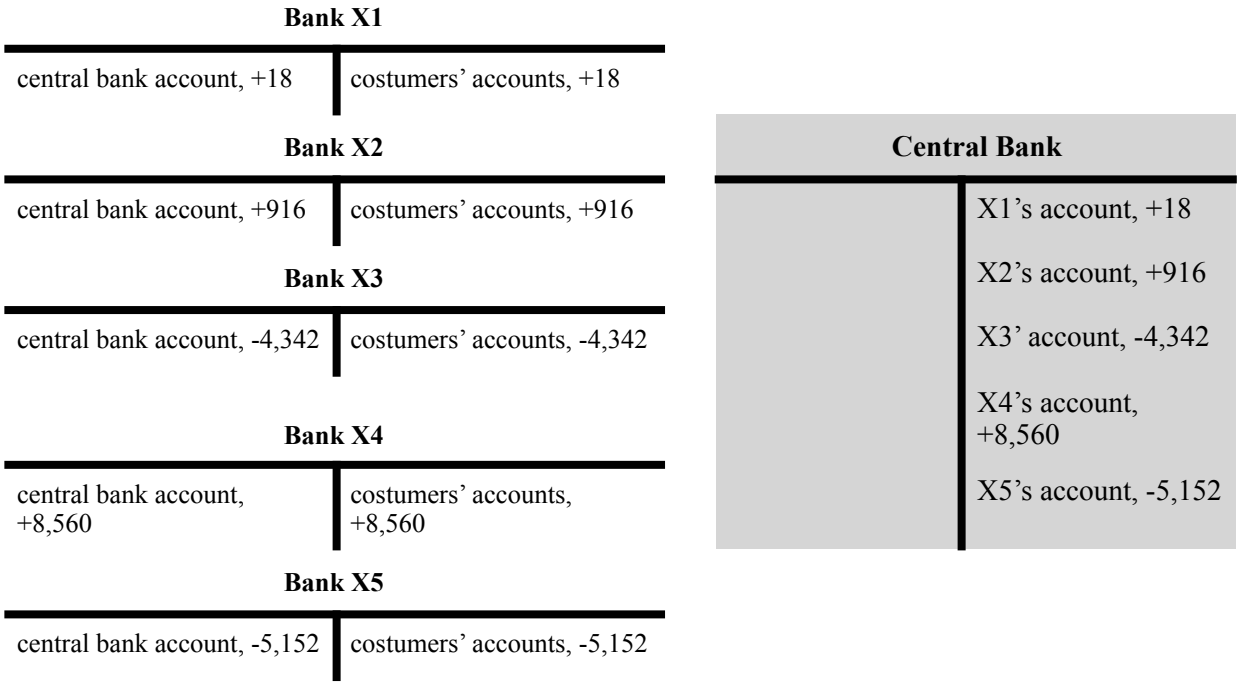
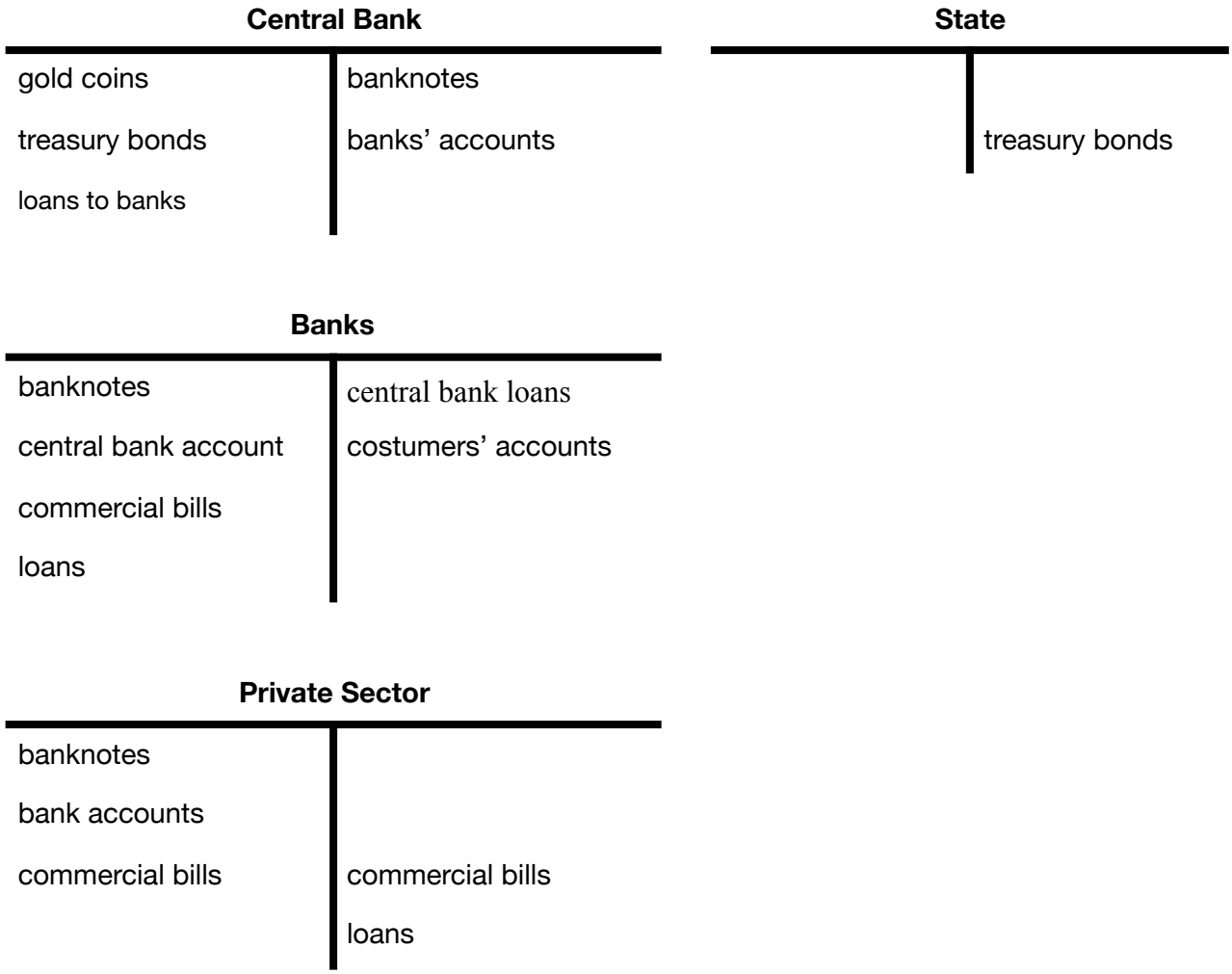



Figure 11 shows the net result of payments and settlements. At the banking level, individual costumers' accounts are credited and debited according to the checks turned in.

With the foundation of the central bank, a hierarchical monetary system evolved (Mehrling, 2013). On the top level of this hierarchy, the central bank serves as the bank of the crown (the state) and of other banks. Gold currency is still the highest form of money, but now it has started to lose its function of medium of exchange, as economic agents use either banknotes or checking accounts for the payments. The liabilities of the central bank (banknotes and current accounts of other banks) are the second highest forms of money, while checking accounts at banks are the third, commercial bills are the fourth in

this row. The second level of the institutional hierarchy is composed of the banks who keep banknotes and central bank accounts as reserves, and their liabilities (checking accounts) fulfil the role of medium of exchange in the economy. Though in a constrained manner, certain liabilities (commercial bills) of real economic agents can substitute higher forms of money in the function of exchange. (See Figure 12 for accounting details.)

**FIGURE 12: THE HIERARCHICAL MONETARY SYSTEM.**




The ultimate phase in the evolution of this system was the suspension of convertibility of banknotes to gold, which was triggered by a series of monetised budget deficits. As mentioned at the beginning of this section, the crown founded the central bank in order to create an institution at hand who willingly finances current deficits and maturing debts. The method of financing is the purchase of treasury bonds issued by the state. The central bank buys these bonds by printing banknotes, by which the state gains purchasing power to spend. As long as the additional money supply does not exceed the money demand generated by economic growth, this can be considered a proper and rightful procedure (Bánfi-Hagelmayer, 1989). It is worth to notice that whenever a private agent borrows from a bank, who grants the loan by issuing promissory notes or depositing the checking account, technically the same thing happens: some deficit is financed by newly created money. Considering the special relationship between the state

and the central bank, however, the two cases are not identical. Private agents face strict rules, they are screened, monitored, asked for collateral, and their loans are priced properly, whereas financing the state by the central bank does not involve such scrutiny. If a private debt matures, in most cases, it has to be repaid, whereas a maturing public debt can easily be rolled over.

The differences might be explained by the monopoly right to issue legal tender, a privilege the crown has given to the central bank. Holding the highest level of liabilities in the monetary hierarchy generates profitable business for the central bank, which is lending money to other banks facing liquidity shortage. A liquidity problem arises at the second level of the banking system when too many customers want to withdraw money by either having commercial bills discounted, or redeeming promissory notes or checking accounts into central bank notes, or when the bank is unable to settle at the end of the clearing process. In all of these cases, a short-term liquidity loan from the central bank can solve the bank's problem. As the central bank is the monopolistic supplier of legal tender notes, it can charge high interest rates for these loans. (Remember, the central bank was founded by private businessmen, so originally and for a long time thereafter, it was a profit-seeking entity.)

Public deficit financed by the central bank threatens this business by increasing the quantity of banknotes in circulation and can lead to growing prices in the economy. Inflation is partially caused by the direct spending of the state, and partially by a credit bubble generated by the loosening monetary conditions. As we have seen in the example about the checking accounts and the clearing system, 1 unit of central bank money can generate transactions in multiple units of value. Consequently, an additional unit of banknote created by the central bank, spent by the state and deposited by an economic agent in a bank, can generate multiple units of money on checking accounts. On the basis of the additional reserve, banks can lend more without having to worry about their own liquidity. The macroeconomic demand is increased through two channels: both the state and private agents can finance their excessive spending by debt. The state spends central bank money directly, private agents spend the money created by members of the banking system on the basis of the additional liquidity spent by the state.

If macroeconomic supply cannot adapt to macroeconomic demand, prices start to increase. What private agents see in this situation is that the purchasing power of their checking accounts or banknotes is falling. As checking accounts are redeemable to banknotes, and banknotes are still convertible to gold coins, and the nominal gold content of banknotes, so the price of gold is unchanged, more and more agents will turn their balances at banks into banknotes, and banknotes at the central bank into gold coins. As banknotes are created, the possibility of converting deposits (checking accounts) into banknotes is (with the help of the central bank) infinite, however, as the gold reserves of the central bank are finite, convertibility on the highest level of the hierarchy sooner or later must be suspended.

Historically, excessive public deficit and debt led to the suspension of convertibility. However regarding that the money demand of the growing economy can only be met with money-creation, sooner or later the gap between the gold-reserves of the banking system and the amount of the outstanding money-of-account would have been so huge, that convertibility could not have been hold.

### 2.4 Modern monetary systems

The monetary system evolved by the end of this (imagined) story is similar to the monetary systems operating in modern economies. There are some differences, of course. Central banks cannot finance the state directly anymore, although they can trade with treasury bonds on the secondary market, i.e. they can buy and sell treasuries that have been already issued. Instead of gold, the most important monetary reserves held by central banks are key currencies, such as the US Dollar, the Euro or the British Pound. Convertibility of national currencies is the possibility of exchanging them to other currencies, especially to those listed above.

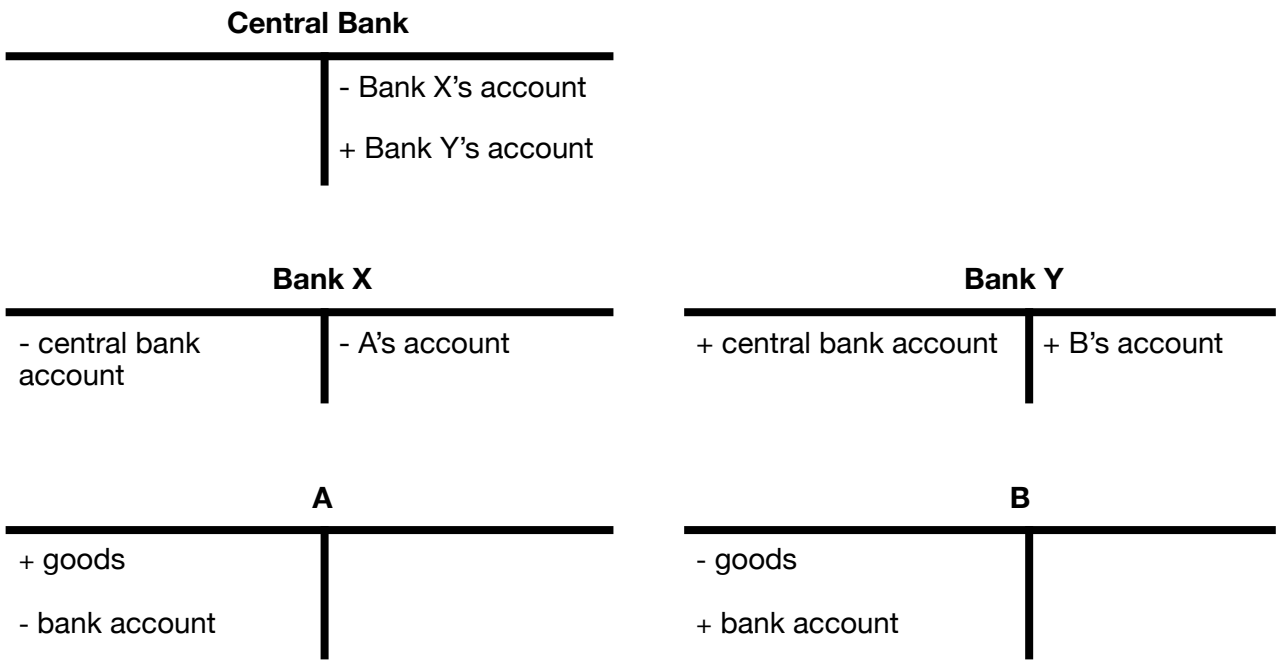
The convertibility of the home currency to foreign currencies constrains the ease with which the public deficit and debt can be (re)financed per se. Although technically the central bank can still help serving the debt by creating money, as this money is convertible to foreign currency, the excessive debt can easily lead to a currency crises.

Industrial and technological development has changed the payments and settlements systems. Economic agents holding deposit accounts in banks are using plastic cards instead of checkbooks. However, the essence of a payment between trading partners is still the ***parallel settlement***. *If "A" pays "B"* - except for the case when they are the costumers of the same bank - *two payments are generated simultaneously*. The account of "A" is debited by his bank, and the account of "B" is credited by her bank; and parallel with this payment, central bank money flows between the accounts of the two banks (Figure 13).

The transaction between "A" and "B" is successful if two conditions are fulfilled. First, the budget constraint is held, that is, "A" needs to have enough money on his account to pay for the goods or services provided by "B". Second, the liquidity constraint is held, that is, "A"'s bank needs to have enough central bank money on its account to pay "B"'s bank.

> On the international level, a single payment generally needs more than one liquidity conditions to hold. If a Mexican supplier sells tequila to a Hungarian liquor-store, there are three parallel payments: (1) the store pays the supplier, (2) the Hungarian commercial bank pays the Mexican commercial bank; (3) the Hungarian central bank pays the Mexican central bank. There are other possibilities to settle this business, but discussing them is beyond the scope of this chapter.
> **Task:** account for the international payment discussed above.

**Figure 13: Parallel settlement.**

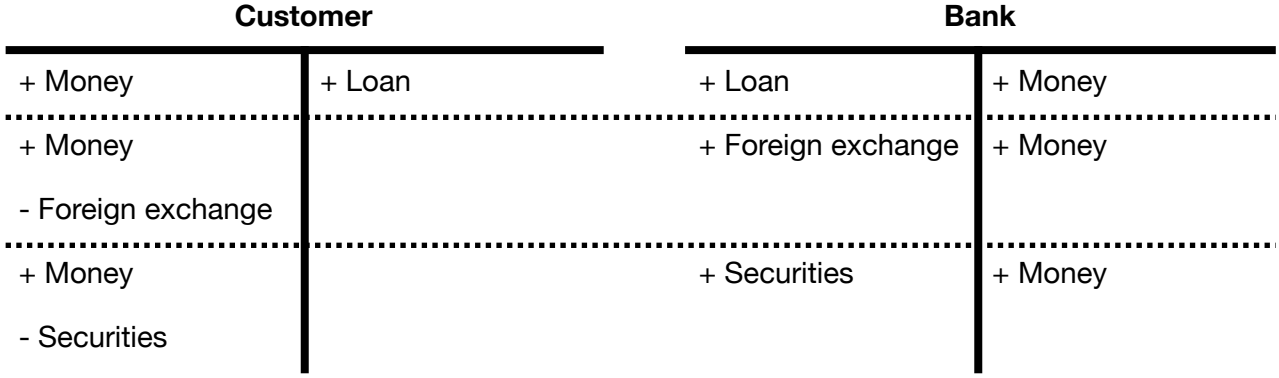



Money is created by the members of the banking system in three ways:

- *by granting loans either in a non-securitised or in a securitised form,*
- *by buying foreign exchange,*
- *by buying securities on the secondary market (i.e. issued securities).*

In all of these cases, the bank credits the current account of its costumer with the proper amount (i.e., with the amount of the loan, with the price of the foreign exchange or the securities bought; see Figure 14). The customer might be a household or a company. In these cases, a commercial bank from the second level of the banking system creates money. However, the costumer might be a commercial bank as well, in this case, it is the central bank who creates money. Out of the three methods of money creation, buying foreign exchange and buying securities are secondary. Foreign exchange is primarily created by foreign banks, by granting a loan, securities represent the debts of some economic agents. Ultimately, every unit of money is created through the indebtedness of someone.

**Figure 14: The three ways of money creation.**



When the reverse of these actions happens, i.e. a customer repays a bank loan, buys foreign exchange or securities from a bank, money is destroyed.
**Task**: account for the reverse case!

Commercial banks can create only "money of account", whereas the central bank can create cash (banknotes and coins) as well. It is rare, however, that a bank applies to the central bank for a loan granted in cash. Instead, the central bank credits the account of the bank that can be converted later into cash. Cash and central bank accounts of banks differ from each other only in their physical form, as they are both the liabilities of the central bank.

Creating money is not constrained technically, however, it generates liquidity risk, as additional deposits might be withdrawn at any time. Commercial banks manage this risk by different protective measures. First of all, they hold cash reserves and deposits at the central bank. These are the highest forms of liquidity as costumers can redeem their deposits into cash directly or into central bank accounts indirectly through the payments system. Commercial banks can, and in most cases do, hold short-term treasury bills. T-bills are liquid securities that can easily be sold on the interbank market or used as a collateral for an interbank loan or for a central bank loan.

**Task**: account for a liquidity loan on the interbank market!

There is an important difference between borrowing money from another bank and requiring liquidity from the central bank. Banks can provide liquidity only to the extent of their excess reserves, whereas the ability of the central bank to create reserves is theoretically infinite. Because of this, the central bank is the ultimate liquidity backstop in the banking system, frequently called the lender of last resort. To avoid moral hazard problems – e. g. when banks do not care about their liquidity because the central bank can always help –, this role must be regulated. According to ***Bagehot's Rules*** (Bagehot, 1873), named after Walter Bagehot, an English businessman of the 19th century, *the central bank should:*

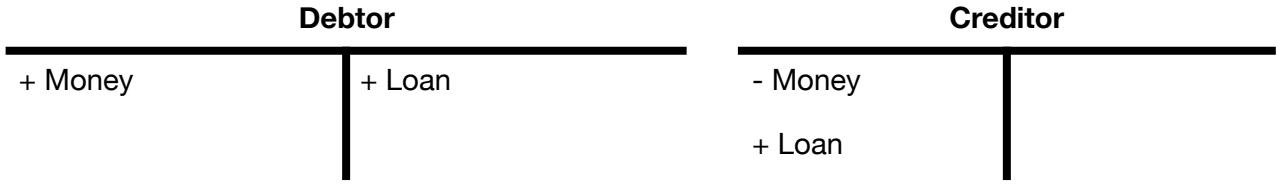
- *provide liquidity freely (without hesitation) to solvent banks,*
- *at sound collateral,*
- *at a high interest rate.*

Liquidity provision is important because a failure in the payments system could lead to a chain reaction and to a full-fledged systemic crisis. Banks and economic agents are interlocked through their balance sheets, so if "A" cannot pay to "B" because of a liquidity shortage at "A"'s bank, then "B" cannot pay "C", "C" cannot pay "D", and so on. However, it must be controlled for whether the bank has only mismanaged its short-term cash flows, i.e. it could not match cash (reserve) outflows with inflows temporarily, or it has an outstanding problem in the long run, i.e. it is insolvent. In the latter case, the bank will apply for liquidity again and again because its assets are worth less than its liabilities. The "sound collateral", in most cases, consists of some government security, however, in a wider sense any good quality asset can be referred to by this term. High interest rate on

the liquidity loan is required to have the bank feel the consequence of its mismanagement.

Every economic agent can provide money-redistributing loans, i.e. lend out money accumulated as an asset (Figure 15). This is - typically - a loan between the members of the same level of the monetary system, where the money lent had been created by an institution of some higher level before. A household, for example, can lend cash created by the central bank or money from its bank account (created by a bank) to another household or to a company. A bank can lend money from its central bank account to another bank. Money-creating loans are provided between levels of the monetary system, i.e. a bank can provide a loan by creating a bank deposit to a household or a company, or the central bank can grant a loan by creating a central bank deposit (or cash) to a bank. Money-redistributing and money-creating loans differ technically: the former restructures the asset side of the creditor whereas the latter increases both the assets and the liabilities of the creditor (Riesz, 1980). Another difference is that providing money-redistributing loans is constrained by the amount of money the creditor has, while money-creating loans can be (technically) granted infinitely.

**FIGURE 15: PROVIDING A MONEY-REDISTRIBUTING LOAN.**




Markets to provide liquidity are created on several levels of the monetary system, by deficit and surplus agents. Amounts paid for shipments in wholesale trade can be large enough not to let them rest on suppliers' accounts but to be tied up in the form of short-term deposits or short-term securities. Banks must be ready to provide solutions for surplus agents' problems (i.e. excess liquidity) in the short run because, on the other hand, deficit agents (for instance, firms who have to finance their production before they could realise revenues from sales) apply for liquidity loans. When a loan is granted, money is created and serves as the liquidity of the debtor. Thus, the bank does not lend out its own reserves, but when the debtor spends this money, reserves are pumped out of the bank. This liquidity, as mentioned above, can be re-borrowed on the interbank market, however, it is better if it comes back indirectly or even does not leave the bank. If some costumer of Bank A deposits excess money balances in Bank B then a reserve flow between the two banks is generated. In this wise, banks can compete for liquidity by creating attractive saving instruments. It is worth to emphasise that the subject of this competition is not the deposit itself. Deposits are liabilities of banks, and who wants to be liable? It is the additional liquidity – generated by the excess deposits – that the banks compete for, so that they can lend more on its ground.

**Task**: account for a bank loan in the next two cases:
- ➡ first, the business partner of the debtor is the costumer of another bank;
- ➡ second, the business partner of the debtor is the costumer of the same bank.

Considering these two cases, how can the bank decrease liquidity outflows generated by lending?

At the given level of available financial techniques and management skills the banks can estimate the secure ratio between their liquidity reserves and deposits. This ratio is not static, it can be influenced by the business cycle or by events in the calendar year. In recessions, for example, economic agents keep more cash, thus banks need to increase their reserves. Or around Christmas cash-usage is more frequent, making the banks once again keep more liquidity. Let alone these considerations, the supposed secure ratio of liquidity reserves determines how much money banks can create by lending. This ratio is well below 1, which leads to ***money multiplication***: *if the central bank creates one unit of central bank money* (which serves as the reserve of banks), *then banks can create multiple units of deposits according to the secure reserve ratio*. The following examples shed light on money multiplication.

Suppose that Bank X calculates that the secure ratio between its reserves and deposits is 10%. If at the moment the bank has 100 units of reserves and 800 units of deposits, then it can create by lending 200 more units of deposits without having to worry about liquidity problems.

Suppose that in the banking system the average of secure reserve ratios calculated by individual banks is 10%. If at the moment the banking system has 10,000 units of reserves and 70,000 units of deposits, then on the systemic level 30,000 more units of deposits can be created by lending.

Suppose that in the banking system the average of secure reserve ratios calculated by individual banks is 10%. At the moment the banking system has 10,000 units of reserves and 100,000 units of deposits, thus at the given level of reserves no more deposit creation is possible on the systemic level. However, if the central bank creates 500 more units of reserves by lending central bank money to the members of the banking system, it allows the creation of 5,000 more units of deposits.

The driving force behind the evolution of monetary systems has always been some problem that was solved by a formal, a procedural or an institutional innovation of profit seeking individuals (Table 3) or by the state. But even the state pursued selfish goals when introduced changes without the intention to manage some systemic imperfection. Still, the interplay of all these microlevel (re)solutions effected a system that fulfils two macroeconomic functions, namely providing the possibility of payments and settlements and connecting savings with investments.

**TABLE 3: EVOLUTION OF MONETARY SYSTEMS.**

| monetary system | problems | solutions | | |
|---|---|---|---|---|
| | | formal | institutional | procedural |
| barter* | inefficient, probability of double coincident of wants is low | generally accepted means of exchange | | |
| commodity money (gold coins) | practical: wears off, insecure, heavy | promissory notes in exchange for gold coins | depository institutions | promissory note - gold coin conversion |
| | economic: relative money shortage | promissory notes in exchange for the promise of repayment | banks | creation of promissory notes by lending |
| gold coins promissory notes (fiduciary money) created by banks | public deficit and debt | banknotes | central bank | financing the state by issuing banknotes |
| | practical: promissory notes and banknotes are seemingly identical | checking accounts (replacing promissory notes) | clearing system | clearing |
| | | central bank accounts of banks | | |
| | (possible) liquidity shortage of banks | | | central bank lending according to the Bagehot rules |
| gold coins checking accounts created by banks banknotes created by the central bank | inflation caused by overrissuance of banknotes | suspension of banknotes - gold coins convertibility | independent central bank (no deficit financing) | |
| two level banking system central bank money bank deposits | asset price bubbles caused by loose credit conditions *procyclical banking behaviour* too big and too important to fail problems** | | uniting central banks and prudential authorities *Bank Union (EU)* international supervisory bodies | introduction of Basel III rules |

* never existed

** discussing these issues is beyond the scope of this book

The financial position of an agent can be defined as the difference between its incomes and expenditures in a given time period. As someone's income is simultaneously someone else's expenditure, the aggregated financial position of all economic units is always zero ex post, which gives rise to perfect financial intermediation, i.e. deficits can be financed by surpluses completely. However, the preferences of surplus and deficit agents differ by more dimensions. The typical deficit agent is a private business who wants to fund investments in physical capital. The typical surplus agent is a household, who saves some part of its monthly income. Capital investments pay off expectedly in the long run, sometimes with non negligible risk of default. Households save for the short run, and they are typically risk-averse, i.e. they fear loosing even a tiny part of their savings. All these differences make it almost impossible to connect savers with investors directly.

The loanable funds theory states that financial intermediaries collect savings and fund investments thereby connecting surplus agents with deficit agents. It is easy to see, that there is a logical error in this claim if we want to apply it on the macroeconomic level. To fund deficit agents, the intermediaries - according to this theory - must collect the surpluses first. However, the surpluses are the results of excessive spending of deficit agents, who cannot spend until they borrowed these surpluses. The intermediary cannot lend something now that can be only collected later.

The banking system that creates money provides solution both to the problem of connecting savers with investors and to this logical error. It is enough to take a look at the balance sheet of a bank to see how the funding problem is solved. The bulk of the loans granted by the bank are long term investment loans, whereas the bulk of the deposits are sight deposits and time deposits maturing at most in one or two years. The bank separates the credit risk of the debtors from the liquidity risk of the depositors by holding capital reserves and liquidity reserves on the two sides of its balance sheet. In normal circumstances the expected liquidity loss and the expected capital loss are low, thus the bank can keep the liquidity reserves to deposit ratio and the capital reserves to loans ratio around 10-20% (see Figure 15).

**FIGURE 15: THE BALANCE SHEET OF A TYPICAL BANK IN NORMAL CIRCUMSTANCES.**

**Bank**

| | | | |
|---|---|---|---|
| Liquidity reserves | 10 | Deposits | 85 |
| Loans | 90 | Capital reserves | 15 |

The dynamics of this balance sheet are as follows.

- *money creation by lending: loans and deposits increase*
- *destroying money when the loan is repaid: loans and deposits decrease*
- *realisation of credit risk: loans and capital decrease*
- *realisation of liquidity risk: deposits and liquidity decrease*

Figures 16A and 16B help to understand how the banking system connects deficit agents with surplus agents through money creation. First, the banking system grants loans to surplus agents by creating deposits (money). Next, deficit agents spend this money and buy goods from surplus agents. This spending is the income of surplus agents, which until spent is by definition their savings. At the end the investments (loans) of deficit agents are financed by the savings (deposits) of surplus agents, the banking system intermediates between them, however the deposits were not collected but created.

**FIGURE 16A: FINANCIAL INTERMEDIATION IN THE BANKING SYSTEM.**

| Deficit Agents | | Banking system | | Surplus Agents | |
|---|---|---|---|---|---|
| +Deposit | + Loan | + Loan | +Deposit | | |
| -Money | | | -Deposit | -Goods | |
| +Goods | | | +Deposit | +Deposit | |

**FIGURE 16B: THE RESULT OF THE FINANCIAL INTERMEDIATION.**

| Deficit Agents | | Banking system | | Surplus Agents | |
|---|---|---|---|---|---|
| +Goods | + Loan | + Loan | +Deposit | +Deposit | |
| | | | | -Goods | |

**Bibliography**

Bagehot, Walter (1873): "*Lombard Street: A Description of the Money Market.*" Henry S. King & Co., London.

Bánfi, Tamás - Hagelmayer, István (1989): "*Pénzelmélet és pénzügypolitika*" ("*Theory of Money and Monetary Policy*"). Közgazdasági és Jogi Könyvikadó, Budapest.

Bell, Stephanie (2001): "*The role of the state and the hierarchy of money.*" The Cambridge Journal of Economics, 25, pp.: 149-163

Bordo, Michael D. - Jonung, Lars (1987): "*The long-run behavior of the velocity of circulation: The international evidence*", Cambridge University Press, Cambridge.

Mehrling, Perry (2013): *"The inherent hierarchy of money."* In: Social fairness and economics: economic essays in the spirit of Duncan Foley. London, Routledge, pp.: 394-404

Mises, Ludwig von (1912): "*The Theory of Money and Credit.*" Available at: https://mises-media.s3.amazonaws.com/Theory%20of%20Money%20and%20Credit.pdf?file=1&type=document

Polányi, Károly (1944): "*The Great Transformation. The Political and Economic Origins of Our Time*". Beacon Press, Boston.

Polányi, Károly (1957): "*The semantics of money uses.*" In: Dalton, G. (ed): "Primitive, archaic and modern economies: essays of Karl Polanyi", Garden City, Doubleday. pp.: 175-190

Riesz, Miklós (1980): "*Pénzforgalom és hitel*" ("*Money Circulation and Credit*"). Tankönyvkiadó, Budapest

Vidovics-Dancs, Ágnes (2014): *"Az államcsőd költségei régen és ma" ("Costs of sovereign defaults now and long ago")*. Közgazdasági Szemle, LXI., March, pp.: 262-278.

Wray, Randall L. (1993): "*The Origins of Money and the Development of the Modern Financial System*". Levy Institute, Working Paper No. 86

# CHAPTER 3 *BANKING OPERATIONS*

## 3.1 Passive banking oparations

The expression of ***passive banking*** transactions derives from the early stage of bank history, when their main activity was custody services, for which a fee was charged. At that time banks were really condemned to passivity, so this name became widespread. Even today, the *operations that modify the extent and composition of liabilities* – regardless of the fact that they express debts and liabilities – are called "passive"

***Deposits***

Deposits create the suitable liabilities for banks, which the credit and other income-generating activities are based on. The credit institutions' own funds perform only security functions.

Deposits are distinguished according to the right of disposal:

- *bearer deposit,*
- *registered deposits.*

***Bearer deposit*** are *unanimous*, *the holder of the proper documents can dispose over the deposited amount*. In case of ***registered deposit****s* only *the depositor and his/her representative may have disposal of registered deposits*.

According to the currency of the deposit:

- *in domestic currency,*
- *in foreign exchange, currency.*

In terms of repayment period:

- *short (shorter than a year) term,*
- *medium- (between 1 and 5 years) term,*
- *long- (longer than 5 years) term.*

According to interests:

- *fixed,*
- *variable,*
- *convertible rate,*
- *formally non-interest bearing deposits.*

We talk about ***fixed rates*** if during the repayment period *the size of the interest rate is defined in advance*. In case of ***variable-rate deposits*** *the initial interest rate is bound to some kind of reference rate* (e.g. key interest rate) and the initial interest rate is changed during maturity only in case of its change. In case of ***variable-rate deposits*** *the bank may change the initial interest rate unilaterally under certain conditions*. Formally non-interest bearing deposits are the discount liabilities.

According to the maturity of deposits:

- *demand deposit,*
- *deposits redeemable at notice,*
- *term deposit.*

In case of ***demand deposits***, *the depositor disposes of the account without any restrictions at any time without loss of interest*. The transfer of this amount is uncertain for the credit institution; therefore very low interest rate is paid on them. ***Deposits redeemable at notice*** are transition between demand deposits and term deposits. *The client may terminate the deposit at any time but the credit institution has to affect the order only after a certain time* (usually three days) depending on the contract. ***Term deposits*** *cannot be withdrawn maturity, or only at the price of losing interest*.

The payment account or simply bank account is used for the execution of payment transactions. Payment accounts are on the liabilities side of the bank balance, just as deposits. However, while in case of the deposit, the amount of the deposit is only for the disposal of funds (due to this fact the turnover of the deposit is small), the payment account is used for the transactions of the account holder.

If this account the bank accomplishes overpayment in addition to the balance, i.e. grants credit to the client, the account is called current account. The size of the available credit which can be taken automatically, without a separate application, is usually a certain percentage of the account balance (relative limit) or a specific amount limit (absolute limit).

The bank account management does not only mean booking incomes and expenses of the account merely, but a range of other related services are also included. For example, management of general ledger accounts, holding the disposal of the account holder credits granted on the current account, the so-called overdrafts, check and bill of exchange transactions, management of separate accounts, statistical report management for the monetary authorities, etc.

So if the account management is not too promising to the banks, the expected opportunity of connected transactions makes this banking transaction attractive for them after all. The interest benefit is added to this if the bank does not pay interest on the account balance. It mainly occurs in countries with low inflation rate.

***Issue of securities***
Besides taking deposits, the emission of the bank's own securities is a growing way of funds raising. Issuing of short-term securities generally has a liquidity motive, therefore their majority has a maturity of 90, 180 and 270 days. Many varieties of short-term securities are known, such as savings certificates, bills, etc. In general, they are fixed rate ones, but rarely flexible rate ones also occur. Interest payments are usually made at maturity, however, issuing on discount price is also known. Certificates of deposit bridge the gap between the short-term and long-term securities. The aim is the acquisition of sources aiming at financing permanent current assets with the emission of middle-term securities.

The purpose of issuing long-term securities is financing long-term investments. Its most widespread forms are bonds, savings certificates and letter of hypothecation.

The savings certificate can be bearer or registered, fixed or floating rate, or with bound denomination. In most cases, interest is paid at maturity, as compound interest. The savings certificate can be found in discount variations, as well. It is not possible to withdraw money from the note principal prior to the expiration.

The letter of hypothecation is fixed-rate security, of which coverage is created by lien on property. It makes possible to meet the lasting demand for credit of the agricultural and construction industries. Behind the letter of hypothecation there is therefore a land and real estate collateral, so the owner's claim is insured not only by the repayment promise of the credit institution but also by the collateral.

The great benefit of securities emission is that if the investor needs his capital earlier than it was excepted, it is not needed to be redeemed at the issuing credit institution, but it can be sold in the secondary securities market. It can provide long-term resources for the credit institutions without having to be afraid of repayment prematurely.

***Central bank loans***
If short- or long-term lack of resources arises at credit institutions, they can turn to the central bank for a refinancing loan. Banks can obtain collateralised loans only by depositing eligible securities at the central bank. The owner of the securities is still the commercial bank, so the amount of credit received for it increases the balance sheet total. Central bank money enters the asset side and there central bank credit (liabilities) enters the liability side.

The so-called ***repo*** transactions can be regarded as collateralised loans as well. Their essence is that the business bank *sells eligible securities to the central bank and and agrees to repurchase them at a predetermined price at a predetermined future date*. Thus the repo is the combination of a spot selling and a forward buying of the same security. The difference between the spot and the future price reflects the repo rate. In case of a ***reverse repo*** *the bank buys spot and sell forward the same securities*.

In case of ***rediscounting*** the *central bank purchases bills discounted by banks earlier*.

In case of loans offered beside foreign exchange coverage, the business bank takes out a loan in domestic cash equivalents to the amount of its foreign exchange deposit (which is its collateral at the central bank). ***Foreign exchange-swap*** transaction can be mentioned here, when the *business bank sells a kind of foreign exchange to the central bank for another particular foreign exchange, and the business bank repurchases it simultaneously for a specific period, on a predetermined rate*. So, in practice, it means a spot purchase and a forward selling, or the other way round, spot selling and forward purchase. T

***Interbank borrowing***
Compared to the corporate sector, the short-term liquidity in the banking sector should meet much more severe requirements. Companies and individuals can be some days late with their dues without a relatively greater risk, illiquidity of a bank can lead to a panic attack among depositors.

Therefore, banks often have to take intraday loans from each other in order to ensure their liquidity. Interbank credits have some basic specialties compared to the corporate credit market.
In general, the vast majority of interbank loans is short-term:

- ***overnight loans****, where the conclusion of the contract and taking out the loan happen on the same day, the repayment of the loan is a working day later.*
- ***tomnext*** *(tomorrow-next), when the borrowing takes place one day after the conclusion, and the loan repayment the day after*
- ***spotnext****, where the granting of credit happens two days after the contract has been made.*

Of course, the participants of the interbank market may reach an agreement about any kinds of constructions. Thus, interbank loans actually have no time limit, but due to the high interest rates, they are mainly used in case of liquidity problems, for a few days duration.

The second feature lies in the technique of contracting. While in case of corporate loans, literacy has an almost exclusive role, here oral agreements dominate, and technically it is followed by contracting written on-line, or by fax or other channels.

The third particularity is that there is no insurance behind the interbank transactions. It is explained by the short duration of transactions and the confidence of credit institutions in one another. Banks defend themselves against the risk by creating inner credit limits, in as much the bank offering the credit sets up limits, according to maturity types, based on the size of the partner asking for credit, its reliability so far, its creditability, banking regulation, etc. The limits can be different on the different levels of bank management.

Finally, a special feature of the interbank market is that trends in interest rates are much more erratic than in the corporate market. In case of tight liquidity market situation, since the borrower has to keep its liquidity in any case, a really high interest rate level may occur (of course its daily interest burden is bearable due to the short duration), while in broad liquidity periods the level of interbank interest rates may fall very low.

The best-known international interbank interest rate is LIBOR (London Interbank Offered Rate), which is the interest rate provided for first-class banks in the London interbank market. Its deposit equivalent is LIBID. International loans are provided in LIBOR + risk premium type of

constructions, where the risk premium covers the risk between the given borrower and a first-class bank in London.

### 3.2 Active banking operations

Active operations of banks are those providing loans to customers directly or indirectly. In case of a direct loan the bank contracts its debtor and provides the contracted funds directly on the debtors account. In case of indirect loans the bank contracts with a third party, i.e. a mediatory who contracts with the ultimate user of the provided funds.

Credits are classified into three groups based upon their economic content.

➡ We talk about ***money credit*** *if the client obtains the amount of credit based on a credit application according to the classical rules of lending*.

The bank maintains a credit limit at the other party's disposal for a commission Its essence is that the debtor can take out the loan in whole or in parts, automatically, at any time at his own discretion within a specific period. We talk about a loan if the client takes out a specified amount of money from his bank based on the loan contract, and he assumes an obligation to pay it back together with interests.

➡ We talk about ***credit-like lending***, *if the bank grants credit not on the basis of credit application but due to any other legal relationship*, for example joins in discounting bills of exchange, factoring happens, etc.

A typical type of credit like loan is the commodity credit. The debtor selects the suitable product, enters into the loan agreement (nowadays, in most of the cases it can be done at the place of purchase), and he can leave with the goods. The duration of the credit can be short-, medium- and long-term.

➡ In case of ***commitment credit*** *the credit institution does not grant the amount immediately but only assumes an obligation that in the future it will fulfil its borrowing obligation under certain conditions*. Such transactions are for example guarantee, letter of credit or credit availability.

**Credit types according to the character of the coverage**:

- *collateral loans,*
- *non collateral loans (blank credit).*

We talk about ***collateral loans*** *if the ownership of any of the receiving party's assets* (land, real estate, equipments and even amounts on the debtor's bank account) *is transferred to the bank, in case the receiving party cannot repay the loan as agreed*. Such lending has a relatively low risk, as the bank secures itself against non-payment. The bank has to value the collateral properly The credit is 100% covered if the value of the asset offered as coverage is equal to the amount of the debt.

In case a default a problem still can occur, if the bank cannot turn the asset into cash or at a lower price than the market value. Thus the bank usually applies a cut on the value of the collateral, and provides the loan accordingly. The ***Loan To Value*** (LTV) measure s*hows the ratio of the provided loan to the value of the collateral*.

It is also conceivable, however, that the credit is only partially collateralised, i.e. the object pledged as collateral is worth less than the amount to be repaid. The bank is in the worst situation when the credit is an uncovered credit, namely no asset is transferred to the ownership of the bank if the debtor does not pay. Banks are trying to avoid the provision of these loans.

Banks have to face a wide range of risk with credits: the risk of changing interest rates or of economic conditions, non-payment, fraud, the debtor's bankruptcy prospects, etc. They try to reduce these risks somehow. As we have seen, one way to guard against the interest rates and economic conditions is that not fixed but variable interest rates are applied.

The really serious problem is if the debtor cannot pay for some reason. One of the solutions, as we have seen, the emission of only covered loans, when in case of non-payment the asset pledged as collateral is transferred to the ownership of the bank.

The types of securities are as follows:

- *security deposit,*
- *lien,*
- *suretyship,*
- *guarantee.*

The ***security deposit*** *is a form of financial collateral*s. If security deposit is offered for the insurance of an obligation, the holder can satisfy his claim directly from the amount of security deposit in case of non-compliance or non-contractual compliance of the contract. The holder may not use the object of the security deposit, it has to be separated from his assets and it may be used only for the purpose of satisfaction. If the contract signed for the underlying collateral are fully satisfied, the security deposit is refunded to the obligor. The security can be marketable and less marketable collateral.

Absolute marketable: cash, government, banking securities, fixed-term foreign exchange or deposits. Less marketable securities are: listed securities, bills of a first-class debtor.

The ***lien*** is a *physical collateral*. Its key objective is that the debtor should provide coverage to satisfy the deferred claims becoming due later, with property tied up in advance. If the debtor is unable to repay his debt, the holder can secure his claim with the realisation of the pledge being used to ensure the claims. Satisfying claims using the pledged item is usually based on a court decision, by way of compulsory execution. After completing the contractual obligations of the debtor, the lien on the pledged item is automatically terminated.

The *most common type of lien* is the ***mortgage***. To create a mortgage, the pledge agreement is required to be out down in writing and the mortgage is required to be received in a public register (of mortgages). The subject of mortgage may be real estate, vehicles, and tangible assets. In case of real estates, records are done by the Land Registry. The pledged property remains in the possession of the owner, (s)he is intended to use all the while, but he has to ensure the preservation. We know pledge, when the transfer of the pledge is also required in addition to the mortgage contract. The transfer of the pledge can happen to a third person (chattel mortgage holder)

In case of ***suretyship***, *the surety is a person, who obliges to pay if the original debtor cannot.* If the principal obligation is not enforceable judicially, the surety cannot be enforced, either.

In case of ***guarantee*** *the bank pays a fee to the guarantor, who secures repayment of the loan if the original debtor defaults*. The difference between the surety and the guarantor is that the former is brought into the business by the the debtor. The guarantee is an independent obligation, which means that it is a payment promise independent from the principal obligation. So it is indifferent why the obliged does not perform, the guarantee is obliged to accomplish if the obligor of the underlying transaction is innocent in the breach of contract.

***The price of loans***

- ➡ *The* ***interest*** *on loans is charged according to the specified annual interest rate. The types of interest rate have already been discussed in connection with passive banking operations.*
- ➡ ***Potential nominal provision fee*** *should be paid based on the unused amount of the credit limit. Its level is specified by the bank, usually on an annual basis up to 0-2%.*
- ➡ *Handling charge is a single one-time fee charged for credit assessment and binding of contract. Its extent compared to the full amount of credit is 0-2%.*

- *Credit institutions may charge a **credit assessment fee** regardless of whether the decision was negative or positive. It is generally a specific amount.*
- *The **loan disbursement fee** may be charged after signing the loan agreement, at the time of disbursing the loan. It is usually 0-2% of the loan amount.*
- *Banks charge **an amendment fee** in all cases when the client's file has to be handled.*
- *In case of **prepayment fee,** the bank charges a commission for the client's unexpected cash flow due to liquidity and interest risk.*
- *In case of guarantees and letters of credit, credit institutions charge annual fees rather than interest rates. The extent is between 0-3%.*
- *The payment of **risk taking commission** occurs in case of purchasing the receivables (factoring), which reduces the amount of money paid to the customer.*
- *The bank may oblige the client to the payment of **default interest** if he does not fulfil the current obligation in time.*

The *indicator that includes all costs to be paid on capital* is the ***Annual Percentage Rate (APR)***. The APR is an internal rate which shows the real expense of the loan, in terms of present value calculation: it is an internal rate, in addition to which the repayable capital and lending fee is equal to the sum of credit reduced by expenses paid by the client to the credit institution at the time of the liquidation.

So the ***total charge*** is *the amount to be paid by the borrower based on the credit agreement in addition to the principal amount*. Determining the interest rate and contributions of the credit is called credit pricing. First, the base rate is determined, its parts are the cost of liabilities and interest margin. So the minimum credit interest to be paid by the client is the average (of the) interest rates paid for the bank's liabilities (deposits, refinancing, etc.) and the interest margin. The bank increases the basic interest rate with the interest rate risk premium (due to the position of the client and the transaction).

# CHAPTER 4 *BANKING RISKS AND REGULATION*

## 4.1 Financial intermediation

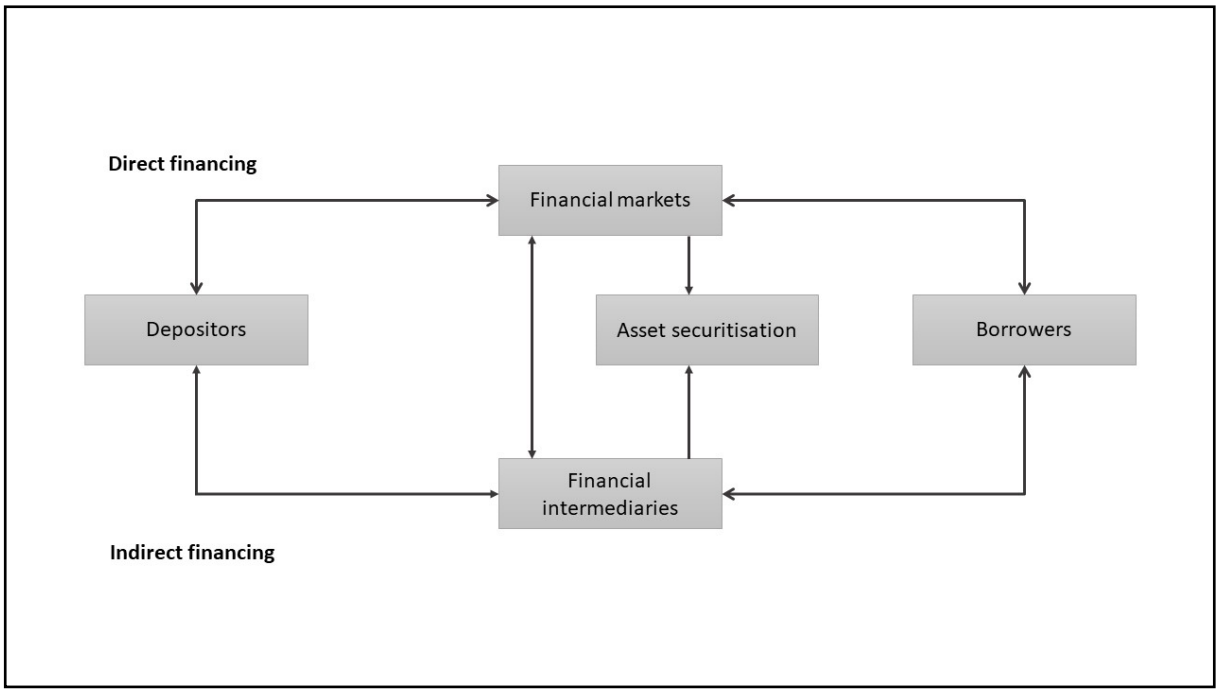
In order to understand how banks work, it is essential to understand financial intermediaries and their role in the economy. The process will be presented in a simplified way: based on the assumption that money already exists in an economy, the following economic units can be distinguished:

- *the state,*
- *companies and*
- *households.*

Among these economic units several transactions can take place on the goods and money market. Certain entities may spend more than their revenue (they are in deficit) or may have more revenue than their planned expenditure (they have a surplus).

In the absence of financial intermediaries, at first sight you would think that the units that have deficit (borrowers) would pair with units that have surplus (lenders). However, some barriers can be identified: the needs of the borrowers and lenders may be incompatible and even if their needs can be matched, it may still be difficult and expensive. These difficulties between the borrowers and lenders can be bridged by financial intermediaries.

**FIGURE 1. MODERN FINANCIAL INTERMEDIATION**




***Source: Casu et al (2015)***

Financial intermediation obviously entails costs, but the costs are lower than those for individual economic entities to directly access each other. Financial intermediaries cover their costs and profits from interest rate spreads between loans and deposits.

## 4.2 The role of banks and the different types of banking

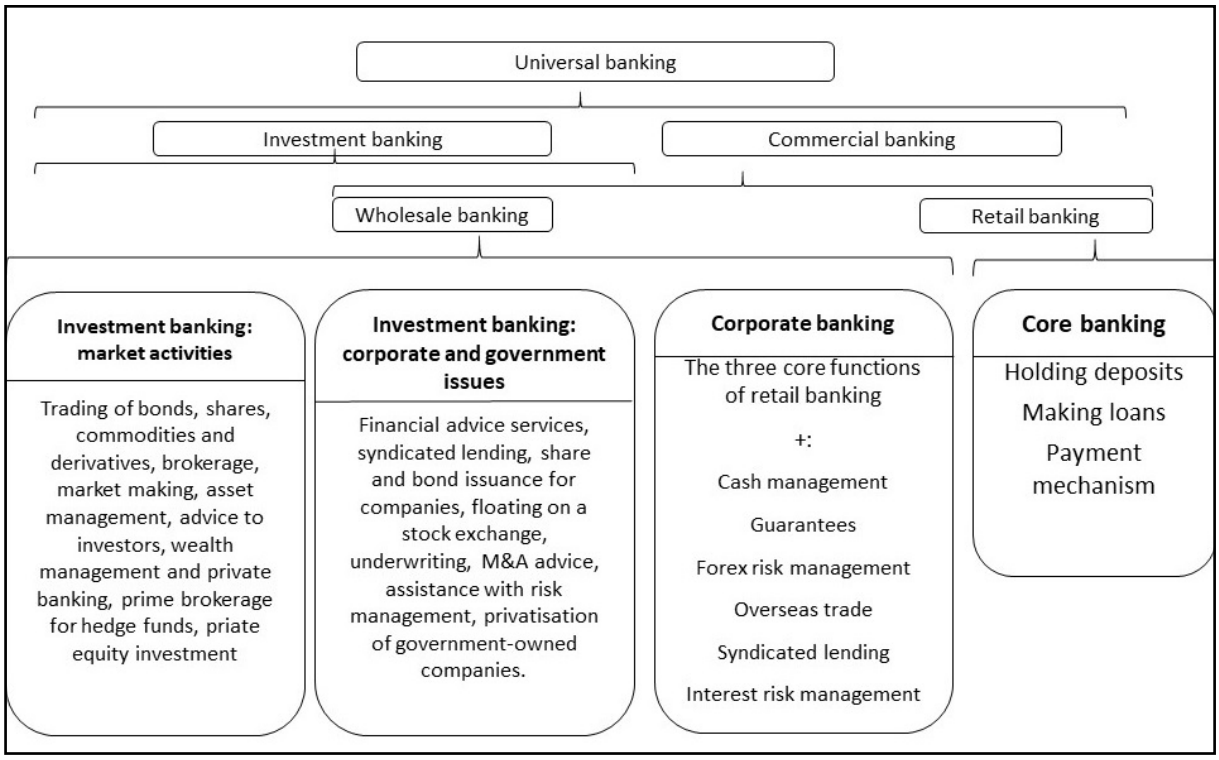
The main function of banks is to collect money (deposits) from units in surplus and lend money (loans) to units in deficit. Banks perform a ***transformation*** function, with regards to

- *size (generally, the amounts needed by the borrowers exceed the amount the lenders are willing to lend),*
- *maturity (generally, funds are lent for a short period of time into medium- or long-term loans),*

- *and risk (borrowers carry a risk that they might not be able to repay the amount of money that was lent to them).*

Initially, banks dealt with core banking operations, taking deposits, making loans and providing a payment mechanism. However, nowadays they conduct a much wider range of activities. Figure 2 provides one possible grouping to understand the different types of banking.

**FIGURE 2. DIFFERENT TYPES OF BANKING.**




***Source: Arnold (2014)***

The main characteristics of retail banks and wholesale banks are summarised in Table 1. The fundamental differences can be observed in the clients, the size and the number of the transactions and in the branch network. ***Universal banks*** *offer a wide range of commercial and investment banking activities*.

**TABLE 1: MAIN CHARACTERISTICS OF RETAIL BANKING AND WHOLESALE BANKING.**

| | **retail** | **wholesale** |
|---|---|---|
| clients | households, small firms | large firms |
| number and size of transactions | numerous small | fewer large |
| branch network | extensive | one or few |

## 4.3 Risks faced by banks

Risk measures the degree of uncertainty of an expected outcome. There are various types of risks and they originate from different situations. Taking into consideration that banks basically deal with others' money (mainly deposits) and not with their own (equity / bank capital), it is of crucial importance to pay more attention to the banking activities. As a rough breakdown, Table 2 shows the typical liabilities of banks.