Chapter 3: Capital Structure

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3.1 Introduction of Capital Structure

Achieving the goals of corporate finance requires that any corporate investment be financed appropriately. The sources of financing are, generically, capital self-generated by the firm and capital from external funders, obtained by issuing new debt and equity (and hybrid- or convertible securities). As above, since both hurdle rate and cash flows (and hence the riskiness of the firm) will be affected, the financing mix will impact the valuation of the firm. There are two interrelated considerations here:

i. Management must identify the "optimal mix" of financing – the capital structure that results in maximum firm value.\(^4\) (See Balance sheet, WACC.) Financing a project through debt results in a liability or obligation that must be serviced, thus entailing cash flow implications independent of the project's degree of success. Equity financing is less risky with respect to cash flow commitments, but results in a dilution of share ownership, control and earnings. The cost of equity (see CAPM and APT) is also typically higher than the cost of debt - which is, additionally, a deductible expense – and so equity financing may result in an increased hurdle rate which may offset any reduction in cash flow risk.\(^5\)

ii. Management must attempt to match the long-term financing mix to the assets being financed as closely as possible, in terms of both timing and cash flows. Managing any potential asset liability mismatch or duration gap entails matching the assets and liabilities respectively according to maturity pattern ("Cash flow matching") or duration ("immunization"); managing this relationship in the short-term is a major function of working capital management, as discussed below. Other techniques, such as securitization, or hedging using interest rate- or credit derivatives, are also common. See Asset liability management; Treasury management; Credit risk; Interest rate risk.

Much of the theory here falls under the umbrella of the Trade-Off Theory in which firms are assumed to trade-off the tax benefits of debt with the bankruptcy costs of debt when choosing how to allocate the company's resources. However economists have developed a set of alternative theories about how managers allocate a corporation's
finances. One of the main alternative theories of how firms manage their capital funds is the Pecking Order Theory (Stewart Myers), which suggests that firms avoid external financing while they have internal financing available and avoid new equity financing while they can engage in new debt financing at reasonably low interest rates. Also, Capital structure substitution theory hypothesizes that management manipulates the capital structure such that earnings per share (EPS) are maximized. An emerging area in finance theory is right-financing whereby investment banks and corporations can enhance investment return and company value over time by determining the right investment objectives, policy framework, institutional structure, source of financing (debt or equity) and expenditure framework within a given economy and under given market conditions. One of the more recent innovations in this area from a theoretical point of view is the Market timing hypothesis. This hypothesis, inspired in the behavioral finance literature, states that firms look for the cheaper type of financing regardless of their current levels of internal resources, debt and equity.

The primary responsibilities of the corporate financial manager are to make the investment and financing decisions. Investment decisions (how the corporation will spend money) are often made using one or more of a variety of capital budgeting techniques. Financing decisions (how the corporation will obtain funds to invest) are often more difficult to make. Many financing decisions are functions of the firm's cost of capital along with efforts to minimize those costs. Yet, determining the firm's cost of capital can be quite difficult. Many factors such as asymmetric information, agency problems, limited shareholder liability, bankruptcy costs, uncertainty and taxes complicate the financing (capital structure) decision. Our problem here is to examine the firm’s decisions to combine debt and equity (determine its capital structure). How might firms determine this issue?

There are many theories concerning how firms make their capital structure decisions, and these theories and practices are not mutually exclusive. Generally speaking, these theories fall into some combination of the following categories:

1. The Tradeoff Theory: Early versions of the Tradeoff Theory held that corporations received a tax benefit from borrowing, and that this benefit increased as the firm borrowed more. However, the tradeoff arises when the firm borrows enough to risk financial distress or bankruptcy and the various associated costs.
Empirical evidence suggested that bankruptcy costs were small relative to the tax benefits of increased borrowing, leading to the "horse and rabbit stew" puzzle. Later versions of the Tradeoff Theory included taxes at the personal level on debt and equity securities, along with various other corporate tax deductions and credits, suggesting that a variety of costs may be imposed on the firm by excessive borrowing.

2 The Pecking Order Theory: The Pecking Order Theory arises from the observation that primary markets for equities suffer from a severe adverse selection problem, making equity issues a method of last resort (last in the pecking order) for raising capital. On the other hand, bond markets discount bond issues due to agency problems and information asymmetries. These problems might be less costly than the adverse selection problem in equity markets. Internal financing, including retained and working capital seem to be the least costly financing technique, leaving this method at the top of the pecking order.

3. The Market Timing Hypothesis: This theory holds that the firm will sell securities over time based on managers' opinions with respect to their pricing relative to market prices. Managers will seek to sell securities when they believe that they are overvalued.

We will discuss each of these categories of theories after setting up a basic methodology for analysis based on the important theoretical work by Modigliani and Miller in 1958. We will find that what drives many of the theories of capital structure are the various capital market imperfections that managers and investors face when making these decisions.

In the absence of market frictions, the assertion that corporate capital structure is irrelevant is often regarded to be the "Central Theorem of Corporate Finance." Modigliani and Miller [1958] did not arrive at this theorem in a vacuum, there was a lively debate on the issue of capital structure at the time. In fact, Modigliani and Miller might not have been the first to publish this proposition.

"If the investment value of an enterprise as a whole is by definition the present worth of all its future distributions to security holders, whether on interest or dividend account, then this value in no wise depends on what the company's capitalization is. ... Furthermore, no change in the investment value of the enterprise as a whole would result from a change in its capitalization. Bonds could be retired with stock issues, or two classes of junior securities could be combined into one, without changing the investment value of the company as a whole. Such constancy of investment value is analogous to the indestructibility of matter or energy; it leads us to speak of the Law of the Conservation of Investment Value."

Clearly, the notion of capital structure irrelevance predates the famous paper by Modigliani and Miller, but they point out the following potential shortcoming of the Williams analysis:

"None of these writers [Williams and others] describe in any detail the mechanism which is supposed to keep the average cost of capital constant under changes in capital structure. They seem, however, to be visualizing the equilibrating mechanism in terms of switches by investors between stocks and bonds as the yields of each get out of line with their "riskiness." This is an argument quite different from the pure arbitrage mechanism underlying our proof, and the difference is crucial."

However, while Williams offered no formal proof for his "Law of Conservation of Investment Value," it does seem clear that he considered its implications and perhaps arbitrage as an enforcement mechanism. Nevertheless, it is Modigliani and Miller who actually articulate this proof, and establish this essential methodology based on the "Law of One Price" into the finance academic literature.

B. Perfectly Efficient Capital Markets and Capital Structure Irrelevance

The purpose of this section is to develop an analytical foundation to examine the capital structure decision. The initial framework will require a number of assumptions to simplify the capital structure problem. Although these assumptions are unrealistic, the model can easily be extended by relaxing assumptions one or more at a time.
Modigliani-Miller Assumptions

Miller and Modigliani, in their path breaking paper on capital structure in 1958, outlined conditions under which the capital structure of a firm did not affect its value or cost of capital.1 While these conditions are unrealistic (as Modigliani and Miller were well aware), their analysis provided an excellent starting point for the analysis of capital structure. The verification that they offered for the validity of their analysis is called an arbitrage proof. In fact, the proof of their capital structure model was the first occurrence of an arbitrage proof in the modern corporate.

This type of proof is based on the premise that in capital markets equilibrium, the simultaneous purchase and sale of assets generating identical cash flows must generate zero profits to the investor. Assumptions explicitly set forth by Modigliani and Miller are as follows:

1. The most simplified form of their analysis was based on the following series of assumptions: Firms generate potentially uncertain income flows

2. Investors maintain homogeneous expectations with respect to expected income flows

3. Dividend policy is irrelevant. For sake of simplicity, so as to not contend with growth issues, it is easier to assume that all earnings are paid in dividends (implicit), though Modigliani and Miller do distinguish between earnings and dividends.

4. Firms function in comparable return classes (essentially risk classes as expressed by Modigliani and Miller; they suggest in footnote 9 that industries might serve as rough approximations for class.)

5. The market price of each company's stock is proportional to its income (the proportion equals $1/kA,i = 1/kA,j$ for each i and j), and this proportion is identical for each companies in its class. Thus, each company's rate of return is the same as that for each other company given a potential outcome.

6. All debt instruments, personal or corporate are riskless, are issued at the same rate of return and are perfect substitutes.

7. Managers act in shareholder interest.
C. Corporate Income Taxes and Capital Structure

Our simplified capital structure analysis in the previous section was constructed under some rather unrealistic assumptions. In this section, we will begin to delete the no tax assumption. Now the firm will be subject to income taxes at the corporate level and will realize tax deductions on its interest payments to bondholders. Under the terms of our new analysis, we will find that corporate income taxes, and the interest costs associated with them will tend to cause leverage to increase the value of the firm. Essentially, with the existence of corporate income taxes only, we can easily show that the relationship between values of leveraged and unleveraged firms may be written as follows:

\[ VL = Vu + Vd \]

Consequently, firm value increases as leverage increases, and firm value is maximized when the firm is 100% debt financed. The next section discusses the impact of leverage on firm value in an environment with both corporate and personal income taxes.

D. Corporate Securities as Options and Capital Structure

Here, we introduce the Modigliani Miller irrelevance theorem from the Black and Scholes [1973] and Merton [1973] frameworks, using the put-call parity concept offered by Stoll [1969]. In a limited shareholder liability context, Black, Scholes and Merton viewed corporate equity as an option on the firm's assets and debt as combining the features of riskless debt and a short position in a put on the firm's assets. In particular, using the methodology of Stoll, terminal (expiration date T) payoff structures of calls (cT) and puts (pT) are functions of their exercise prices X and underlying asset prices (ST) as follows:

\[ CT = \text{MAX}[0, ST - X] \]
\[ PT = \text{MAX}[0, X - ST] \]

Thus, on any date \(0 < t < T\) prior to expiration, American calls and puts must be worth at least as much as the difference between the stock price and the call exercise price.
Now, redefine the underlying asset to be the assets of a leveraged corporation that provides for limited liability for shareholders. The face value of debt is X. The shareholder claim on those assets can be regarded to be a call option where shareholders exercise if the underlying asset value exceeds X; otherwise they abandon their claim. The creditor claim on the firm's assets is modeled as a combination of riskless debt with initial value $X_e - rfT$ and a short position in a put where creditors take possession of the firm's assets and abandon their claim on X should shareholders abandon their claim. Thus, the total current value of the firm's assets and securities, based on the Stoll put-call parity framework are as follows:

$$S_0 = C_0 + (X_e - rfT - p_0)$$

Assets = Equity + Debt

When $ST > X$, stock value equals $ST - X$, debt value equals X, and the total asset value equals ST. Alternatively, when $ST \leq X$, stock value equals 0, debt value equals ST as shareholders abandon their claim on the assets of the firm, and the total asset value equals ST. Thus, we see that asset value is unaffected by the level of debt X.

**Capital Structure and Risk-Taking**

Corporate law provides for limited liability for shareholders. This limits the obligation of shareholders to creditors to the amount that shareholders have invested in the equity of the firm. Limited shareholder liability is valuable to shareholders and is costly to creditors. This limited liability feature of the typical corporation provides opportunity for increased risk-taking by managers on behalf of shareholders. Increased risk-taking by managers increases shareholder wealth by enabling shareholders to benefit from highly successful ventures. While creditors do not share proportionately in the gains of the successful venture, they do stand to lose if the risky ventures are unsuccessful. Hence, shareholders are the primary beneficiaries of a successful venture; creditors lose disproportionately in unsuccessful ventures. This increases shareholder wealth at the expense of creditors.

Key to this analysis is the notion that shareholders can be thought to have a call option on the firm's assets. If the firm does well, shareholders exercise their right to
purchase the firm's assets by paying off creditors. The face value of debt (along with accrued interest) can be regarded as the exercise price of the shareholder call option on the firm's assets. The shareholder call option to purchase the firm's assets is exercised when it is realized that the firm has performed well enough such that the value of those assets exceeds the face value of debt along with accrued interest representing the exercise price of the call option. If the firm performs poorly enough such that the value of assets is exceeded by the value of the creditor obligation, shareholders default and leave the assets to creditors. In effect, they decline their right to purchase the firm's assets. Hence, shareholders can be thought to have a call option on the firm's assets which is exercised only if the firm performs well and shareholders opt to assume control of the firm's assets by settling obligations to creditors.

Now, let us consider the creditor's position. Creditors expect to receive a fixed payment. This is analogous to riskless debt. However, creditors understand that if the firm performs poorly, they must accept control of the firm's assets in exchange for indemnifying shareholder obligations. Hence, they agree to accept the firm's assets if shareholders wish to put the firm's assets to them. This position is analogous to a short position in a put. Creditors must take control of the firm's assets if shareholders do not want them; otherwise, creditors have no obligation. The exercise price associated with this put is the value (face value plus accrued interest) of the shareholder obligation to them.

Let us consider an example involving a bank, which might be presumed to be a very highly leveraged firm. Assume that the bank has $100 in assets, financed by $94 in deposits at an interest rate of 5% and $6 in equity. If the bank were to invest $100 by extending a very safe 6% loan to be repaid in one year, depositors would receive $98.70 ($94 \cdot 1.05) and shareholders would receive the remaining $7.30 ($100 \cdot 1.06 - $98.70). Thus, assuming that the loan is quite safe and ignoring administrative costs, shareholders earn an expected profit of $1.30.

Now, consider an alternative strategy where the bank can extend a loan of $100 whose repayment is not entirely certain at a higher interest rate of 15%. Suppose the probability of the loan being repaid are assumed to equal 80%, while the probability of default equal 20%, in which case none of the balance of the loan is paid. In the absence of deposit insurance, depositors receive $98.70 with a probability of eighty percent and zero
(there are no assets with which to pay depositors) with a probability of 20%. In the case of bank failure, shareholders facing limited liability would simply abandon the bank and default on depositor obligations. On the other hand, shareholders receive $16.30 ($115-$98.70) with a probability of 80%, while facing a 20% percent probability of receiving zero. Thus, the potential profits to shareholders are $10.30 with probability equal to .80 and zero with probability equal to 20%. Thus, the expected profit to shareholders equals $8.24, significantly higher than the expected profit associated with the safe strategy. Making this scenario even more interesting, further calculations would show that shareholders earn a higher profit from making this risky loan despite the fact that its expected loss equals $8, compared to the expected profit of $6 on the safe loan. The value of the bank's equity can be compared to that of a call option; the riskier the bank's investment strategy, the more valuable the bank's equity.

The risky loan scenario described above might not occur under normal market conditions where depositors are forced to carefully examine the risk of banks in which they make deposits. If shareholder managed banks were to extend risky loans or otherwise make high-risk investments, depositors would demand a substantially higher interest rate to compensate them for the risk of bank default. To avoid higher costs of funds, the bank would have an incentive to avoid risky investment strategies. However, the existence of federal deposit insurance guarantees bank obligations to depositors, eliminating the need for depositors to examine bank risk. This assures banks a low cost of capital regardless of the risk assumed in their investment strategies. Thus, federal deposit insurance enables banks to have every incentive to pursue risky investment strategies while facing none of the costs of doing so. The government has eliminated an important market-based disciplining mechanism, which has been replaced with a system of regulations and a myriad of regulatory agencies.

The firm's objective when determining its capital structure is to minimize its overall cost of capital. The cost of capital analysis can be aided or supplemented by consideration of a number of important factors:

1. Future sales levels: Both the expected level of sales and uncertainty associated with future sales levels should affect the firm's capital structure decision. A higher expected sales level enables the firm to sustain a higher level of debt. Furthermore, higher debt levels may result in increased shareholder profitability
when sales and EBIT levels are high. However, sales or EBIT uncertainty will be magnified by higher Degrees of Financial Leverage and debt levels. Thus, the greater the certainty associated with sales levels, the more capable firms will be to sustain high levels of debt.

2. Shareholder portfolio characteristics: If the firm's shareholders hold well diversified portfolios, as do shareholders in most larger firms, they can diversify away unique risk associated with a single firm. Such shareholders can manipulate their portfolio betas by making appropriate portfolio selections. Managers of these firms should not concentrate their efforts on risk management; they should attempt to maximize expected earnings per share. Higher financial leverage levels may be more appropriate for these firms. However, if shareholder portfolios are not well diversified, as is often the case with smaller firms, risk management becomes a more important issue. High financial leverage ratios may be less appropriate for these firms.

3. Lender Attitudes: Lenders' willingness to provide capital will certainly affect the firm's capital structure decision. Lenders may impose a variety of restrictions on borrowing firms. Perhaps, the most effective means of conveying lender attitudes is through the interest rate level.

4. The asset structure of the firm: the firm can reduce its earnings variability by matching the timing of cash flows generated by its assets with the timing of cash flows required to sustain or service its capital requirements.

5. Management attitudes: Managers realize that increased borrowing increases the amount of risk faced by the firm. In many instances, increased debt increases the level of expected earnings per share. The manager must decide how to balance these potential risk-return trade-offs. Managers of many firms may prefer to maintain levels of debt lower than the level required to maximize share values. Managers of these firms have one more consideration - the risk of losing their jobs. Although shareholders may be able to diversify away risk associated with a particular company's stock, most managers will not be able to diversify against the risk of losing their jobs. For example, if the firm is highly levered and has a high sales level, earnings will be quite high and managers may receive bonuses. However, if sales levels are low when the firm is highly levered, the outcome may
be disastrous and managers are likely to lose their jobs. Individual shareholders can diversify against this risk through their portfolio selections; managers cannot attain the same level of diversification. Managers may wish to maintain steady earnings streams and maintain greater certainty regarding their employment futures. Thus, managers of these firms may have conflicts of interest: on one hand, they wish to keep their jobs; on the other, they wish to maximize shareholder wealth. If such a manager maintains borrowing levels less than those that maximize the firm value, he may not be acting in the best interests of his shareholders though he may be maximizing the probability that he maintains his job.

3.2 Types Of Capital Structure and its Importance

There are three categories of financial capital that are important for you to know when analyzing your business or a potential investment. They each have their own benefits and characteristics.

**Equity Capital**

Otherwise known as “net worth” or “book value”, this figure represents assets minus liabilities. There are some businesses that are funded entirely with equity capital (cash written by the shareholders or owners into the company that have no offsetting liabilities.) Although it is the favored form for most people because you cannot go bankrupt, it can be extraordinarily expensive and require massive amounts of work to grow your enterprise. Microsoft is an example of such an operation because it generates high enough returns to justify a pure equity capital structure.

**Debt Capital**

This type of capital is infused into a business with the understanding that it must be paid back at a predetermined future date. In the meantime, the owner of the capital (typically a bank, bondholders, or a wealthy individual), agree to accept interest in exchange for you using their money. Think of interest expense as the cost of “renting” the
capital to expand your business; it is often known as the cost of capital. For many young businesses, debt can be the easiest way to expand because it is relatively easy to access and is understood by the average American worker thanks to widespread home ownership and the community-based nature of banks. The profits for the owners is the difference between the return on capital and the cost of capital; for example, if you borrow $100,000 and pay 10% interest yet earn 15% after taxes, the profit of 5%, or $5,000, would not have existed without the debt capital infused into the business.

**Specialty Capital**

This is the gold standard. There are a few sources of capital that have almost no economic cost and can take the limits off of growth. They include things such as a negative cash conversion cycle (vendor financing), insurance float, etc.

**Negative Cash Conversion (Vendor Financing)**

Imagine you own a retail store. To expand your business, you need $1 million in capital to open a new location. Most of this is the result of needing to go out, buy your inventory, and stock your shelves with merchandise. You wait and hope that one day customers come in and pay you. In the meantime, you have capital (either debt or equity capital) tied up in the business in the form of inventory.

Now, imagine if you could get your customers to pay you before you had to pay for your merchandise. This would allow you to carry far more merchandise than your capitalization structure would otherwise allow. AutoZone is a great example; it has convinced its vendors to put their products on its shelves and retain ownership until the moment that a customer walks up to the front of one of AutoZone’s stores and pays for the goods. At that precise second, the vendor sells it to AutoZone which in turn sells it to the customer. This allows them to expand far more rapidly and return more money to the owners of the business in the form of share repurchases (cash dividends would also be an option) because they don’t have to tie up hundreds of millions of dollars in inventory. In the meantime, the increased cash in the business as a result of more favorable vendor terms and / or getting your customers to pay you sooner allows you to generate more income than your equity or debt alone would permit. Typically, vendor financing can be
measured in part by looking at the percentage of inventories to accounts payable (the higher the percentage, the better), and analyzing the cash conversion cycle; the more days “negative”, the better. Dell Computer was famous for its nearly two or three week negative cash conversion cycle which allowed it to grow from a college dorm room to the largest computer company in the world with little or no debt in less than a single generation.

**Float**

Insurance companies that collect money and can generate income by investing the funds before paying it them out in the future in the form of policyholder payouts when a car is damaged, or replacing a home when destroyed in a tornado, are in a very good place. As Buffett describes it, float is money that a company holds but does not own. It has all of the benefits of debt but none of the drawbacks; the most important consideration is the cost of capital – that is, how much money it costs the owners of a business to generate float. In exceptional cases, the cost can actually be negative; that is, you are paid to invest other people’s money plus you get to keep the income from the investments. Other businesses can develop forms of float but it can be very difficult.

**Sweat Equity**

There is also a form of capital known as sweat equity which is when an owner bootstraps operations by putting in long hours at a low rate of pay per hour making up for the lack of capital necessary to hire sufficient employees to do the job well and let them work an ordinarily forty hour workweek. Although it is largely intangible and does not count as financial capital, it can be estimated as the cost of payroll saved as a result of excess hours worked by the owners. The hope is that the business will grow fast enough to compensate the owner for the low-pay, long-hour sweat equity infused into the enterprise.

**3.3 Source of Capital**
Debt capital

Further information: Bankruptcy and Financial distress

Corporations may rely on borrowed funds (debt capital or credit) as sources of investment to sustain ongoing business operations or to fund future growth. Debt comes in several forms, such as through bank loans, notes payable, or bonds issued to the public. Bonds require the corporations to make regular interest payments (interest expenses) on the borrowed capital until the debt reaches its maturity date, therein the firm must pay back the obligation in full. Debt payments can also be made in the form of sinking fund provisions, whereby the corporation pays annual installments of the borrowed debt above regular interest charges. Corporations that issue callable bonds are entitled to pay back the obligation in full whenever the company feels it is in their best interest to pay off the debt payments. If interest expenses cannot be made by the corporation through cash payments, the firm may also use collateral assets as a form of repaying their debt obligations (or through the process of liquidation).

Equity capital

Corporations can alternatively sell shares of the company to investors to raise capital. Investors, or shareholders, expect that there will be an upward trend in value of the company (or appreciate in value) over time to make their investment a profitable purchase. Shareholder value is increased when corporations invest equity capital and other funds into projects (or investments) that earn a positive rate of return for the owners. Investors prefer to buy shares of stock into companies that will consistently earn a positive rate of return on capital in the future, thus increasing the market value of the stock of that corporation. Shareholder value may also be increased when corporations payout excess cash surplus (funds from retained earnings that are not needed for business) in the form of dividends.

Preferred stock

Preferred stock is an equity security which may have any combination of features not possessed by common stock including properties of both inequity and a debt instruments, and is generally considered a hybrid instrument. Preferred are senior (i.e.
higher ranking) to common stock, but subordinate to bonds in terms of claim (or rights to their share of the assets of the company).

Preferred stock usually carries no voting rights, but may carry a dividend and may have priority over common stock in the payment of dividends and upon liquidation. Terms of the preferred stock are stated in a "Certificate of Designation".

Similar to bonds, preferred stocks are rated by the major credit-rating companies. The rating for preferred is generally lower, since preferred dividends do not carry the same guarantees as interest payments from bonds and they are junior to all creditors.[8]

Preferred stock is a special class of shares which may have any combination of features not possessed by common stock. The following features are usually associated with preferred stock:

i. Preference in dividends
ii. Preference in assets, in the event of liquidation
iii. Convertibility to common stock.
iv. Callability, at the option of the corporation
v. Nonvoting

3.4 Estimation of Capital Sufficiency

The sufficient volume of capital supports bank viability at every stage of its functioning and is of great importance for the provision of its financial responsibility and effectiveness. The measure of capital sufficiency in international and domestic bank theory is characterized in different ways. In foreign practice capital sufficiency is called “capital adequacy” and is defined as the “ability of the bank to satisfy its depositors’ demands and the demands of other creditors due to the presence of sufficient means”. Voit affirms that the problem of capital sufficiency is of current importance when the bank bears losses or is under the threat of bankruptcy. As a rule current income must be sufficient to compensate transaction costs and ensures bank development and payment of dividends to shareholders. Besides, current income must ensure a part of capital which is necessary for financing the expansion of bank operations. E. Reed, R. Cotter, E. Gill, R. Smith characterize sufficiency as the ability to compensate the losses and warn about
bankruptcy. J. Sinky supposes that the term “capital adequacy” reveals the general level of investment risk of this bank or bank system and has a notion about bank capital as a buffer and pillow which absorb the losses. Some foreign authors understand capital sufficiency as its level which protects a bank.

Against the losses and contributes to system stability. It should be emphasized that in the presented positions the sufficiency of capital indicates the maximum sum of risks and extreme losses of any kind which the bank may have without any damage for investors’ interests and other creditors. The specialists of the Universal Bank of reconstruction and development Maknoton, J. J. Carloson, Kl. Ditz give a more detailed definition of the sufficiency of capital. They define it as its level which is necessary for solving such strategic problems as possible future mergers or entering new and more risky types of business, as well as meeting the demands of regulatory bodies. The majority of domestic scientific economists suppose that the term “capital sufficiency” give overall evaluation (mainly by the regulative bodies of bank safety) to the degree of its subjection to the risk: the bank will be supposed as reliable and financially stable in the part of the capital if the characteristics of the last one correspond to the calculating norms of Sufficiency.

O.N. Antipova defines it as a general evaluation of bank reliability, the degree of the protection of its creditors’ and investors’ interests and the way to decrease the risk and insolvency. T. M. Kosterina defines that capital sufficiency characterizes the activity of the bank according to its stability by the origin of different risks on active bank operations.

A.D. Sheremetieva and G.N. Scherbakova think that the concept of capital sufficiency (adequacy) of the bank accumulates such qualities as reliability, stability, ability to oppose to unfavorable factors and absorb the damage from losses. P.P. Fetisov regards the sufficiency of capital as the ability of the bank to compensate the beat, warns about the bankruptcy and suggests to improve the quality of standard bank services no matter of possible losses.

E. V. Gerasimova supposes that the concept of capital sufficiency is an ability to compensate the unexpected losses, emerging because of different risks of bank activity. In our point of view V.V. Kiselev, L.T. Giliarovskaja and S.N. Panevina define capital sufficiency comprehensively. They characterize it as an ability of the bank to continue
rendering the traditional sets of bank services in the same quantity and in the same quality irrespective of probable losses. The general measure of its sufficiency is the quantity which, on one hand, helps to ensure the maximum income and, on the other hand, the minimum risk of liquidity, bank reliability. To sum it up, it should be emphasized that some economists identify the concept “sufficiency”, “adequacy” of capital and “capital adequacy”. They understand under the adequacy of capital its correspondence to the quantity and optimal structure to the level of the risk of assets according to the strategy and specific character of bank activity. It should be mentioned that firstly the concept of capital sufficiency denominates its quantity, adequacy, correspondence to something (for example, the adequacy of information, man’s behavior etc.). That is why the use of the concept “capital sufficiency” is rational. So, it is important to take into consideration that capital sufficiency of the bank in the according to the interests and demands of society. The problem of choosing the structure that must fix the capital standards for the bank and what must predominate in the approaches of its regulation: the government or the banks them selves, the guidelines for regulation from the government or from the competitive market is of current importance in bank theory.

The analyst of bank affairs J. Allen affirms that “The problem about capital sufficiency is always unclear for the bank. Probably the only measure of sufficiency is the unanimous agreement of market. In other words, the part of own assets in relation to market must increase until the market reacts approvingly”. F. Sinky Junior admits “it will be rational to give Allen’s recommendation not to regulating services, but to the market to define the bounds of capital sufficiency …Besides, in the situation, when thousands of local banks do not feel the disciplined influence of the market, the establishment of the norms of capital sufficiency is justified enough. It should be emphasized that the regulation of capital by the government became a part of bank activity long ago, because it is supposed that free market is not an effective tool of managing all kinds of risk which is typical for bank business. Banks are the only institutions that have short-term obligations which can be removed as soon as the clients’ confidence falls. Only a few banks have possibility to eliminate at once its credit package if there is a damage of mass removal of deposits. Besides, banks do not take into consideration the probable influence of its risk on the clients of other banks. Originally since 1988 within prudential supervision direct, oriented at quantity, there is a concept of capital regulation which is revealed in the document “International approaches to the methods of measures and
capital standards “according to the document“ Basic principles of the effective supervision for bank activity” the necessity to identify the regulative capital according to the level of bank risks and include the elements according to their ability to defray the losses; stimulate the capital to exceed the minimum (the 6th principle). The regulative demands to the capital are unified and possible to be used by every bank, irrespective of its industry, organizational and legal, competitive and other features. They must be objective, comparable for the majority of the lending institutes and not excessively limited. Originally the regulatory bodies protect bank system against potentially “weak” banks by fixing the definite demands to the volume of the own capital which is necessary for registration and for getting a corresponding license for making bank transactions. The Russian Bank tries to limit the quantity of bankruptcies of commercial banks by identifying the minimum capital standards. The establishment of the minimum level of own capital which is necessary for the registration of entrepreneur in the capacity of the bank institutional capital sufficiency. Then regulatory bodies fix the norms of capital sufficiency dynamic sufficiency. It should be mentioned that emphasizing the static and dynamic aspect of capital sufficiency links to the definite moments of the activity of credit company: as the volume of fixed capital does not correspond to the cost of the derived money and property, it tells us about statics and dynamics in the correlation of the authorized capital and property in the condition of banks functioning. For the first time the Russian Bank fixed the minimum capital volume in 1998 that corresponded to the demands of international standards. Though the difficulties which the Russian bank system had to collide with after the financial crisis in 1988 and bankruptcies which followed it led to the reconsideration and temporary suspension of these demands till Within the establishment of the demands to capital sufficiency The Bank of Russia does not create the economic conditions which can give the qualitative rise and focuses on quantitative features. It disturbs the principles of effective bank supervision. J. Kereken comes to the conclusion that the increase of capital demands in general “does not make the ban collapses rarer, as it was without them”.

Capital will be more than the smaller part of the own capital in bank means. The substantiation of the rise of the authorized capital can be supposed economically acceptable, if such rise provides the profitability of own capital which is not lower than its acceptable minimum. Thus, the concepts of the sufficiency of own capital has its special essence. Such contradiction causes the necessity to form the tools of their
agreement. The regulative capital is calculated to correspond to the norms of supervision services and is intended to pay the unexpected losses. The reserves are created for already identified and expected losses. The regulative capital is an obligatory capital which the bank must have in the correlation to the regulator’s demands and is obliged to pay the losses, particularly unexpected losses which arise because of the investment portfolio or its off-balance activity. The main subject of this measure is the Russian Bank which estimates the activity of the bank according to the adherence to the fixed norms and commercial banks which uses it to. There is a conflict of interests between the banks and regulative services concerning capital sufficiency: supervision services indicating the necessity of the growth of bank capital suppose that the capital is sufficient if it decreases the risks as much as possible. The managers suppose that it can be sufficient to ensure the financial bases of activity and the growth of assets. As a result, the leaders of credit companies and supervision services try to find the optimal correlation choosing between the level of bank reliability in order to resist successfully to unexpected financial difficulties (which will be higher than the part of own capital in the general sum of means), and profitability of cap form an account for supervision service. These norms can be called consumer as their main goal is to protect the consumers’ interests, the clients of the bank. The concept of the regulative capital is supposed to pay the unexpected risks, so it should be taken into consideration that then unexpectedness is an approximation to the ambiguity. It follows that the theory excludes the possibility of happening these events and the methodical and practical base under the concept of economic capital which is based on the estimation of default probability and the estimation of its negative consequences for the creditors disappears.

Then the changes of the tendency in bank regulation (the increase of flexibility, exactness, demoralization, market regulation), and the approach of taking into consideration the individual peculiarities of every bank activity cause the new concept of economic capital in 2004 which repulses in the document “International convergence of the change of capital and capital standard new approaches” (Bazel agreement II). Within the supervision oriented at risk we tell about qualitative regulation and the use of signals from the market by supervision services. The methods of qualitative supervision include bank obligation to use self regulation methods, it means the regulation oriented at qualitative features may control the system of managing bank risks and financial features. In the concept of supervision oriented at risk all kinds of risks should be identified and
the level of risks acceptable for the bank should be chased. If the level is high it is necessary to increase the reserves for expected losses and check if the bank is protected against the unexpected losses by the corresponded reserves of capital. So, if in prudential supervision the facts of violation are fixed, in the supervision oriented at risk the causes of possible losses are revealed. The concept of supervision oriented at risk gives supervision the preventive character and directs “the resources of control” to the spheres of bigger risk according to the estimation of the level of risk of business processes. As a result the services of bank supervision made banks to create the capital reserve for the expected losses and the presence of own capital for paying off the unexpected losses: “economic capital” concept. Some scientists suppose that economic capital is the part of bank capital which is able to pay the unexpected (hardly probable) risks. Others understand the notion of economic capital as the sum which is used to pay the unexpected losses linked to bank activity for getting profit and losses. Margaret E. Ozius defines “economic capital” as the means which can be mobilized for paying off the losses. The majority of economists give wider definition to the notion of economic capital as the amount that is necessary for the bank to pay the typical bank risks it collides with to support the definite standard of financial responsibility or in the case of default. They suppose that economic capital is a risk capital defined by the bank with the use of inner models and methods and which is necessary to pay the risk which is peculiar to the bank. Economic capital is called “Risk Adjusted Capital”, “capital at Risk” and is a level of the unexpected losses for a certain time period. Capital at Risk is characterized by risk investment. So, T. L. Chernositova includes into them the credits directed at the development of the new directions of science and technology which foresee great investments. In case of global financial crisis for Russian credit organizations risk capital is the investment into property. So, economic capital is calculated to define its adequacy for paying off the unexpected losses from the risks which are already taken by the banks or the risks which the bank has to get in the future, it means that in its calculation the articles of capital are included which are the reserves for the expected and unexpected losses. We came to the conclusion that the concept “capital at risk” and “economic capital “reflect the risk referring to development conditions .It is obvious that the amount of risks which become a dark spot for bank capital depends on the recognition of the expected risks and on the adequate estimation of the level of the supposed losses. So, if the expected risks are well recognized, it means that they are accounted in the price and
reserve politics, the economic capital can be less, and if badly recognized more. So, economic capital in contrast to the regulative one is a live and unsteady substance.

Economic capital is calculated for a certain period and with definite probability. In some cases it can be more or less necessary in comparison to the regulative capital. It should be mentioned that the regulative services try to exclude the situation when the economic capital will be necessary more than the regulative one. Sometimes relying on the regulative capital the bank comes into the situation when the capital functions are not fulfilled. The volume of regulative capital misleads the regulative services, contractors, proprietors and the bank itself, in case of unfavorable conditions it can cause the total distrust of public to bank account and it can lead to another crisis of bank system. The economic requirements to capital are subjective to a considerable degree and are based on the estimation of risks by bank leaders, depending on the politics and inclination to the risk of the bank and obligatory only for this bank. Bazel committee of bank supervision notes that regulative and economic demands to capital is closely connected. The inner bank demands to differ the own capital in the level of risk provided by the capital. The supervision services do not demand from the banks to pay the risk of liquidity by own capital. The sizes of the actual own capital depend on the inclination of credit companies to the risk to a considerable degree, that is why there are well defined, objective amounts of capital. Some banks also plan to use the models not officially recognized by supervision services to estimate the total credit risk.

So, the main difference of economic capital from the regulative one is that it is calculated to define its adequacy for paying off the risks.

References


