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# Analysis Of The Relationship Between Costs And Firm Growth Using The Example Of The Unicredit Group S.P.A.

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**A B S T R A C T**

A firm is defined as a form of organisation which performs commercial activities in order to generate income to settle costs and generate profit and in such manner as to accomplish certain objectives. Every firm has different objectives which refer to operating business activites and strategic planning, depending on industry, firm size, environment and other conditions.
The subject-matter of this paper is cost behaviour depending on firm size and the way enterprises manage costs in order to optimise their performance. The example of the Unicredit Group will be used to display the analysis of firm growth and cost trend which follows this growth.
The objective of this paper is to display to which extend the Unicredit Group, as a firm, managed costs successfully and whether their growth followed their cost trend according to current economic rules. For this purpose, there will be used scientific methods.

**A R T I C L E I N F O**

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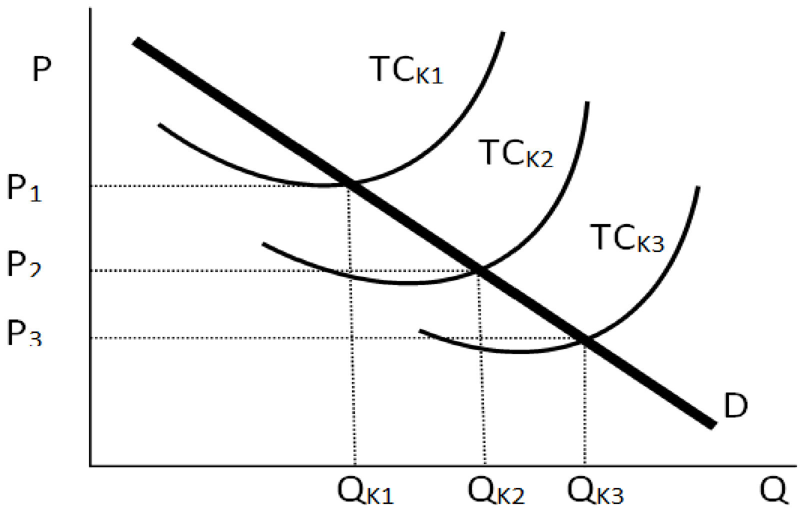
# 1 MICROECONOMIC APPROACH TO THE FIRM

## 1.1 Cost behaviour and firm size

From previous interpretations they accept the assumption that a firm, which aims to optimise its performance, will chose that production quantity that will result in the lowest total average costs. The focus is on three types of firms when talking about firm size – small, medium and large sized. In the following text there will be assumed that there exist only these three firm sizes which are signed as follows: Smalls sized enterprises as $K_1$, medium sized as $K_2$ and large sized as $K_3$.




Picture 1: Cost and firm size trend (by: Author)

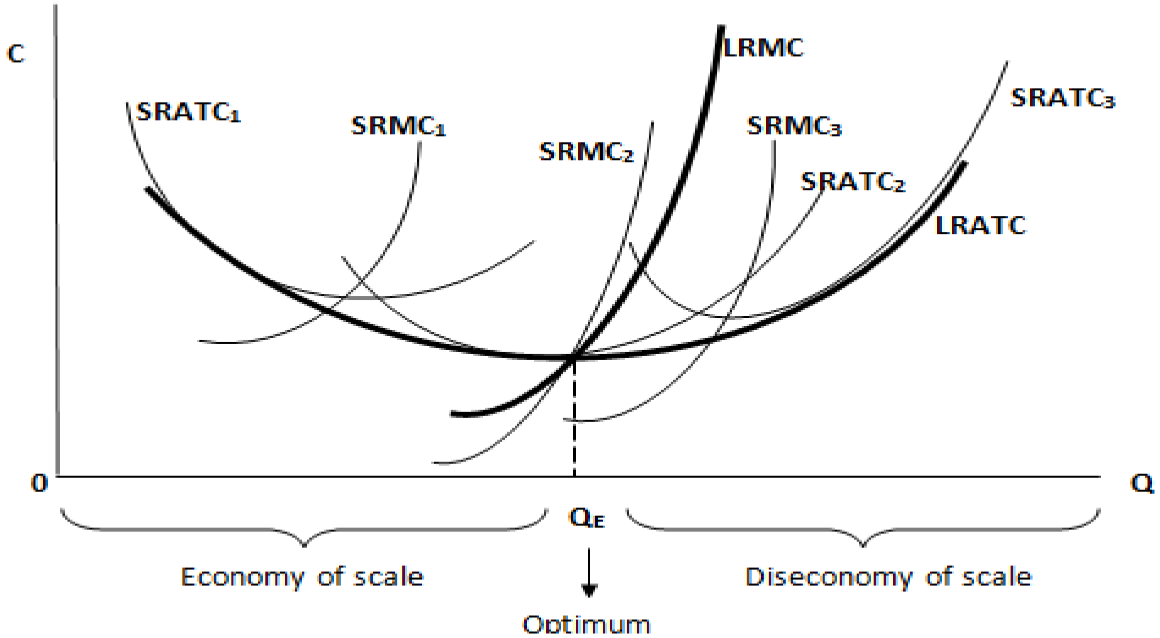
Picture 1 shows the way enterprises of different size are able to respond to current market demand D if they assume to place the output Q which guarantees lowest total costs ($TC_{K1}$, $TC_{K2}$, $TC_{K3}$) and the market price P[1]. Enterprise $K_1$ is able to place the least quantity of output $Q_{K1}$ but has to charge the highest price $P_1$ if they aim to keep their total costs at the minimum. Therefore, it is reasonable to conlude that enterprise $K_3$ is the optimal firm size because it is the most efficient, due to its ability to place the most quantity of output $Q_{K3}$ at the lowest price $P_3$ and still keep its total costs at their minimum. However, is this always the case? To answer this question it is necessary to consider the effects of Economy of scale which is to be discussed in the following text.

## 1.2 Economy of scale and economy of scope

To successfully analyse the cost management of a firm, it is inevitably to mention economy of scale and returns to scale which refer to the correlation of changes in production quantity and in costs with

[1] Arthur, A., Thompson, JR. (1989.): Economics of the Firm: Theory and Practice 5th Edition, New Jersey, Prentice Hall, p. 234

all other conditions not changing. In other words, if one variable changes, it changes the value of another variable. Yet, how might the change of various variables affect the change of another value - production? The answer to this question arises from the theory of the economy of scope. Economy of




Picture 2: Long run total average cost curve (by: Author)

scope is defined as the impact of the change of all inputs on the change of production output[2]. Since this definition mentions the change of all variables, including the fix ones, it is necessary to talk about this concept in the long run which makes it inevitably to regard the behaiour of long run total average costs (hereafter: LRATC) which are significant for decision making.

Picture 2 displays the way how short run total average total costs (hereafter: SRATC) of different sized enterprises affect the LRATC curve. This is due to the fact that the LRATC curve consists of a line of the SRATC minimum of different capacities for a given output. In other words, the LRATC curve consists of the cost optimum of all considered capacities in the short run, but there can be only one optimal one, which is the one that is the tangent to the minimum of the LRATC curve. In this case the optimal capacity, or enterprise size, is the one which belongs to the $SRATC_2$ – enterprise $K_2$. Further growth to capacity $K_3$ would mean a decrease in efficiency and in returns to scale bacause the $SRATC_3$ curve touches the LRATC curve after its minimum when it starts increasing again. Choosing the smaller capacaty $K_1$ would also decrease cost efficiency since the $SRATC_1$ curve touches the LRATC curve before its minimum where it is still possible to decrease costs in the long run and boost business performance.

Economy of scale is explained as follows. An enterprise which has an increasing production quantity, decreases average total costs if the constant conditions remain stable. However, in the long run all

2 Medić, Đ. (2002): Osnove Ekonomije, Drugo izmijenjeno i dopunjeno izdanje, Medinek, Zagreb, p. 129

constant condiotions become variable which is why it is necessary to consider the learning curve to understand how the firm becomes more efficient due to experience – the situation where the same task is repeated in a series of trials[3]. Therefore, by specialising and forming a divisional organisational structure enterprises are able to increase production process efficiency which allows capacitiy or production quantity increase to a certain point. In some point cost efficiency starts decreasing because when the enterprise becomes too large it becomes inert and slow in the meaning of bureaucracy, decision making, and similar. In that regard, economy of scope means that one enterprise producing the same two products is more efficient than two enterprises which of every one is producing just one product[4]. Still, it is important to keep in mind that this concept is true until the point when the average total cost curve hits its minimum. After that point it is more efficient to shift production to two seperate enterprises than to keep the production of both products in one enterprise due to the effects of diseconomy of scope. To conclude, enterprises have to choose the optimal capacity or firm size depending on the type of production, on industry, on market conditions, etc. which does not always mean that larger enterprises are more efficient than smaller ones.

### 1.3 Diversification

As mentioned previously, economy of scope is defined as the situation when there are more than one differents products produced in one enterprise which enables it to decrease costs and to gain competitive advantages. This means that firms are able to achieve a competitive advantage not only by increasing production quantity of one product, but also by diversing the range of products which is especially significant when mentioning diachronic approach to firm growth which regards a firm's growth through a certain period of time. Thus, diversification is defined as assortment expansion by introducing new products which differ from the present ones[5]. By diversifying the assortment firms not only increase production quantity, but also reduce business risk since they do not depend on revenue generated by just one product. There are different ways how to diversify business growth. Enterprises use concentric diversification if they aim to produce new and different products for new markets with their current production technology, whereas when using horizontal diversification as a potential growth strategy enterprises produce new products for new and current markets that are not related to their current production technology[6]. Vertical diversification is applied by backward or forward vertical integration, this implies diversification in terms of integrating other enterprises into the firm's production technology chain, e.g. a bakery aquisiting a flour mill into its organisation structure (forward integration). The third type of diversification is called conglomerate diversification, signifying a growth strategy that includes entering new markets, reaching new customers and placing new products which production technology differs from the current one existing in the enterprise[7].

[3] Arthur, A., Thompson, JR. (1989.): Economics of the Firm: Theory and Practice 5th Edition, New Jersey, Prentice Hall, p. 236

[4] Benić, Đ. (2012): Mikroekonomija – menadžerski pristup, Zagreb, Školska knjiga, p. 112

[5] MASMEDIA (1993): Rječnik Marketinga, MASMEDIA, Zagreb

[6] Kotler P., Keller, K. L. (2007): Upravljanje marketingom - 12 izdanje, MATE, Zagreb, p. 49

[7] Kotler P., Keller, K. L. (2007): Upravljanje marketingom - 12 izdanje, MATE, Zagreb, p. 49

# 2 Banking

## 2.1 Revenue and cost structure of banks

Before examining revenues and costs of banks it is inevitable to first define banking activites which are specific since they greatly differ from business activities of enterprises. There are plenty of ways to define banks, but for the purpose of this paper the most suitable way of defining a bank is to identify its core services. A bank is a credit institution which receives cash deposits from the public - who has the right to withdraw the funded deposits - and grants loans[8] for its own account and in its own name and provide other financing. What distinguishes banks from every other credit institution is the fact that banks recieve deposits from *general public* and they have the right to conduct transaction accounts. Another distinguishing mark is the bank's ability to create money, which usually is a feature of central banks, since it transforms savings into loans.

Once the term „bank“ is defined, it is easier to analyse revenue structure. Bank revenues basically may be devided into interest and non-interest income. Since the beginning of banking industry they have placed loans and charged fees in form of interest payments which have since then represented the main part of revenue. However, the share of non-interest revenue in total revenues is constantly rising, which has several reasons[9]. In order to compete with the non-banking financial sector, banks are forced to decrease interest rates which in return reduces interest margins and, consequently, interest income. The second reason why non-interest income is increasing ist the fact that capital adequacy requirements are keeping banks from investing in high risk loans, which generate high interest revenues, but instead they compensate the income loss with revenue from risk free service and off balance sheet activities. Due to technological development and information technology progress banks got the opportunity to offer new services, such as mobile and internet banking, which are less risky and consequently generate less revenue by unit sale, but these services are used by a significant number of customers which guarantees a certain share in total revenue. In addition, capital adequacy requirements put pressure on banks to increase profit margins and, conesequently, net profit levels which is why banks tend to increase non-interest income since it does not add any extra risk to bank operations. Non-interest income is divided into three main ections by the European union: Capital gain from securities, current income from securities and fees charged for banking

[8] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb, p. 184

[9] Leko, V. (2011): Upravljanje bankama, Ekonomski fakultet Zagreb, Zagreb, p. 130-131

services[10]. The most common banking services are: payment operations, portfolio management services, investment fund management services, broking, and investment banking services.

Costs may also be divided into interest and non-interest expenses. The main interest expenses are related to deposits and other repayable funds, e.g. central bank refinancing or the interbank market, and reserves for expected credit losses which are not a direct interest expense, but they are directly related to credits and represent the difference between book value and and the actual value of credits. The most significant non-interest expenses are general operating expenses, such as wages, rental costs, expenses for office supplies, etc., expenses for information technology and other expenses related to service activities[11].

## 2.2 Performance measurement in the banking industry

Performance measurement in the banking indutry is done through financial statement analysis, financial ratio analysis based on financial statements and through market indicators, which is used for larger banks and those listed on stock exchanges. So, there are accounting and market measures of bank performance[12].

The most significant financial statements for profitability analysis are balance sheet and profit and loss account since there are needed the following four variables to measure indebtedness, liquidity and cost-effectiveness: Net profit, total revenue, net assets and share capital[13].

Return on Asset (ROA) and Return on Equity (ROE) are the basic ratios based on the financial dana which measure indebtedness and indicate business profitability. However, in the banking industry there are needed risk weighted ratios which measure risk-adjusted return in relation to capital allocated[14]. Ratio of risk-adjusted return on capital (RAROC and RORAC), in particular economic capital, and Economic value added (EVA) are the most common risk-adjusted ratios use din business performance measurement. EVA ratio is calculated by deducting cost of capital from operating profit and it displays the value created in a certain period since banks have to generate revenue which has to cover costs of debt, operating costs and has to generate a return on equity for banks' shareholders.

Banks listed on stock exchanges additionally are exposed to market pressures in terms of stakeholders' expectations. Particularly, the risk occurs that a bad image in public might endanger a bank's existence although its business is healthy and stable. This is why there are plenty of market ratios and indicators to measure a bank's performance, but in the following text there will be displayed only the four most significant ones. Calculating book to market ratio is the simplest and fastest way to see whether or not banks generate added value since it shows the way the market is validating the bank's asset value. If this ratio is larger than one, the bank is generating added value (market value exceeds book value) and oppositely, if the ratio is less than one, the bank is losing

[10] Ibid.
[11] Ibid.
[12] Leko, V. (2011): Upravljanje bankama, Ekonomski fakultet Zagreb, Zagreb, p. 148
[13] Ibid.
[14] Ibid., p. 151

value. Earnings per stock equals the relation of net profit and the number of common stocks. This ratio displays the bank's profit efficiency. Dividend per stock is a significant ratio in terms of stockholder satisfaction since this group of stakeholders has certain expectations concerning return on their investment in equity capital. Price-earnigns ratio shows the relation between current market stock price and earnings per stock. This ratio reflects how many times the stock price exceeds earnings per stock or, in other words, whether the market is over- or underrating the bank's stocks.

## 2.3 Risks in the banking industry

Risk may be defined in different ways depending on contexts. In context of the banking industry risk is defined as a contingency, predicted or not, which might have adverse effects on equity capital or revenue[15]. Due to their business contexts, banks are countinously exposed to different risks which is why they are forced to accept and control risks in order to successfully manage them since banks invest borrowed capital (deposits) and are responsible for its safety. Relating to cost devision into interest and non-interest expenses depending on whether the cost is related to credit operations or not, risks may also be divided into credit and non-credit risks[16].

Credit risks are characteristic bank risks because they are about debt recovery, i. e. whether the debtor will be able to settle his liabilities in terms of principal and interest within the agreed maturity period. Credit risk may be measured relatd to every single loan, for the sum of loans per client and for the bank's total loans. Fraud risk is a significant factor related to loans and the executive management,as well as to the owners of a bank. This risk occurs regarding to not complying to ethical principles and policies during the crediting procedures, especially when loans are granted to affiliated persons[17].

There are plenty non-credit risks which is why there will be displayed only the most common ones for the purpose of this paper. Liquidity risk is defined as whether or not banks can meet their debt obligations without realizing great losses which depends on short-term liabilities and liquid assets listed on financial statements, accession to central bank liquidity swaps, etc. Interest rate risk displays the risk that a bank's financial situation may change due to changes in the level of interest rates on bank's deposites or on bank's investments which affects interest income. This risk also depends on the bank's assets and liability management in terms of maturity compatibility. Currency risk refers to the danger of negative changes in asset value or changes in revenues expressed in domestic currency due to fluctuating foreign exchange rates which is why practising currency risk management is a great matter of concern in the banking industry. Two more risks with high impact on potential bank collapse are competitive risk and reputational risk. Competitive risk is defined as the risk of signing hazardous contracts due to competitive pressures which is why clients of high credit worthiness may be lost. Reputational risk occurs because of negative public opinion on bank's business, stbility or

[15] Veselica, V., et al (1999): Aktualni problemi bankarskog sustava i nelikvidnost bankarskog sustava Republike Hrvatske, zbornik radova, Inženjerski biro, Zagreb, p. 89
[16] Veselica, V., et al (1999): Aktualni problemi bankarskog sustava i nelikvidnost bankarskog sustava Republike Hrvatske, zbornik radova, Inženjerski biro, Zagreb, p. 90-91
[17] Leko, V. (2011): Upravljanje bankama, Ekonomski fakultet Zagreb, Zagreb, p. 158

liquidity which is connected to stock market valuation and its consequences in terms of insubstantial decrease or increase stock prices may lead to so called bank runs which result in bankruptcy.

### 2.4 Conglomeration and internationalisation in the banking industry

Conglomeration is a common process nowadays, occurring in form of mergers and acquisitions of banks between themselves or of banks and other financial institutions and in many cases these mergers and acquisitions are performed internationally. Conglomeration or concentration in the bank industry is a form of business integration which can be realised in different ways. Apart from integration of institutions in the same sector (horizontal integration) or of institutions in different sectors (conglomeration), institutions integrate other organisations which are part of their so called „supply chain" (vertical integration)[18]. Banks, as well, may aquire another institution nad make it part of their own organisation structure, or they form a new institution merging with another institution[19]. There are a lot of reasons, such as expanding business to new markets, increasing revenue or enhancing business profitability, for using integration as business strategy. The following text explains the most common reasons for conglomeration, the different ways of conglomeration and their consequences, and the lin between conglomeration and internationalisation.

In order to discuss the motivation for bank concentration it is inevitable to first determine the intention of this process. Motives for entering such a process differ from institution to institution because they depend on business model, on organisation structure and bank size, on the institution the bank is acquiring or merging with, etc. However, the intention of integration and conglomeration is the same in every case. Conglomeration aims to achieve synergy effects in form of increasing business transactions, entering new markets, decreasing cost, increasing diversification and, consequently, reducing risk. There are plenty of motives for conglomeration but they are divided into two main sections: internal and external motives[20]. External motives, such as competition, are putting pressure on banks to adjust to market movements, i.e. banks are forced to integrate other banks and institutions in order to survive. This kind of integration is called conglomeration within the same industry, whereas integrations between banks and other financial institutions is called conglomeration between different industries[21]. Conglomeration between different industries has become the most common type of integration lately and as a result of such integration banks extended to so called „full service banks" which are defined as banks able to provide all financial services along traditional banking services on domestic and international markets[22]. Throughout history banks were forced to implement such a business strategy since they started losing market share in favour of other financial institutions which offered more attractive financial products to their clients which banks were not allowed to due to prudential regulation. However, integrating with other financial institutions ensured a new distribution channel for banks and the banks' expertise and

[18] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb , p. 264-265
[19] Ibid.
[20] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb, p. 267-268
[21] Ibid.
[22] Leko, V. (2011): Upravljanje bankama, Ekonomski fakultet Zagreb, Zagreb, p. 17

technology for the financial institutions in return. Internal motives for using conglomeration as a business strategy are linked to the bank's management[23]. There are two factors which make managers prone to conglomeration. The first factor depends on increasing revenue and business performance, improved reputation and, consequently, retaining their position in the bank, whereas the second motivation factor is connected with the fear of potential takeovers in case the bank's market share decreases to a certain level.

One key intention of conglomeration , previously mentioned, is to achieve synergy effects in form of different indicators which are to be discussed in the following text. Synergy may be created in terms of increased efficiency and profitability due to economy of scale or in terms of reducing risk because of increased diversification. The effects of economy of scale in terms of increasing capacity re achieved by conglomeration of banks, but it is important to keep in mind that during the process of integration there occur certain costs and expenses for the preparation of the proces, during the implementation and after signing all contracts when the process is done, but it is necessary to reorganise business structure. Therefore, it is not to be expected for the effects of economy of scale to be perceived in the initital phase. Banks are financial institutions which are subject to strict prudential regulation which is why they have complex administrative systems. This is the reason why banks despite of increased capacity are not able to achieve greater efficiency and profitaility since, according to researches, after the finalisation of mergers and acquisitions costs inrease due to greater administration and surplus employees which additionally slows down business processes and makes it impossible to decrease espenses due to regulation and industry specificity. Of course, there are positive examples as well, but due to the financial industry's specificity it is reasonable to be prudent about expectations concerning increasing efficiency as an effect of economy of scale. It should be similar with expectations of reducing risk due to diversification. It is assumed that banks, especially concerning conglomeration between different industries, will be able to offer a wider range of financial products to their clients and have a greater access to deposits which is expected to reduce business risk and increase stability after integrating with other institutions. However, market enlargement in terms of offering new and diverse products to different clients, results with a greater number of different divisions within the bank. The problem is the risk that one division might have negative influence on other divisions' results if it is not successful which consequently means that all other divisions are forced to provide financial aid to lower the impact of the division's losses on the bank's results, meaning that due to one division's bad business all other divisions are left restricted in order to maintain the bank's profitability. Therefore, it would be more efficient to operate without the ineffiecient division but in order to satisfy a wider range of clients, banks keep such divisions which has a restrictive effect on business performance.

The following empirical research will show whether the bank achieved the intended effects of economy of scale due to its mergers and acquisitions. An important factor in the case of the Unicredit Group is the internationalisation which has great impact on the Group's business activities. The most common type for either companies, banks and other institutions of entering international markets are

[23] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb , p. 267-268

establishing new offices in foreign countries, mergers and acquistions, joint ventures, etc. In order to make the decision whether to internationalise business activities it is important to consider the following four factors: The degree of economic integration, legislation in different countries, the economic perspective on different markets and migration possibilities for domestic clients[24]. Therefore it is important to consider geographical distance between the markets, the volume of trade between the countries, whether there exists a history of foreign investments between the countries, etc. These factors determine the degree of economic integration which is crucial for entering the new international market, especially if the legislation is less restrictive or more similar to the domestic legislation. Additionally, banks need to measure the new market's profitability, i.e. whether or not they will generate extra profit in the future which is why younger and growing economies are preferred. Migration possibilities to new markets generally refer to business clients and is of importance for banks in terms of the clients' migrations to new markets. Entering an international market the bank's client might need financial services to start a new business which is why the bank wants to support the client either via its own distribution channels or via international partners.

### 2.5 Reasons for bank failure and bank crisis management

Bank crises are becomming more and more frequent nowadays since banks are operating in a turbulent environment which makes decision making and predictions difficult. In the past it was believed that the reasons for bank failure were linked to macroeconomic indicators, but it is evident that there exist successful banks with stable business during crisis, whereas there are banks failing within stable periods of prosperity. This is why bank crises are divided into systemic crises which occur due to macroeconomic reasons and into individual bank crises which are in connection with microeconomic factors. Reasons for bank failure are generally divided into the following three groups[25]: Macroeconomic reasons, management weaknesses and weak prudential regulation and controlling.

Volatility of interest rates and high inflation are the most outstanding macroeconomic causes of bank failure[26]. Volatility of interest rates represents a threat to banks since interest income depends on interest rates which need to be stable in order to predict revenue. Inflation, on the other hand, is a hazardous factor affecting prices which implicate companies' revenues which represent banks' major debtors. If high inflation disrupts prices, companie's liquidity might be weakened which has negative impact on banks' credit receivables since their debtors are not able to refund debts. Such circumstances may lead to bankruptcy. An additional condition which may cause bank crises are abrupt outflows of financial assets as a result of decreasing public confidence which is crucial for maintaining business since banks rely on their costumer's trust in the bank's stability. Finally, GDP is worthy of mentioning as a macroeconomic reason for bank failure since it represents the whole

[24] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb , p. 213
[25] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb, p. 169
[26] Ibid. , p. 250-252

economy of a country which is represented by its companies and businesses. If GDP is decreasing or stagnating, companies' credit ratings are weakening which means that current debtors might fail refunding debts and potential clients are not able to apply for credits.

Management weaknesses[27] are the main reason for bank failure in general since banks may fail even during stable macroeconomic periods if they are not managed adequately. Bank management leads to failure in situations when inexperienced bankers take over top management positions or when experienced managers take the lead in new banks which business activities or hidden problems they are not familiar with and as a result of these circumstances managers make risky decisions. Experienced managers may also have problems with adopting to new and fast changing market conditions in terms of new technology, products, etc., which negatively influences on their managing abilities. Furthermore, the bank's size in terms of „distended“ investments in loans in relation to the bank's equity capital. In other words, if the bank's capital is not adjusted to the risk included in its financial assests in terms of credit receivables, the bank will not be able to cover potential losses due to debtor's failure which might cause decrease in revenue and endanger its stability. If banking business becomes too geographically distended, including uncontrolled diversification, it becomes more difficult for managers to make rational and efficient decisions since the bank is too large. Insufficient internal control is one of the most significant microeconomic reasons for bank failure since it potentiates bad investments, adjusting financial reporting or even fraudulent actions.

When talking about weak prudential regulation and controlling it is most important to mention the deposit insurance system. In case the state's regulation is not strict enough, banks may behave hazardously with regard to bad investments knowing that the government and other institutions are there to cover their losses which endangers clients' deposits.

Since banks are constantly exposed to plenty of risks, they need to be monitored by so called early warning systems which assist the management to ease or even avoid crises. Prediction models of banking crises are divided by the scope of prediction and by prediction methodology[28]. Prediction models by scope of prediction focus on monitoring macro- and microeconomic indicators depending on the bank's requirements, whereas models by prediction methodology focus on signal modeling which includes the comparison of current quantitative values of certain variables and their value in stable circumstances and qualitative modeling which includes discrete instead of numeric variables[29].

However, it is not always possible to avoid crises which is why it is necessary to successfully manage crises once they occur in order to minimize their consequences. With regard to solving a banking crisis there are four basic steps in the solving process[30]. First it is necessary to identify the amount of financial losses caused by the crisis and it is of high importance to accelerate the process of calculation in order to decide how to settle those losses which is part of the solving process. Identifying the losses is significant with regard to understanding the scope of the crisis and with

[27] Leko, V. (2011): Upravljanje bankama, Ekonomski fakultet Zagreb, Zagreb, p. 169-172
[28] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb , p. 255
[29] Leko, V., Božina, L. (2005): Novac, bankarstvo i financijska tržišta, Adverta, Zagreb, p. 255
[30] Ibid., p. 258

regard to informing public (investors, clients, partners, etc.) connected to the bank's business or are directly interested in the bank's welfare. Thereafter it is inevitable to allocate existing losses which are added to the new ones generated through crisis which is wha it is necessary to reorganize the financial structure of liabilities. In this step the management partially makes the decision who is going to settle the „cost of crisis“, in other words, whether the new debts are going to be settled in form of new equity capital, new deposits, or to allow the government to enter the shareholding structure. It is of importance to carefully examine all alternatives in order to make the best decision for all stake holders – shareholders, employees, clients, etc. - in the long run. Finally, the last step of sovling crises contains of the bank's operative reconstruction which is going to take the most time of all steps since it relates to business in the long run. The purpose of operative reconstruction is identifying that business model which will guarantee the bank's welfare in the long run, including changes in the organisational structure, changes in board of directors, process innovation, changes in product assortment, etc. The prior mentioned solving process contains only the basic frame how to approach and overcome banking crises. Although not all crises have the same reasons and scope, these four steps display the general approach to any crisis. In some cases it is possible that the government intends to help solving crises by changing legislation. The government's motivation for such behaviour lies in the bank's size and significance for the economy which is also known as the situation when banks are „too big to fail“, meaning that failure of a certain bank would have such negative impact on the national economy that the government is forced to adjust the legislation framework so that the bank is operating regularly again. However, this kind of adjustment might motivate banks to behave hazardously which is why governments need to be reasonable.

# 3 Analysis of the relationship between costs and firm growth using the example of the Unicredit Group S.P.A.

## 3.1 Short history of the Unicredit Group

The Unicredit Group is the leading banking group in the central an eastern European financial markets operating in 17 countries with more than 143 000 employees. The Group's business activities are based on the following four core businesses: commercial banking, investment banking, asset management and asset gathering[31].

[31] Official website of Unicredit Group (online): www.unicreditgroup.eu , 18.05.2016

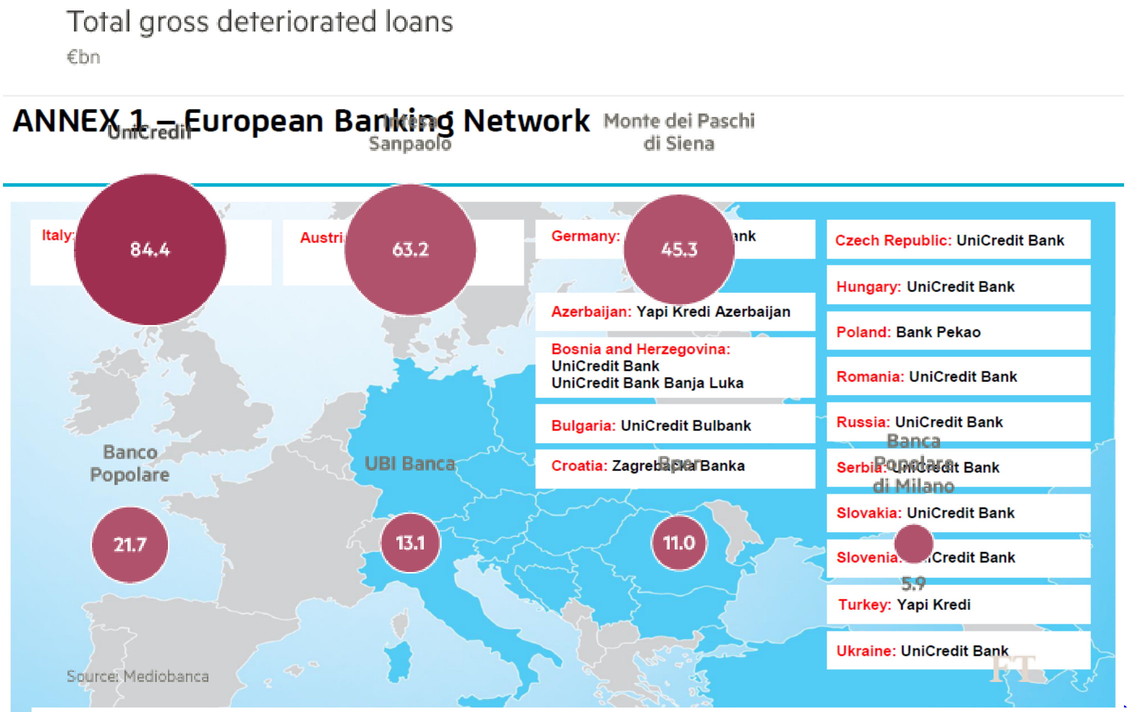
The hisory[32] of the Unicredit Group goes back to 1870 when Banca di Genova (later renamed Credito Italiano) was founded and which represents the fundament of todays banking group which was joined by several banks founded even earlier later during acquisitions and mergers. In 1993, just two years after being privatised, the Credito Italiano bank entered its first acquisition process with the Rolo Banca 1473 Group. After containing five member in 1998 the Group changes its name into UniCredito Italiano and creates its typical logo which has been maintained until today. One year later the Group acquires the Pekao SA. bank from Poland which is the Group's first international acquisition. Afterwards the Group starts expanding to eastern, south-eastern and central European markets.

Picture 3 shows the geographical spread of the Unicredit Group's members throughout Europe and Asia and gives insight into the Group's international representation and complexity. With Alessandro Profumo at the postition of CEO, the Group started different processes in order to expand to the german and eastern European markets with high growth potential in 2004. By then the Unicredit Group had already acquired several banks and other financial institutions from Poland, Bulgaria, Slovakia, Croatia, Romania, th Czech Republic and Turkey, starting in 1998.

Because of the Group's continued boom they started the project „S3“ in 2001 in order to reorganise

Picture 3: Geographical spread of the Unicredit Group members (Source: Company profile as at March 31, 2016)

the business model thereby dividing the organisational structure into three main sections: retail banking division, corporate investment banking division and commercial banking which includes banking services for individuals[33]. I 2005 the Unicredit Group acquired the German Hypo- und Vereinsbank and the Austrian Bank Austria which represents a large step in the process of expanding

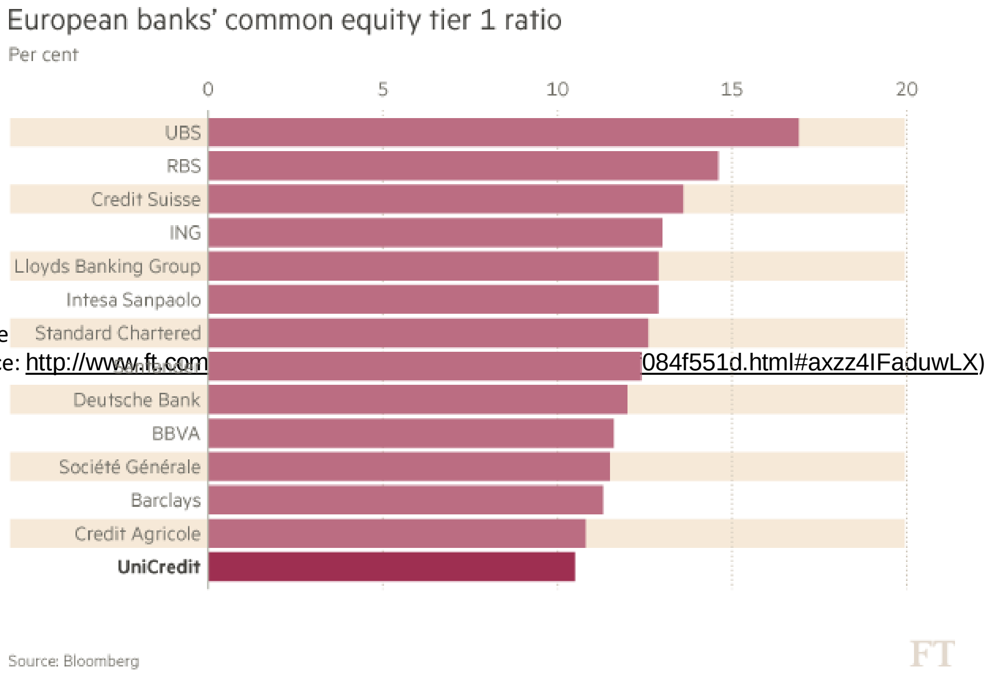



Picture 4: Toral amount of bad debts in the Italian banking system in 2016
(Source: http://www.ft.com/cms/s/0/4bfcad98-2249-11e6-9dea-6c9f084f551d.html#axzz4IFaduwLX )

to central Europe. Two years later the Group acquired banks and financial institutions in Ukraine, Kazakhstan, Tajikistan and Kyrgyzstan, which is how the Group finally entered the central Asian market.

To conclude, the Unicred Group managed to expand business activities to 17 countries and to add all other financial services to its typical commercial banking activities within less than ten years. However, in favour of achieving the most attractive acquisitions the Group had to act fast due to competitive pressures which is why some less beneficial acquisitions have been made. The effects of these bad decisions showed in 2008 during crisis.

In fact, according to Bloomberg, the Unicredit group owns a total of 84 billion Euros of bad debts which is almost 20% of its total credit receivables. Consequently, the Group has the worst credit portfolio among Italian banks which is displayed on Picture 4. Additionally, the bank is exposed to high geopolitical risks due to fast international expansion and business activities on geographically spreaded markets which makes it obvious that such an abrupt expansion affects management quality. International business activities resultet in doubling working positions which increased costs to the




Picture
(Source: http://www.ft.com 084f551d.html#axzz4IFaduwLX)

amount that about 61% of rvenue is needed to settle operating costs which will be discussed in the following chapters. An additional negative impact on financial stability is achieved by constantly decreasing revenue in the domestic country due to economic crisis which burdened the backbone of Italian economy and the bank's majority of clients - small and medium enterprises.

The second great issue connected with geographically distended business activities is capital adequacy. The Tier 1 capital ratio, which shall represent at least 6%, measures capital adequacy and is calculated as the the sum of equity capital and reserves in relation to risk weighted assests. Picture 5 shows that Unicredit's Tier 1 Capital ratio was 10,8% at the end the first quartal 2016[34]. This is the least ratio among all Italian banks and close to the minimum of 6% which leads to the conclusion that the Group's system security and financial stability are at risk. According to Barclay's analyses it would take the Group another 6 billion Euros to increase the Tier 1 Capital ratio up to 12,5% by 2018 which represents nearly two thirds of its current market capitalisation[35]. In other words, the Unicredit

[34] Laurent, L. (online): „UniCredit: This Savior needs saving", 2016., available at: http://www.bloomberg.com/gadfly/articles/2016-05-23/unicredit-needs-new-management-and-capital-increase, 23.05.2016
[35] Ibid.

Group may be forced to sell its worthiest member institutions, e.g. acquired banks in Poland and Austria, in order to solve the problem of capital adequacy, but it might be necessary to additionally cut on costs with regard to generating the required profits. Therefore, the Group is on thin ice in terms of solvency and capital adequacy, especially when talking about the large amount of high risk credit receivables which may arise doubts among the shareholders. If the shareholders lose trust in the Group's management and financial stability, the Group maight suffer great losses since the importance of shareholders confidence was displayed earlier.

### 3.2 Financial statement analysis

For the purpose of this paper there will be analysed the consolidated financial statements of the Unicredit Group for the period from 2005 to 2015 which are available at the Group's official website[36].

#### 3.2.1 Fundamental analysis of Balance sheet and Profit and Loss Account of the Unicredit Group

In order to simplify the analysis the period of ten years is divided into the period prior to global economic crisis (2005-2008) and the period after crisis (2009-2015). The focus will be on assets, liabilities, revenue and cost since there is a lot of data included in the financial statements which is not relevant for this paper.

The most significant items of the balance sheet are loans and receivables with customers and other banks, deposits, equity capital and financial assets held for trade. Total active and passive assets are of importance for the analysis since their changes indicate bank growth. The Group's total assets in 2005 were 787 284 mil. € and represent the starting point of this analysis. By the end of 2008 this value increased by 32,81% which is significant for a three year period, considering that in 2007 there was a pounce of 24,1% regarding to 2006 which is explained by the acquisition wave in central Asia. There occurred an even greater increase in loans and receivables by 38,28% in the same period due to the same reasons. Changes in deposits and equity capital are interesting – deposit increase by 27,33% and equity capital increase by 56,25% during the period from 2005 to 2008 – since their values start decreasing after acquisitions in central Asia in 2007 which indicates the emerging crisis. This assumption is confirmed by a number of ratios connected with the balance sheet, especially by return on equity – ROE which is constantly increasing until 2007 ($ROE_{2007}$=16.8%), but then starts decreasing and falls to 9,5% in 2008. It is of importance to mention that the average equity capital in relation to total assets is just 5% and the average capital adequacy ratio (capital divided by risk weighted assets) is 10,69% which is close to the minimum of 8% assigned by the Basel Accords[37]. Another significant ratio emerging crisis is economic added value (EVA) which increased more than 170% during the acquisition period until 2007, whereas it plummeted in 2008 to a negative value

[36] Unicredit Group (online): https://www.unicreditgroup.eu/en/investors/financial-reports.html?topmenu=INT-TM_INV4_en004
[37] Pavković, A. (2004): Instrumenti vrednovanja uspješnostiposlovnih banaka, Zbornik ekonomskog fakulteta u Zagrebu, p. 186

which indicates that gross profit does not cover cost of equity. These changes in ratios indicate future problems with capital adequacy.

Analysing the profit and loss account there may be identified a significant increase in interest revenue of 61,02% during the period from 2005 to 2008 which is positive, however, the impact on total revenue is doubtful since interest revenue is only 50% of total revenues. Non-interest revenue records a decrease of 15% caused by great losses in investment activities prior to crisis in 2008 which eliminate the actual increase of this item. It is remarkable that net fees and comissions constantly increase by 20% throughout the whole period, except of the year 2008 during crisis. Constantly increasing operative costs (total increase of 39,55%) and increasing net write-downs on loans and provisions for guarantees and commitments by 62,78% have negative influence on allover results of the Group. Profits, whether gross or net, increased by an average 20% a year from 2005 to 2008 regardless of negative trends since bad debt bubble was still growing and going to show its effects in the future. Cost income ratio increased from 56,5% in 2005 to 62,1% in 2008 which means that more than 60% of generated income is needed to cover business costs and is predicting the negative trend in business activites.

After 2008 balance sheet items take a negative course which is linked to previously mentioned bad debt and economic crisis. In fact, asset value decreased by 11,18% in 2009 in comparison to 2008 which is to be continued – except of a few smaller increases - during the whole period with a total decrease of 7,36 % by 2015. An even greater decrease is recorded in deposits which fell by 20,2%. Decrease in equity capital of 16,09% during this period endangered capital adequacy and the Group's stability in general. However, the Group maintained the required capital adequacy ratio due to continously increasing capital ratio, but in relation to the Group's size and geographically dispense it is on the edge of sustainability. Profitability ratios are constantly decreasing as well during this period. Loans and receivables with banks and clients also decrease more than 13% which is linked to net write-downs on loans and provisions for guarantees and commitments. This trend affects profit as well which will be discussed in the following chapters. However, profit decrease and losses have great impact on return on equity which is why ROE ratio decreased by 64% during this period, and in relation to 2005 even by 68% and reached a value of 3,38% by 2015. With regard to cost of capital and inefficiency of business activities EVA is negative through the whole period and decreased by even 420% from 2005 to 2015 which means that the Group generates less revenue than is needed to settle capital of cost.

Taking a look at the profit and loss account the effects of the Group's bad loans become evident. Although they managed to decrease operative costs by 18,42% from 2008 to 2015 which is important for organisational reconstruction and saving policies, throughout the whole ten year period this item increased by 2,72%. However, the item which had the greatest impact on profit decrease of 57,78% is the cost of net write-downs on loans and loan receivables which increased by 11,19% since 2008 and in the period from 2005 to 2015 by even 81%. Changes in profits are also negatively influenced by decrease in interest and non-interest revenue which results in total decrease in operating income of 19% from 2008 to 2015.

### 3.2.2 Cost analysis of the Unicredit Group

The previous chapter already provided great insight into the Group's cost structure and trends which is why the mentioned results will be further analysed and associated with firm growth in the following text.

Firm growth may be displayed by several variables and for the purpose of this paper growth will be monitored by changes in total assets and number of employees. Changes in total assets are affected by business success which is why the Group's assets start decreasing at the beginning of economic crisis in 2008 which does not mean that the Group's size declines. It is important to mention that assets abruptly increased until 2007, especially the increase of 24,12% from 2006 to 2007 which is directly linked to the great acquisitions in Asia and after these the Group's size does not significantly change anymore. The same trend may be noticed with the number of employees which also increased and then started falling in 200. This change is linked to saving policies which include dismissals, but the constant increase in employees until 2008 is significant and a result of the numerous acquisitions. The costs of the great acquisitions in Asia affected total costs so that operating costs increased by 25,61% from 2006 to 2007 which is expected, but the effects of economy of scope are visible in 2008 when total costs start decreasing which is a sign of improved efficiency. However, in 2008, due to the beginning of economic crisis, the Group's weaknesses in terms of size and the quality of the credit portfolio show their impact on the business performance. Net profit decreases by almost 40% in 2008 in relation to 2007 which is to be continued through the next years. After 2012 Unicredit Group manages to achieve declines in operating costs which is linked to employee dismissals so that the number of employees decreases by 15,5% in 2013 and this negative trend is to be continued. However, total costs increase due to previously mentioned write-downs of loans which constantly increase more than the decline in other costs. It is evident that these trends endanger the Group's stability. It is important to notice that net profit decreased by more than 57% since 2008, whereas equity capital increased by just 10% average a year which is why return on capital decreased by 60%. Evidently, the Group is not able to build capital reserves from excess profit which makes future problems with capital adequacy inevitable. Another negative indicator is the cost income ratio which is constantly over 60%, whereas the ratio calculated as costs of write-down of loans divided by income is 25,53% as an average for the ten year period which shows that the Group spent about 25% of its income to cover bad debts. This situation raises doubts among investors and the public which puts additional pressure on the Group's management and leads to the conclusion that the Unicredit Group is too big to be efficient.

# 4 Conclusion

At the beginning of this paper it is assumed that a firm may decrease costs in the short and long run by achieving growth since average costs may be decreased by fully exploiting its capacities or even expanding capacities in the long run. However, it shows that small firms may be effiecient, too, or achieve even lower cost optimums than large firms meaning they are more profitable and use their resources more efficiently. This is explained through the effects of economy of scale and economy of scope.

This approach is used to analyse the financial situation and cost trends of the Unicredit Group for the period from 2005 to 2015. The Group records great growth until 2007 when the last larger acquisitions are performed. During this period costs in connection with the acquisition increase, but yet the next year total costs start decreasing which is a result of declining operating costs. An important characteristic of the Unicredit Group which makes it prone global ecnonomic issues is the fact that its members are geographically dispersed which additionally exposes the Group to high geopolitical risks. This risk shows its effects in 2008 when global economic and financial crisis takes its toll and the Group's costs of wrtie-downs of loans skyrocket which displays the bad quality of its credit portfolio. The wek diversification of the Grou's credit portfolio is due to its fast growth and the competitive pressures in the competition for the best acquisitions where Unicredit Group agrees on less quality contracts. Recovery from crisis is difficult since the bank as a creditor relies on the health of the economy its debtors operate in. The Group's inefficiency also shows through the cost income ratio which indicates that more than half of the Group's income is needed to settle operating costs. Therefore, it is necessary to change management structures and decrease the Group's size in order to achieve declines in cost. The Unicredit Group is implementing a savig plan, including employee dismissals and reconstruction of divisions into centers, but the question is in which manner the Group will be able to continue operating with a smaller number of employees but increased business. Obviously this is not he optimal solution since the cost income ratio keeps increasing, although operating costs decline. The reason for the Group's inefficiency are high costs of write-downs of loans and receivables which portion in total costs is constantly increasing. Therefore, it is necessary to reorganise the credit portfolio.

The negative trends in allover business performance affected capital adequacy which decreased to a level of 10,8% measured with Tier 1 Capital ratio meaning that Unicredit Group needs to either increase equity capital or decrease high risk assets in terms of bad debts in order to improve stability and the Group's welfare.

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