

TC.
MARMARA ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İŞLETME ANABİLİM DALI
MUHASEBE FİNANSMAN(İNGİLİZCE) BİLİM DALI

**BASEL II: ITS IMPLICATIONS ON TURKISH
BANKS AND SMEs IN SAMSUN**

Yüksek Lisans Tezi

MURAT EMİR

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Danışman: DOÇ. DR. JALE ORAN

İstanbul, 2009

Marmara Üniversitesi
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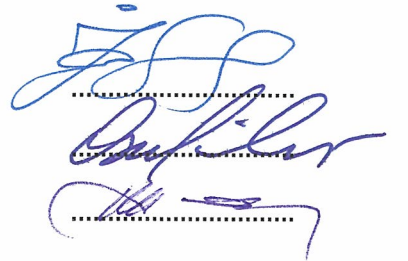
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ABSTRACT

Basel I, was issued in 1988 to set the capital standards for banks. However, Basel I, has been deeply criticized because of its deficiencies in measuring of banking risk since the first day. In order to cover these deficiencies in Basel I Standards, Basel Committee introduced a new proposal for bank capital standards and made it available for discussions in 1999. The proposal has been revised a number of times and finally it was issued as of June 26, 2004.

Although the main goal of Basel II is to provide financial stability, SMEs would also be affected. Basel II Capital Accord, which is directly in connection with banking sector in Turkey, is surely going to have important effects both on banking sector and on real sector by these rules. By the application of Basel II, the cost of loans will depend on the risk levels calculated scientifically unlike as it is in traditional procedures of credit risks. Some various criteria such as sorts, terms, collaterals, credit rating of loans will affect the cost of loans. In this framework, SMEs being well managed, having capital strength, refraining from informal activities, being committed to transparency through releasing necessary information on time will have the chance to access to best financing conditions. Therefore, they will potentially get the best ratings.

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ÖZET

Bankacılık sektöründeki ilk sermaye standardını 1988 tarihli Basel I Uzlaşısı oluşturmuştur. Ancak bu Uzlaş, yayımlandığı ilk günden itibaren eksiklikleri nedeniyle eleştirilmeye başlanmıştır. Bu eksikliklerin giderilmesi amacıyla, yeni bir bankacılık sermaye standartları taslağı Basel Komitesi tarafından 1999 yılında tartışılmaya açılmıştır. Basel II olarak da bilinen bu taslak, yeni bankacılık sermaye standartları olarak 26 Haziran 2004 tarihinde Basel Komitesi tarafından yayınlanmıştır.

Basel II'nin asıl amacı bankacılık sektöründe istikrarı sağlamak olmakla beraber, KOBİ'lerin de bu düzenlemelerden etkilenmesi kaçınılmazdır. Ülkemizde bankacılık sektörünü yakından ilgilendiren Basel II Sermaye Uzlaşısının uygulanmaya başlaması ile birlikte, söz konusu Uzlaş metninin bankacılık sektörüne ve reel sektöre önemli etkileri olacaktır. Basel II uygulamaları ile birlikte, artık kredi maliyetleri geleneksel kredi sürecinden farklı olarak, bilimsel olarak hesaplanmış risk düzeyleri ile doğru orantılı olarak değişecektir. Kullanılan kredinin türü, vadesi, teminatı, firma kredi notu gibi çeşitli kriterler firmaların kullanacakları kredilerin fiyatına yansıtacaktır. Bu kapsamda iyi yönetilen, güçlü sermaye yapısına sahip, kayıt dışı faaliyetleri bulunmayan, iyi finanse edilmiş ve gerekli tüm bilgileri zamanında ve yeterli bir şekilde sunarak şeffaflığı sağlayabilen KOBİ'ler potansiyel olarak en iyi dereceyi almak suretiyle, en iyi şartlarda finansman olanaklarına erişim imkanına sahip olacaklardır.

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Samsun, 2009

Murat EMİR

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ABBREVIATIONS

AIRB	Advanced Internal Ratings Based Approach
AMA	Advanced Measurement Approach
BCBS	Basel Committee on Banking Supervision
BCP	Basel Core Principles
BIA	Basic Indicator Approach
BIS	Bank for International Settlements
BRSA	Banking Regulation Supervision Agency
CAR	Capital Adequacy Ratio
CCF	Credit Conversion Factors
CEBS	Committee of European Banking Supervisors
CRA s	Credit Rating Agencies
EAD	Exposure at Default
ECA	Export Credit Agency
ECAI	External Credit Assessment Institution
EEA	European Economic Area
EL	Expected Loss
EU	European Union
FSA	Financial Services Authority
ICI	Istanbul Chamber of Industry
IMA	Internal Model Approach
IRB	Internal Ratings-Based
LDA	Loss Distribution Approach
LEF	Loan Equivalency Factor
LGD	Loss Given Default
M	Effective Maturity
OECD	Organization of Economic Cooperation and Development
PD	Probability of Default
QIS	Quantitative Impact Study
QIS TR	Quantitative Impact Study For Turkey
RR	Recovery Rate
RWAs	Risk-Weighted Assets
SA	Standardized Approach
SDIF	Savings Deposit Insurance Fund
SME	Small- and Medium-sized Enterprise
SSA	Simplified Standardized Approach
TCL	Turkish Commercial Law
TRL	Turkish Lira
UL	Unexpected Loss
VAR	Value at Risk

1. INTRODUCTION

Basel II can be defined as the set of standards developed by the Basel Banking Regulation Committee. This committee acts as the regulatory authority on behalf of BIS that was established by the participation of G-10 countries' Central Bank Governors in 1975¹. In other words, Basel II has been introduced to create an international standard for banking regulators who can use them to create regulations about the necessary capital amounts to guard against financial and operational risks faced by banks. These standards are expected to become valid in many countries. It is usual since recent financial crises that have been spread to world markets with strong effect because of globalization. Moreover, previous studies showed that inefficiencies in risk management sourced these crises². In this context, the performance of the SMEs, which play a crucial role in the market economy, is also affected from these challenges and new international regulations³. SME size companies are advised to take necessary steps prior to Basel II implementation 2009. These standards also cover previous years while measuring the riskiness of a company. The Basel II capital accord encourages financial institutions to develop their own rating systems for evaluating the default risk.

According to Basel II, banks should develop their own internal rating system or get this service from an external rating institution. For Turkey, it is obvious that credit rating activities reduce the unregistered economic activities and increase the overall efficiency. By using credit rating, Turkish SMEs may protect their credibility.

SMEs have significant importance in the Turkish economy as well as they have in the economies of many developing and developed countries. For OECD members, number of SMEs to total number of firms is greater than 97%⁴. SMEs having very important share in Turkish economy affected the changes of competitiveness and technological environments as well as alterations of rules and regulations that govern

¹ BCBS, About the Basel Committee, 2001, <http://www.bis.org/bcbs/index.htm> (10 September 2007), p.1.

² BCBS, Implementation of Basel II: Practical Considerations, July 2004, <http://www.bis.org/publ/bcbs109.htm> (10 June 2007), p.33.

³ BRSA, Basel II Quantitative Impact Study 2 (QIS-TR2) Evaluation Report, 2007, http://www.bddk.org.tr/websitesi/english/Announcements/Press_Releases/353225_07_2007_QIS-TR2_ing..pdf (10 August 2007), p.20.

⁴ Edward Altman and Gabriele Sabato, "Modelling Credit Risk for SMEs: Evidence from the U.S. Market", *Abacus*, Vol. 43, No.3 (September 2007), p.333.

business applications and economic activities. Since they have lean organizational structure, SMEs respond to changes usually faster compared to larger corporations. However, there are various difficulties of SMEs such as managerial shortcomings caused by lacking of professional managers and skilled employees, problems in the process of institutionalization, deficiencies in management information systems, and insufficiencies of capital, all of which are caused by an organizational structure common to all SMEs.

Therefore, Basel II, one of the most important issues of the financial system in Europe, is the center of attention of both credit companies and SMEs in Turkey as this risk-based credit rating system will have radical effects on the types, limits, costs and terms of credits.

Thus, the effects of Basel II Regulation on both credit processes of SMEs in Turkey and in banking sector examined. Specifically, the purposes of the study were (i) to explore the potential effects of Basel II to SMEs and their access to bank for lending based on the survey conducted on SMEs in Samsun and (ii) to detect potential problems faced by SMEs during the implementation of Basel II in Turkey. Then the study answered the questions: “Turkish SMEs are ready for Basel II standards?” “How much Turkish banking sector is ready for Basel II standards?”

With this respect, the paper is comprised of six main sections. The first part of the thesis described a brief overview of the Basel I and II frameworks. The next, summarized the new credit capital rules of Basel II and risk. The following part aimed to explain the rating system. Then the impact of Basel II on SMEs and on Banks explained. The city case examined focusing on SMEs financial knowledge. SMEs in Samsun analyzed to discover their Basel’s information and to detect the potential problems from different perspectives in final section.

2. THE LITERATURE REVIEW

The Basel Committee has performed several “quantitative impact studies” to test the outcome of the new rules on banks’ regulatory capital. However, the focus of such studies was to evaluate the new and the old regulation and to decide whether the new regulation would give way significantly lower capital requirements.

The development of empirical models that successfully discriminated between failing firms and the surviving firms started in the mid 1960s. The pioneer research included Beaver (1966) and Edward I. Altman's (1968) work in business failure classification by the use of the univariate and multivariate discriminant analysis (MDA). Beaver (1966) defined failure as bankruptcy, bond default - an overdrawn of bank account, or nonpayment of a dividend on preferred stock. Altman (1968) defined failure as a company that had filed a bankruptcy petition. Newton (1975) perceived that firms in financial distress passed through four stages of deterioration before declaring bankruptcy: incubation, cash shortage, financial insolvency and total insolvency.

The essence of this technique is an issue of classification under numerous assumptions. It assigns a score (the Z score) to each of the observed firms in a sample. The Z score is a linear combination of several independent variables. Based on the sample results, a cutoff score established that divides the firms into two different groups based on the score. The general MDA form expressed as; where, Z is the score used to classify the object, α is the constant term, β_j are the discriminate coefficients or weights, X_{jt} are discriminate variables.

Merton (1974) conducted to evaluate the usefulness of the financial ratios that constructed from the financial statements in discriminating and predicting financial distress firms. Merton modeled the holding of a company’s debt as being equivalent to holding debt of a risk free company plus being short a put option on the assets of the company. If the value of the assets falls under the value of the debt, the shareholders can put the company’s assets to the debt holders and avoid repaying the debt, given that they are normally covered by limited liability arrangements.

Other group of models includes those that seek to impute implied PD from the term structure of yield spreads between default free and risky corporate securities. Third class of models are the capital market based models, which include the mortality rate model of Altman (1989) and the aging approach of Asquith, Mullins and Wolff (1989). The latest approaches include the application of neural network to support the risk classification. Despite of the variety of approaches used in failure prediction, statistical methods, like discriminate analysis and remain the main stream of the descriptive school of thought. In general, these models have been featured with high classification accuracy, cost and time saving, as well as convenience in application in solving real world problem.

Modern concepts about distress include that: Lau (1987) defined financial distress as a three stages process: incubation, deficit funds-flow, and financial distress or recovery. Gilbert, Menon, and Schwartz (1990) defined distress firms as firms that declared bankruptcy and firms that had negative cumulative earnings over three consecutive years. Stephen A. Ross (1996) stated, "Financial distress is a situation where a firm's operating cash flows are not sufficient to satisfy current obligations and the firm is forced to take corrective action".

Juttner and McCarthy (2000) found a structural break in ratings assessment in 1997 in the wake of the South-East Asian crisis. "Econometric estimates may convey wrong or meaningless signals to investors during a rating crisis; there is no set model or framework for judgment which are capable of explaining the variations in assignment of sovereign ratings over time".

Gordy (2003) found that "IRB approach is closely linked to key results of modern asset pricing theory. Its methodology is based on a model that establishes the likelihood of a borrowing company being unable to repay its debt, as determined by the difference between the value of its assets and the nominal value of its debt".

Sironi and Zazzara (2003) worked about the proposal. "The proposal does not consider the capital requirements system only, but also revise the role of supervisory authorities and of private investors in disciplining banks' risk-taking activities".

Alper and Onis (2003) argued that weaknesses in the regulation of both public and private banks contributed significantly to the emergence of crises in the case of Turkey.

Altman, Resti and Sironi (2004, 2005) modeled the credit risk. Three main variables affect the credit risk of a financial asset: (i) the probability of default, (ii) the “loss given default”, which is equal to one minus the recovery rate in the event of default, and (iii) the exposure at default. While significant attention has been devoted by the credit risk literature on the estimation of the first component (PD), much less attention has been dedicated to the estimation of RR and to the relationship between PD and RR. The works of Calem and LaCour-Little (2004) can be given as the examples of such study about the stability of the banking system.

Berger (2006) specifically focuses on the effects of Basel II on banks in the US SME credit market. He used secondary data and the results of the QIS3. Seventeen of the 22 responding institutions provided estimates of the A-IRB adoption effects on their SME portfolios showing an average reduction of 33% in required credit risk capital. Altman and Sabato (2006) investigated the effects of the New Basel Capital Accord on bank capital requirements for SMEs in a number of European countries as well as the U.S. and Australia. According to Altman and Sabato, banks will be faced with the choice of incurring higher regulatory capital requirements for SME corporate exposures or incurring additional organizational and technical costs to meet the Basel II risk management standards for retail treatment of SMEs.

Yilmaz and Kucukcolak (2007) studied the effects of Basel II on SMEs. “Only 5-7 % of the bank credits are extended to the SMEs operating in Turkey. Further, these firms are not accustomed to use credits from abroad. Therefore, it would take time for the SMEs to improve their corporate structure to the new conditions”.

Elkhoury (2008) worked about credit rating agencies and their potential impact on developing countries. He emphasized, “The recent bankruptcies of Enron, WorldCom, and Parmalat have prompted legislative inspection of the agencies. Criticism has been especially directed towards the high degree of concentration of the

industry. The effect of such concentration has been the absence of the discipline enforced by competition and a low level of innovation.” CRAs' role has expanded with financial globalization and has received an additional boost from Basel II that incorporates the ratings of CRAs into the rules for setting weights for credit risk.

IMF and OECD highlighted the importance of financial crises in their recent reports. The works of Laeven and Valencia (2008), Furceri and Mourougane (2009) can be given as the examples of such studies about financial crises. “Fiscal costs first arise from using public funds to clean up financial markets and/or protect depositors and banks stakeholders. The financing of these measures will tend to deteriorate public finance situation, unless taxes are increased. Weakness of the regulation and supervision of the financial system is viewed as a major factor, contributing to the emergence of bank failures and financial crisis”.

3. BASEL CAPITAL ACCORD

3.1 THE BASEL COMMITTEE

BIS is an international organization that fosters international monetary and financial cooperation and serves as a bank for central banks. Established on 17 May 1930, the BIS are the world's oldest international financial organization.

Within the BIS, the most significant group is possibly the BCBS, a Committee that provides a forum for cooperation on banking supervisory matters. This Committee develops guidelines and supervisory standards. Other supervisory groups have developed to cater to geographical needs⁵. The central-bank Governors of the Group of Ten countries established BCBS in 1975 in the aftermath of serious disturbances in international currency and banking markets following the failure of the Franklin National Bank in New York and the Herstatt Bank in West Germany, which left many of these banks' counterparties in the foreign exchange market with significant losses. It consists of senior representatives of bank supervisory authorities and central banks from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Sweden, Switzerland, United Kingdom and the United States. It usually meets at the Bank for International Settlements in Basle. It usually meets at the Bank for International Settlements in Basel, where its permanent Secretariat is located⁶.

3.2 BASEL I

The 1988 Basel Capital Accord was a milestone. For the first time, supervisors in the main banking markets agreed on a definition of capital and a minimum requirement⁷.

Basel I addressed only the largest, internationally active banks in G-10 countries and encouraged countries outside the G-10 to adopt the principles for their banks that were operating internationally. It was eventually recognized as a global

⁵ Marion Williams, *Governing the Global Financial System*, 2008, **Initiative for Policy Dialogue Task Force on Financial Market Regulation**, Manchester University, U.K: Columbia University, July 1- 2 2008, p.7.

⁶ BCBS, 2001, p.1.

⁷ Jaime Caruana, "Consequences of Basel II for SMEs", 2003, *BIS Review*, <http://www.bis.org/review/r030714d.pdf> (24 February 2008), p.1.

standard and adopted by over 125 countries. There are only 11 countries across the world that has not adopted the Basel Accord⁸. The themes of it, however, were intended to apply to all banking organizations of any size and activity around the world. Basel I has been generally viewed as simplistic and inadequate to address the emerging problems of promoting global financial stability through bank regulation and supervision⁹. This Accord was to ensure a level playing field for internationally active banks. This would be achieved by the imposition of minimum capital requirements for credit (including country transfer) risk, although individual supervisory authorities had discretion to build in other types of risk or apply stricter standards¹⁰. Relative to what had come before; it was a major breakthrough – not least in the general acceptance and implementation of its capital requirements well beyond the membership of the Basel Committee¹¹.

The Basel II-ratio was developed from the Basel I ratio. Firstly, this ratio only considered credit risk. The requirements were that the capital seizure had to be at least 8% of the risk weight asset. To calculate the risk weight asset, banks multiply several assets with the associated risk percentages. The capital seizures are to be covered by the tier one and tier two capitals. The Basel I (1988) – ratio is calculated with formula 1:

The components, which are included in the BIS I – ratio are generally described as following:

$$\text{Basel I (1988) - ratio} = \frac{\text{Tier1} + \text{Tier2}}{\text{RWA}} \quad (1)$$

RWA= Risk Weighted Assets. These are the added up assets, weighed with the associated risk percentage. The RWA are stipulated at calculating the capital seizure for credit risk.

⁸ Adolfo Barajas, Ralph Chami and Thomas Cosimano, “Did the Basel Accord Cause a Credit Slowdown in Latin America?”, **Economía**, Volume 5, No. 1 (Fall 2004), p. 136.

⁹ Dorene Isenberg and Ronnie Phillips, “Will Basel II Hurt Community Banks in the Macroeconomy?”, **Annual Meetings of the Association for Evolutionary Economics**, Philadelphia, Pennsylvania, January 7–9, 2005, p.17.

¹⁰ BCBS, International Convergence of Capital Measurement and Capital Standards, July 1988 <http://www.bis.org/publ/bcbs107.htm> (10 September 2007), p.8.

¹¹ Stanley Fischer, “Basel II: Risk Management and Implications for Banking in Emerging Market Countries”, , **International Conference of Banking Supervisors**, Cape Town: Citigroup, 19 September 2002. <http://www.petersoninstitute.org/fischer/pdf/fischer091902.pdf> (18 June 2007), p.4

Tier1 = A term used to describe the capital adequacy of a bank. Tier I capital is core capital; this includes equity capital and disclosed reserves.

Tier2 = A term used to describe the capital adequacy of a bank. Tier II capital is secondary bank capital that includes items such as undisclosed reserves, general loss reserves, subordinated debt of five years.

In 1996, another ratio was applied, this will be referred as the Basel I (1996) – ratio. Because market risk was not taken into account in the old Basel Accord of 1988, so an extra element was taken into the formula. As a result the capital seizure for market risk is incorporated into the denominator of the Basel I ratio. The numerator was extended with the tier 3 capital to cover the market risk. For more details, one will be referred to formula 2:

$$\text{BIS I (1996) – ratio} = \frac{\text{Tier1} + \text{Tier2} + \text{Tier3}}{\text{RWA} + 12.5 * C_{mr}} \quad (2)$$

The components, which included in the BIS I (1996) – ratio are generally described as following:

Tier3= A term used to describe the capital adequacy of a bank. This is the subordinated term debt of a maximum of two years.

C_{mr} = Capital requirements for market risk.

However, the basic credit risk capital measurement framework remained unchanged, although the definition of assets and capital has changed over the years in response to financial innovation. Although the Basel I framework helped to ‘level the playing field’ and to stabilize the declining trend in banks’ solvency ratios, it suffered from several problems that became increasingly evident over time¹²:

· *Lack of sufficient risk differentiation for individual loans.* The weights did not sufficiently differentiate credit risk by counterparty (i.e. financial strength) or loan, (e.g.

¹² Constantinos Stephanou and Juan Carlos Mendoza , “Credit Risk Measurement Under Basel II: An Overview and Implementation Issues for Developing Countries” , *World Bank Policy Research Working Paper*, No. 3556, April 2005, pp.3–4.

pledged collateral, covenants, maturity) characteristics. For example, the capital charge for all corporate exposures was the same irrespective of the borrower's actual rating. This implied that banks with the same CAR could have very different risk profiles and degrees of risk exposure.

- *No recognition of diversification benefits.* Standard portfolio theory recognizes the risk reduction benefits attained from diversification. However, because Basel I was based on the 'building blocks' approach, there was no distinction or difference in capital treatment between a well-diversified (less risky) loan portfolio from one that is very concentrated (and hence riskier).

- *Inappropriate treatment of sovereign risk.* Basel I's capital treatment for sovereign exposures made little economic sense, and the mechanical application of these rules often created perverse incentives and led to the mispricing of risks. For example, lending to OECD governments became more attractive because it incurred no regulatory capital charge, even though this group included countries with substantially different credit ratings such as Turkey, Mexico and South Korea. Claims to the national central government also enjoyed a zero risk weight, encouraging many banks (particularly in developing countries) to ignore basic diversification principles and lend heavily to their sovereigns (directly or through state-owned enterprises), thereby reducing financial intermediation.

- *Few incentives for better overall risk measurement and management.* The lack of emphasis on other risk types (e.g. interest rate, operational, business) and on financial infrastructure, issues (e.g. accounting, legal framework) did not provide adequate incentives to encourage complementary improvements in banks' risk governance and measurement. As a result, there was often an excessive reliance on, and a false comfort from, a high capital adequacy ratio. Subsequent experience has shown that such a ratio, by itself, is meaningless in the absence of other supporting measures.

At the national level, a banking supervisor, usually but not always the central bank, determined the capital base for a specific bank. It was calculated based on disclosed balance sheet items weighted according to judgments about their underlying

risks. Over time, banks began to complain about the calculative basis of the charge, arguing that it was arbitrary and did not discriminate sufficiently between the different risk profiles of specific banks, or between different risks within a single bank. Indeed, the 1988 Basel accord was not at all risk sensitive¹³.

Among the intrinsic weaknesses of the Basel I was its failure adequately differentiate between levels of credit risk in assets, in general, and commercial and industrial loans, in particular. A proposal to extend these accords to cover market risk was published in April 1993¹⁴. Under the proposed revisions to the Accord, the revised standards will more closely align economic and regulatory capital requirements by incorporating either internal or external credit ratings into the regulatory capital standards, and by allowing the capital requirement on assets to vary as the credit rating of a borrowing entity changes. The proposed revisions stand in marked contrast to Basel I under which all-commercial loans were assigned the same risk-based capital weight, so making regulatory capital requirements invariant with respect to changes in credit risk¹⁵.

3.3 BASEL II

When Basel I was issued, the BCBS recognized that it was only an initiate, and that more modification would take place over time. As financial instruments, systems and products became more complex; the BCBS began designing a new regulatory capital framework. This framework, Basel II, incorporates advances in risk measurement and management practices, and attempts to assess capital charges more precisely in relation to risk. The international agreement (framework or mid-year text) articulating this Basel II principle was issued in June 2004¹⁶. The proposed rule is 448 pages long and full of acronyms and mathematical formulas. The common perspective of Basel II is mainly related to the consolidated supervision approach and the general

¹³ Vieten Holger, "Banking Regulation in Britain and Germany Compared: Capital ratios, external audit and internal control", **PhD London University**, 1996, p.28.

¹⁴ David Marshall and Subu Venkataraman, "Bank Capital Standards for Market Risk: A Welfare Analysis", *Working Paper, Federal Reserve Bank of Chicago*, 1999 p.4.

¹⁵ Kevin T. Jacques, "Capital Shocks, Bank Asset Allocation, and The Revised Basel Accord", **Review of Financial Economics**, Vol. 17, No.2 (2008), p.80.

¹⁶ Richard M. Riccobono, "Basel Study of Banking System", **FDCH Congressional Testimony**, <http://www.house.gov/financialservices/media/pdf/051105rr.pdf> (11 November 2007), May 2005, p.2.

status of Basel II implementation indicates that most of the countries fail on this issue. IMF and World Bank emphasized the importance of this failure in their reports¹⁷.

Table 3.1
Changing Regulatory Environment

1988	Regulators recognized need for risk-based Capital for Credit Risk (Basel Accord)
1995	Capital Regulations for Market Risk Published
1996- 98	Capital Regulations for Credit Derivatives
1997	Discussion of using credit risk models for selected portfolios in the banking books
1999	New Credit Risk Recommendations • Bucket Approach - External and Possibly Internal Ratings • Expected Final Recommendations by Fall 2001 • Postpone Internal Models (Portfolio Approach)
2001	Revised Basel Guidelines • Revised Buckets - Still Same Problems • Foundation and Advanced Internal Models
2004	Final Draft of Consultative Paper • Final Version - June, 2004 • Implementation in 2007
2004- 05	National processes • Further testing/impact studies, to guide national discretion choices • Legislation and national rule-making • Banks plan for implementation
End 2006	G10 implementation of simpler methodologies
End 2007	G10 implementation of advanced methods
2007-?	Extended transition period for non-G10

Source: BIS

¹⁷ Andrew Powell, "Basel II and Developing Countries: Sailing through the Sea of Standards", Universidad Torcuato Di Tella and The World Bank, *World Bank Policy Research Working Paper*, No. 3387, September 2004, p.10.

With the new capital adequacy framework of Basel II, the relationship between customers and their banks will change drastically. This has caused a new definition of affiliation of both parties involved, meaning that the relation in general will become tighter and more intensive. With Basel II, getting a loan will become more difficult for a number of SMEs¹⁸.

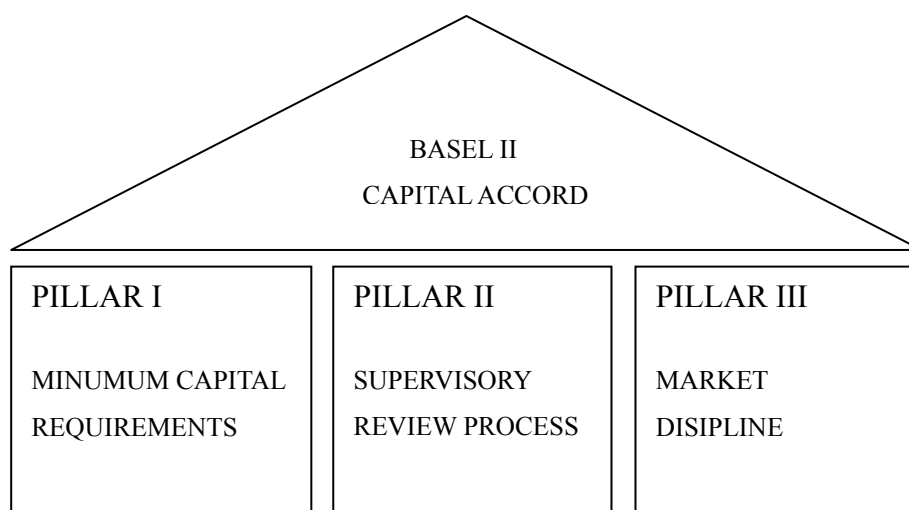


Figure 3.1 The structure of Basel II

Basel II intends to build on a solid foundation of prudent capital regulation, supervision, and market discipline, and to enhance further risk management and financial stability. As such, the Committee encourages each national supervisor to consider carefully the benefits of the new Framework in the context of its own domestic banking system and in developing a timetable and approach to implementation. Given resource and other constraints, these plans may extend beyond the Committee's implementation dates (Figure 3.1)¹⁹.

3.3.1 The First Pillar: The Minimum Capital Requirements

The *first pillar* associates the minimum capital requirements with banks' actual underlying risks. There are three kinds of risks, which are within the reach of the first

¹⁸ Johannes Jager, "Basel II: Perspectives of Austrian banks and small and medium sized enterprises", 2005, University of Applied Sciences of bfi Vienna, <http://basel2.fh-vie.at/files/00551782750.pdf> (17 February 2008), p.18.

¹⁹ BCBS, Basel II: International Convergence of Capital Measurement and Capital Standards: a Revised Framework, June 2004, pp 12-190.

pillar, namely: credit, market and the operational risks (These will be explained in risk title.). Many banks will rely on external measures of those risks to determine their capital requirements. These might include credit ratings issued by external rating agencies or supervisors' assessments of the degree of operational risk inherent in a variety of businesses. More advanced banks, in comparison, may qualify to rely partly on their own measures of those risks when determining their capital requirements. This improvement may help to create economic incentives for banks to advance those measures.

$$\text{Basel II-Ratio}^* = \frac{\text{Tier1} + \text{Tier2} + \text{Tier3}}{\text{RWA} + 12.5 * C_{mr} + 12.5 * C_{or}}$$

Total risk-weighted assets are determined by multiplying the capital requirements for market risk and operational risk by 12,5 (i.e. the equal of the minimum capital ratio of 8%) and adding the resulting figures to the sum of risk-weighted assets for credit risk.

3.3.2 The Second Pillar: Supervisory Review

The *second pillar* lets supervisors to evaluate each bank's assessments of its own risks and to determine whether those assessments seem realistic. Eventually, each bank's management is responsible for assessing and reacting prudently to all of the risks that a bank faces, including those that may not be considered under the first pillar. The second pillar will therefore encourage a channel of communication between banks and their supervisors on the nature of the risks that banks face and the measures they take to control them, including holding aside sufficient levels of capital. That channel of communication creates great implicit incentives for management to undertake careful evaluations of the bank's capital needs²⁰. This pillar is a major concern for most regulators worldwide.

Pillar II actually covers very little material that is not already in the Basel Core Principles but is more specific on a number of issues. This serves a useful purpose for

* C_{or} = Capital requirements for operational risk.

²⁰ Ewa Kania, "Basel II and Emerging Economies", **Vadyba / Management**, Vol. 10, No.1, 2006, p.72.

emerging countries, as compliance regarding Pillar II type issues within the Basel Core Principles remains particularly weak. Pillar II starts with four key principles and then lists a set of “other risks” that banks and supervisors need to consider that did not make it into Pillar 1 regarding actual quantitative requirements²¹:

The four key principles commence with the responsibility of the bank (a set of internal processes for assessing capital adequacy including not only credit risk but also market risk, liquidity risk and interest rate risk) and second the responsibility of the supervisor. Third, Pillar II states categorically that supervisors should normally “expect” banks to operate with capital above the regulatory minimum and should have the ability to require banks to have more than any standard minimum amount. Fourth, it states that supervisors should seek to intervene at an early stage in the case of problem institutions. After the four key principles, Pillar II lists a set of “other risks” that a bank must be capable of analyzing including interest rate risk, credit concentration risk and liquidity risk. To a large extent these “other risks” are risks that banks need to monitor carefully, but where there is not (yet) agreement on whether or how quantitative requirements could be developed (BCP 1- 22).

Supervisors may become little tyrants imposing unjustifiable burdens on the banking industry, since Basel II itself places no clear boundaries on the power of the supervisor, emphasizing in contrast the extent to which his or her judgment is to be used. The other extreme is to have supervisors that are simply intimidated by the responsibilities that are attributed to them, simply rubber-stamping whatever banks present to them. This is particularly probable in the case of large banks that may easily use their “rocket-scientist” risk managers to intimidate less prepared supervisors²².

3.3.3 The Third Pillar: Market Discipline

The Committee aims to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess key pieces of

²¹ Powell, p.11.

²² Fernando J. Cardim de Carvalho, “Basel II: A Critical Assessment”, *Institute of Economics*, Brazil, March 2005, http://www.ie.ufrj.br/eventos/seminarios/pesquisa/basel_ii_a_critical_assessment.pdf (11 January 2007), p.19.

information on the scope of application, capital, risk exposures, risk assessment processes, and hence the capital adequacy of the institution. Market discipline can contribute to a safe banking environment, and supervisors require firms to operate in a safe manner. By enhancing transparency in banks' financial reporting, the third pillar provides counterparties, investors, and other market players with more information on a bank's risk profile; that increases their capability to distinguish and reward banks that are well managed, while penalizing those that are not²³.

The Committee also wishes to highlight the need for banks and supervisors to give appropriate attention to the second and third pillars of the revised Framework. It is critical that the minimum capital requirements of the first pillar be accompanied by a robust implementation of the second, including efforts by banks to assess their capital adequacy and by supervisors to review such assessments. In addition, the disclosures provided under the third pillar of this Framework will be essential in ensuring that market discipline is an effective complement to the other two pillars.

3.4 COMPARISON of BASEL I and II

It was argued in the two preceding sections that Basel I and Basel II are in fact very different documents in spirit, the first one directed at equalizing competitive conditions among international banks and the latter at establishing new rules of prudential regulation.

Basel II is not really an improvement over Basel I. Rather, it crystallizes a change of direction that took place unexpectedly in the early 1990s, when Basel I was almost universally adopted as the foundation of a new strategy of prudential regulation and, not surprisingly, as argued before, was found wanting. For Basel I, conceptual questions related to risk and stability are not as important as for Basel II. It is not central to Basel I the precise definition of each class of risks since what really matters is to make them more or less equally costly to banks that may be very similar in structure and field of operation. For the same reason, Basel I was not conceived to be as market-friendly as Basel II is.

²³ BCBS, The New Basel Capital Accord Part 4: The Third Pillar – Market Discipline, April 2003, <http://www.bis.org/bcbs/cp3part4.pdf> (18 January 2008), p154.

Basel I is openly prescriptive because its goal was to set restrictions on activities of banks, curbing those gains that were due mostly to cost advantages created by differences in regulation. Basel II, instead, intends to nudge banks into improving their methods of risk management. Basel I was inspired by cost considerations; Basel II by vulnerability to risks. These are deeply different goals and the “success” of Basel I in the 1990s does not really augur anything definite for Basel II.

Basel I focused on credit risk because, apart from fraud, credit risk has been the most common cause of bank failures. The architects of the Accord stressed two objectives: simplicity and the avoidance of micro-managing bank lending decisions²⁴.

²⁴ Richard J. Herring, “The Rocky Road to Implementation of Basel II in the United States” , **International Economic Society**, Vol. 35 (December 2007), p.413.

4. BASEL II and RISK

To encourage greater financial stability, the Basel Committee combined several policy approaches to replace the existing capital adequacy framework. While the overall goal may be impressive, how best to measure risk and equate it with required capital remains a difficult question to answer²⁵.

Basel II requires a sound capital base from the banks to offset the “credit risk”, “market risk” and “operational risk” that may arise from their operations.

4.1 CREDIT RISK

Credit risk has been traditionally defined as default risk, i.e. the risk of loss from a borrower/counterparty’s failure to repay the amount owed (principal or interest) to the bank on a timely manner based on a previously agreed payment schedule. Another comprehensive definition would actually include value risk, i.e. the risk of loss of value from a borrower migrating to a lower credit rating without having defaulted²⁶.

One of the most significant risks that banks confront is Credit Risk. Financial liberalization, increasing competition among financial institutions, development of credit market, spreading of the derivative markets, and using financial instruments have created difficulties in managing the credit risk by the banks²⁷.

Credit risk affects almost every financial contract. Therefore, the measurement, pricing and management of credit risk have received much attention from financial economists, bank supervisors and regulators, and from financial market practitioners. Following the recent attempts of the BCBS (1999, 2001) to reform the capital adequacy framework by introducing risk-sensitive capital requirements, important the

²⁵ Mark Illing and Graydon Paulin, “The New Basel Capital Accord and the Cyclical Behaviour of Bank Capital”, *Bank of Canada Working Paper 2004*, 30 August 2004, p.10

²⁶ Stephanou, p.6.

²⁷ Sadiye Oktay and Halime Temel, Basel II Kriterleri Ekseninde Ticari Bankalarda Kredi Riski Yönetiminin Karşılaştırılmasına Yönelik Bir Saha Çalışması, **ZKÜ Sosyal Bilimler Dergisi**, Vol 3, No. 6 (Aralık 2007), p.163.

international regulatory, academic and banking areas have devoted additional attention to the subject of credit risk measurement²⁸.

Three main variables affect the credit risk of a financial asset: (i) the probability of default, (ii) the “loss given default”, which is equal to one minus the recovery rate in the event of default, and (iii) the exposure at default. While significant attention has been devoted by the credit risk literature on the estimation of the first component (PD), much less attention has been dedicated to the estimation of RR and to the relationship between PD and RR. This is mainly the result of two related factors:

First, credit pricing models and risk management applications tend to focus on the systematic risk components of credit risk, as these are the only ones that attract risk-premium. Second, credit risk models usually assumed RR to be dependent on individual features that do not react to systematic factors, and to be independent of PD²⁹. The building blocks of economic capital for default-related credit risk explained below³⁰:

4.1.1 Expected Versus Unexpected Loss

Although credit losses naturally fluctuate over time and with economic circumstances, there is (*ceteris paribus*) a statistically measured, long run average loss level. Assume for example that, based on historical performance; a bank has come to expect around 2% of its loans to default every year, with an average recovery rate of 50%. In that case, the bank’s EL for a credit portfolio of \$2 billion is \$20 million (i.e. \$2 billion x 2% x 50%). As can be inferred, EL is based on three parameters:

- The likelihood that default will take place over a specified time horizon (PD)
- The amount owned by the counterparty at the moment of default (EAD)
- The fraction of the exposure, net of any recoveries, which will be lost following a default event (LGD).

²⁸ Edward Altman and others, “The Link between Default and Recovery Rates: Theory, Empirical Evidence and Implications”, **Journal of Business**, Vol. 78, No.6, 2005, p. 2212.

²⁹ Edward Altman, Andrea Resti and Andrea Sironi, “Default Recovery Rates in Credit Risk Modeling: A Review of the Literature and Empirical Evidence”, **Economic Notes**, Vol. 33, No. 2 (July 2004), p. 184.

³⁰ Stephanou, pp.6–13.

Since PD is normally specified on a one-year basis, the product of these three factors is the one-year EL as follows:

$$EL = PD \times EAD \times LGD$$

EL can be aggregated at a variety of different levels, although it is typically calculated at the transaction level; it is normally mentioned either as an absolute amount or as a percentage of transaction size. It is also both customer- and facility-specific, since two different loans to the same customer can have a very different EL due to differences in EAD and/or LGD.

Credit risk, in fact, arises from variations in the actual loss levels, which give rise to the so-called unexpected loss. Statistically speaking, UL is simply the standard deviation of EL.

4.1.2 Probability of Default

Financial institutions have usually attempted to minimize the incidence of credit risk primarily via a loan-by-loan analysis carried out during the credit underwriting process.

The measurement of a PD pre-supposes the use of a definition of default that has tended to vary across credit institutions, thereby hindering comparisons. The definitions have started to converge in recent years, while Basel II adopts a reference default explanation to facilitate comparability of capital results.

Several techniques have subsequently been developed to calculate PD, which can be divided into two broad categories: empirical and market-based (also known as structural or reduced-form) models. The former use historical default rates associated with each score to identify the characteristics of defaulting counterparties, while the latter use counterparty market data (e.g. bond or credit default swap spreads, volatility of equity market value) to infer the likelihood of default.

The empirical approach uses historical default data to characterize counterparties that default. This was originally done using discriminate analysis (Z

scores) however more recently has been done with logit or probit regressions to define a score function S of the form:

$$S(x_i) = b_1x_1 + b_2x_2 + \dots + b_nx_n$$

The vector x contains the relevant risk factors, which in the case of business counterparties may be primarily financial statement ratios and non-financial information (e.g. management quality, years in operation); for retail customers, this might include income, work history and other demographic data.

The statistical model generates an ordinal score that ranks counterparties according to their likelihood of default, or it can directly provide an unadjusted PD. In both cases, the results of the model need to be calibrated to obtain a cycle-neutral cardinal scale.

By contrast, the market-based approaches use current market data about debt and/or equity to “back out” a market-driven measure of PD³¹. The PD can be easily derived from equity prices if one supposes that market capitalization is a good proxy for the value of the firm’s assets and that asset values (E) are normally distributed. On this basis, a distance to default (DD) concept can be defined as:

$$DD = (E - D) / \sigma_E$$

Where D is the expected future level of debt and σ_E is the observed volatility of asset prices. If E drops below D , the company would default and, assuming that the company’s value is normally distributed, the PD is equal to the area under the curve.

4.1.3 Exposure at Default

EAD refers to the outstanding amount at the time of default. In the simple case of a loan, the exposure is supposed to be fixed for each year and can be derived from the

³¹ Robert C Merton, "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates", **Journal of Finance**. Vol. 29, No. 2, May 1974, pp. 449-70.

agreed amortization plan. In the case of lines of credits or any other type of revolving facility, EAD is generally estimated using empirical data by looking at the distribution of utilization levels of credit lines prior to the moment of default, as expressed in the following equation:

$$\text{Exposure at Default} = \text{Current Exposure} + LEF \times \text{Unutilized Portion of the Limit}$$

Loan Equivalency Factor represents the portion of the unutilized line that is expected to be drawn down before default. Generally, a “race to default” takes place whereby lines are quickly drawn down shortly before default. Counterparties that default despite having a good credit rating generally default due to an unexpected ‘disaster’ (e.g. fraud) and have less time to draw down credit lines, as opposed to counterparties that have been slowly downgraded and will increasingly utilize their credit lines.

4.1.4 Loss Given Default

LGD is the percentage of the EAD that is lost in the event of a default. Its calculation requires answering the following questions:

- How much is recovered and from where (e.g. collateral liquidation)?
- How long did it take to recover and what is the financial cost (i.e. interest income forgone) associated with this period.
- How much had to be spent in the recovery process (i.e. workout expenses).

There are three main kinds of LGD measurement³². The first one (workout LGD) is based on the estimation and timing of cash flows and costs from the workout process:

$$LGD = (EAD - \text{Recovery} + \text{Admin}) / EAD$$

³² Til Schuermann, “What Do we Know About Loss-Given-Default?”, *Federal Reserve Bank of New York*, February 2004, [http://www.newyorkfed.org/research/economists/schuermann/Schuermann_LGD-What do we know 1.5.pdf](http://www.newyorkfed.org/research/economists/schuermann/Schuermann_LGD-What_do_we_know_1.5.pdf) (18 March 2008), pp.1-8.

Recovery refers to the present value of the total recovered amount and is a function of the country (legal regime, court efficiency and insolvency proceedings), loan seniority, industry and collateral presence (type, amount etc.). *Admin* includes all the related workout costs that were incurred (e.g. legal and collection fees). Workout LGD is by far the most common approach in the case of most loan types, particularly for a bank that has sufficient historical loss experience with these variables.

The second kind of LGD measurement (market LGD) can be observed from market prices and trades of defaulted bonds or loans after the actual default event. In the exceptional case that a liquid distressed debt market exists, LGD can be written as:

$$LGD = (Value\ before - Value\ after) / Value\ after$$

where *Value* refers to the valuation *before* and *after* (i.e. sale price, reflecting the markets expected present value of eventual recovery) the time of default. Because these transactions take place at arm's length, they are less subject to potential valuation problems. This approach based on most studies of the rating agency's recovery.

Finally, the third kind of LGD measurement (implied market LGD) is derived from the prices of fixed income and credit derivatives products using a theoretical asset-pricing model. This approach essentially 'backs out' LGD from the credit spreads of risky (but not defaulted) bonds or from credit default swap prices, but it is limited in scope (traded debt only) and subject to methodological problems.

4.2 MARKET RISK

This is the risk of a loss, due to the day-to-day potential of an investor to experience losses from fluctuations in securities prices. The developments in credit and equity markets along with the impact of e-commerce mean that market risks have become more significant for banks and have to be monitored on an on-going basis.

Thus in January 1996, the Committee issued an amendment which measures and applies capital charges in respect of the market risks arising from banks' open positions in equities, traded debt securities, foreign exchange, commodities and options.

This sets the capital requirements for banks' exposures to certain trading-related activities, including counterparty credit risk and the treatment of double default effects³³.

Bank modeling techniques were most advanced in the area of market risk, i.e. the risk to portfolios of assets arising from changes in underlying market variables, so this made good sense. In addition, it is in the nature of these models that their quality can be rigorously back-tested. Thus, in the case of market risk, models could almost entirely replace regulatory discretion (although they can be subject to an arbitrary regulatory 'multiplier'). This also signifies a shift in the political economy of banking regulation, whereby powerful actors participate as insiders in information production rather than as lobbying outsiders. In turn, regulators establish consensus at the common level of principles and classification schemes, a strategy that shifts politics from the policy level to that of implementation³⁴.

4.3 OPERATIONAL RISK

Operational risk includes not only small things such as trade failures, loss of documents, power cuts and strikes, an increase in insurance premium and tax effects, actions associated with internal and external frauds; employment practices and workplace safety; clients, products, and business practices, but also traumatic events such as bomb attacks, fires, damages to physical assets; business disruption and system failures; or execution, delivery and process management³⁵. This definition includes legal risk, but excludes strategic and reputation risk.

All of these incur losses with varying frequency and severity. Logically, a bank should hold capital to cushion the effect of such events. Nevertheless, the question is how probability of loss and the cost of capital should quantify. Basel II wanted to add a

³³ BCBS, Proposal to issue a Supplement to the Basle Capital Accord to cover market risks, January 1996, <http://www.bis.org/publ/bcbs16.pdf> (10 September 2007), pp 1-7.

³⁴ Michael Power, "The Invention of Operational Risk", *Review of International Political Economy*, Vol.12, No. 4 (October 2004), p.582.

³⁵ Gary Rice, "Getting ready for Basel II", *International Financial Law Review*, Vol. 25, No.8 (August 2006), p.44.

capital charge for operational risk, to be based on a consensus of calculations done by the banks themselves³⁶.

This new focus of the Regulatory Authorities on operational risks has indeed had a great impact on the banking sector. Unlike credit and market risks, whose awareness within the banking industry roots back very far in the past and whose importance had already been recognized by the Basel I Accord, operational risk in the financial sector is a fairly new concept and thus in need for precise modeling and measurement methodologies. Indeed, except for fraud, most banks had in the past a tendency to neglect this heterogeneous family of risks that were perceived as too diffuse and peripheral. For the same reasons, until recently, few banks had set up a systematic collection of data relative to operational losses³⁷.

An overview of the methods for risk management within the scope of the revised framework is shown in table 4.1.

Table 4.1
Risk Measurement Approaches

CREDIT RISK	SIMPLIFIED STANDARDIZED APPROACH	STANDARDIZED APPROACH	INTERNAL RATING BASED APPROACH		
			FOUNDATION	ADVANCED	
MARKET RISK	STANDARDIZED APPROACH		INTERNAL MODELS APPROACH		
OPERATIONAL RISK	BASIC INDICATOR APPROACH		STANDARDIZED APPROACH	ALTERNATIVE STANDARDIZED APPROACH	ADVANCED MEASUREMENT APPROACH

³⁶ Power, p.585.

³⁷ Ariane Chapelle and others, "Basel II and Operational Risk: Implications for risk measurement and management in the financial sector", *National Bank of Belgium Working Paper*, No.51 (2004), p.1.

4.4 CREDIT RISK MEASUREMENT APPROACHES

Basel II has risk management embedded in it; so it will be a driving force for bringing improvement in risk management capabilities of banks. Basel II provides incentive to banks having good risk management and punishes those that are not managing their risk profile appropriately by requiring higher capital.

Risk management is an important issue for financial institutions, portfolio managers, and regulators alike. Traditional measures of risk-adjusted returns, such as the Sharpe ratio, the Treynor ratio, and Jensen's alpha, are based on the capital asset pricing model, and focus on both sides of return distribution.

4.4.1 The Simplified Standardized Approach

The Simplified Standardized Approach is not so much a different approach as a collection of the simpler alternatives across the different topics – credit risk measurement, credit risk mitigation, securitization and operational risk. The SSA approach is the closest to Basel I as regarding basic credit risk measurement there is only, in the first instance, a finer calibration of capital to risk for sovereigns using average official Export Credit Agency ratings. The advantage of this is that it replaces the old “OECD rule” under which sovereign members of the OECD attracted a zero capital charge whereas non-OECD members attracted 8%. Corporate claims would go on to attract a minimum 8% capital charge. Considering the implementation of Basel II in a emerging country banking system, sovereign ratings are frequently less important as banks tend not to lend too much of their portfolio abroad and in that case the SSA is then similar to Basel I across the board 8% minimum requirement³⁸.

However, even under SSA’s basic approach to credit risk there are some differences to Basel I³⁹: “First, there is a difference in lending to a bank’s own sovereign – or holding bonds of the sovereign in an investment account. If the loan funded and lent in the sovereign’s own currency, then this may attract minimum a zero capital charge, if not, it would attract the charge relevant to the rating of the sovereign. Again,

³⁸ Powell, pp. 16-18.

³⁹ Powell, p.17.

this refers to the replacement of the Basel I “OECD rule”. However, this was rarely applied to a bank’s own sovereign and hence there was something of a vacuum. It is not clear whether developing countries will apply Basel II as written when it comes to bank’s own sovereign. In practice, there is a growing list of developing countries that do already apply capital charges to lending to their own sovereign and that go beyond Basel II. This is an area where further consideration is certainly required.

Second, the altered sovereign ratings feed into different ratings for banks. Under SSA, loans to other banks attract a capital requirement that corresponds to one rating “bucket” worse than the sovereign itself does. Third, Basel II SSA would allow residential mortgages to have a minimum 35% risk weight (under Basel I this was 50%). Fourth a 75% minimum the retail exposures and fifth a 150% weight for loans in arrears if provisions are less than 20% (previously this was not specified and hence 100% with the presumption that provisioning would increase). Six, there is a subtle change for short term lending to banks. Under Basel I, shorter-term loans (initially under 12 months and then reduced to 6 months) to banks attracted a 20% charge”.

4.4.2 The Standardized Approach

In determining the risk weights in the standardized approach, banks may use assessments by external credit assessment institutions recognized as eligible for capital purposes by national supervisors⁴⁰. Claims on sovereigns and their central banks will be risk weighted as follows:

Table 4.2
Risk Weight for Sovereigns

Credit Assessment	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight	0%	20%	50%	100%	150%	100%

Source: Basel Committee on Banking Supervision (June 2004).

There are two options for claims on banks. No claim on an unrated bank may receive a risk weight lower than that applied to claims on its sovereign of incorporation.

⁴⁰ BCBS, The Standardised Approach to Credit Risk , May 2001, <http://www.bis.org/publ/bcbcsca04.pdf> (17 April 2007), pp.6-11.

Under the first option, all banks incorporated in a given country will be assigned a risk weight one category less favorable than that assigned to claims on the sovereign of that country. However, for claims on banks in countries with sovereigns rated BB+ to B and on banks in unrated countries the risk weight will be capped at 100%. This is also important for Turkey whose sovereign rating being BB-, lies within this bracket. The second option bases the risk weighting on the external credit assessment of the bank itself with claims on unrated banks being risk-weighted at 50%. Note that each of the major private banks in Turkey has a long-term rating of BB- or B+. Either option has negative impact on the Turkish banking system.

Table 4.3
Risk Weight under Option 1

Credit Assessment of sovereign	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight under Option 1*	20%	50%	100%	100%	150%	100%

*based on sovereign treatment by supervisors

Table 4.4
Risk Weight under Option 2

Credit Assessment of Banks	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Risk Weight under Option 2	20%	50%	50%	100%	150%	50%
Risk Weight for short term claims under Option 2**	20%	20%	20%	50%	150%	20%

**based on rating from ECAI--Short-term claims must have an original maturity of three months or less.

Claims included in the regulatory retail portfolios may be risk-weighted at 75%. These are claims for which the exposure is to an individual person or persons or to a small business; the exposure takes the form of any of the following: revolving credits and lines of credit (including credit cards and overdrafts), personal term loans and leases and small business facilities and commitments. This important ratio will affect most banks around the globe.

Table 4.5
Risk Weight for Corporate

Credit Assessment	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated
Other Corporate (incl. insurance companies)	20%	50%	100%	150%	100%
Retail Risk Weighted	75%				

Source: Basel Committee on Banking Supervision (June 2004).

Lending fully secured by mortgages on residential property that is or will be occupied by the borrower, or that is rented, will be risk weighted at 35%. This kind of loan does not constitute an important part of the portfolio in the Turkish system so it will have only a very limited positive effect.

Table 4.6
Risk Weight for Securitization

Credit Assessment	AA A to AA -	A+ to A-	BBB+ to BB-	Below BB-	Unrated
<i>Secured by residential property</i>	35%				
<i>Secured by commercial real estate</i>	100% (lower risk weight allowed under strict conditions)				
<i>Past due loans (unsecured portions net of specific provisions)</i>	100% or 150% (depending on degree of provisions coverage)				
<i>All other assets</i>	at least 100%				

Off-balance-sheet items under the standardized approach will be converted into credit exposure equivalents using credit conversion factors (CCF). Some CCFs are kept unchanged. Commitments with an original maturity up to one year and commitments with an original maturity over one year will receive a CCF of 20% and 50%, respectively. In the present system, the conversion factor for the vast majority of the off-balance sheet items taken into account is 50% regardless of maturity. Therefore, this clause will lead to some capital relief⁴¹.

⁴¹ Basel II Compliance Portal, Basel II Credit Risk, http://www.basel-2.org/Basel_ii_Credit_Risk.html (8 June 2008)

However, any commitments that are unconditionally cancellable at any time by the bank without prior notice, or that effectively provide for automatic cancellation due to deterioration in a borrower's creditworthiness, will receive a 0% CCF. This is in line with the current application.

In the comprehensive approach, when taking collateral, banks will need to calculate their adjusted exposure to a counterparty for capital adequacy purposes in order to take account of the effects of that collateral using haircuts. These changes are important for transactions collateralized by government securities; overall, negative affect will be relatively small.

4.4.3 The Internal Ratings-Based Approach

The IRB framework in Basel II is intended to apply to all asset classes. Most pages of the Pillar 1 proposals are devoted to the more advanced IRB methodologies. IRB gives an important degree of autonomy to banks to define their own rating scales and to use those scales to determine default probabilities⁴².

The IRB approach consists of two sub-approaches: Foundation and Advanced. The risk components include measures of the PD, LGD, EAD, and effective maturity (M). Under the foundation approach, as a rule, banks provide their own estimates of PD and rely on supervisory estimates for other risk components. Under the advanced approach, banks provide more of their own estimates of PD, LGD and EAD, and their own calculation of M, subject to meeting minimum standards.

The IRB approach is based on measures of UL and EL. The risk-weight functions produce capital requirements for the UL portion. The core of the IRB approach is to encourage banks to differentiate borrowers based on risk. Under this approach, banks will categorize their borrowers into (a) corporate, (b) sovereign, (c) bank, (d) retail, and (e) equity. The method is based on an internal assessment of probabilities of default for each borrower⁴³.

⁴² Powell, p.20.

⁴³ Allegra Miles, Basel II and impact on loan documentation, *Linklaters*, Banking Update, December 2004, p.17, <http://www.linklaters.com/pdfs/publications/bankingupdate/dec04-2.pdf> (5 June 2008)

IRB approach is closely linked to key results of modern asset pricing theory. Its methodology is based on a model that establishes the likelihood of a borrowing company being unable to repay its debt, as determined by the difference between the value of its assets and the nominal value of its debt⁴⁴. Banks implementing the IRB approach have existing risk capital assessment criteria that differ considerably from the regulatory capital calculations in the IRB approach⁴⁵ (See Appendix 1).

Under the IRB approach, a bank estimates each borrower's creditworthiness, and the results are translated into estimates of a potential future loss amount, which form the basis of minimum capital requirements. In the foundation methodology, banks estimate the probability of default associated with each borrower, and the supervisors will supply the other inputs⁴⁶.

For the recognition of internal ratings, the new Framework requires thorough historical data: Irrespective of whether a bank is using external, internal, or pooled data sources, or a combination of the three, for its PD estimation, the length of the underlying historical observation period used must be at least five years for at least one source. Estimates of LGD must be based on a minimum data examination period that should ideally cover at least one complete economic cycle but must in any case be no shorter than a period of seven years for at least one source⁴⁷.

Banks adopting IRB approach will be more sensitive than those adopting standardized approach. This may result in high-risk assets flowing to banks on standardized approach, as they would require lesser capital for these assets than banks on IRB approach. Hence, the system as a whole may maintain lower capital than

⁴⁴ Michael Gordy, "A Risk-Factor Model Foundation for Ratings-based Bank Capital Rules", **Journal of Financial Intermediation**, Volume 12 (July 2003) pp. 199–232.

⁴⁵ Hugh Thomas and Zhiqiang Wang, "Interpreting the Internal Ratings-Based Capital Requirements in Basel II," **Journal of Banking Regulation**, Vol. 6, No. 3 (2005), p.5.

⁴⁶ BCBS, 2001, <http://www.bis.org/publ/bcbzca01.pdf> (9 July 2007) , p.28.

⁴⁷ Stephany Griffith and Jones Avinash Persaud, "The Pro-Cyclical Impact of Basel II on Emerging Markets and Its Political Economy", **Capital Market Liberalization and Development**, Vol.27(May 2008), pp. 262-288.

warranted and become more vulnerable. The formula for a curve apply in calculating the capital requirements is as follows⁴⁸:

$$\text{Capital Requirement} = LGD \times N \left(\frac{N^{-1}(PD) + p^{1/2} N^{-1}(C)}{\sqrt{1-p}} \right) \times EAD$$

The Committee distinguishes between the risks of different exposure types by setting different (the higher the correlation the higher the unexpected loss for a given PD). For example, the correlation proposed by the Committee for corporate, sovereign, interbank is as follows:

$$p(PD) = 12\% \times N \left(\frac{1 - e^{-20 \times PD}}{1 - e^{-50}} \right) + 24\% \times N \left(\frac{1 - e^{-20 \times PD}}{1 - e^{-50}} \right)$$

Table 4.7
Credit Risk Measurement and Details

Credit Risk Measurement: Increasing Sophistication→

	Standardized	IRB Foundation & Advanced	
Risk Weight	- Amended version of the existing discrete weights bucketing under BIS I - Varies by product and customer segment	- Based on internal rating systems (IRS) - Weight Formula varies with PD, M, severity (LGD) and credit conversion factor (EAD). - Basic model is an asymptotic, single-factor Merton model, assuming borrowers' propensity to default is a function of a single variable –the overall economy.	
	Standardized	IRB Foundation	IRB Advanced
Parameters	- External (PD) ratings - Credit conversion factor fixed by Basel	- PD from internal systems - Severity LGD fixed by Basel - Credit conversion factor fixed by Basel	- PD from internal system - LGD from internal system - EAD fixed by Basel
Mitigation	Partial mitigation allowed but change in risk bucket	Stepwise accounting for mitigation via Basel collateral bucketing	- Full credit mitigation - Collateral changes internal severity estimations

←*Increasing Capital Requirements for Credit Risk*

Source: Fernando Montes, Risk Management Challenges, the World Bank, Risk Management Workshop, Istanbul, February 9-11, 2005.

⁴⁸ Patricia Jackson, "Bank Capital: Basel II Developments", *Bank of England Financial Stability Review*, December 2002, p.104.

4.5 MARKET RISK MEASUREMENT APPROACHES

In its assessment of market risk, Basel II makes a clear distinction between fixed income and other products such as equity, commodity, and foreign exchange vehicles and separates the two principal risks that contribute to overall market risk: interest rate and volatility risk. For fixed income assets, a proprietary risk measurement called “value at risk” is proposed alongside the lines of the IRB approaches and the *Advanced Measurement Approach*; banks can develop their own calculations to determine the reserves needed to protect against interest rate and volatility risk for fixed income assets on a position-by-position basis. Again, regulators must approve of such an action⁴⁹.

For banks that cannot or chose not to adopt VAR models to protect their fixed income assets against volatility or interest rate risk, Basel II advises two separate risk protection methodologies. For interest rate risk—the risk that interest rates may fluctuate and decrease the value of a fixed-income asset—reserve recommendations are tied to the maturity of the asset. Table 4.8 provides an overview of the risk weights assigned to each asset given its maturity. As seen to the page, depending on the time to maturity of the fixed income asset, Basel II suggests a bank hold anywhere between 0% and 12,5% of an asset’s value in reserves to protect against movements in interest rates.

Table 4.8
Interest Rate Risk Weightings

Time to Maturity	Risk Weighting
1 Month or Less	0.00%
6 Months or Less	0.70%
1 Year or Less	1.25%
4 Years or Less	2.25%
8 Years or Less	3.75%
16 Years or Less	5.25%
20 Years or Less	7.50%
Over 20 Years	12.50%

Source: Basel II Accords, 2006 Revision

⁴⁹ Bryan J. Balin, “Basel I, Basel II, and Emerging Markets: A Nontechnical Analysis”, *The Johns Hopkins University, School of Advanced International Studies (SAIS)*, 10 May 2008, <https://jscholarship.library.jhu.edu/bitstream/handle/1774.2/32826/Basel%20I,%20Basel%20II,%20and%20Emerging%20Markets%20%0D%0A%0D%0Aa%20Nontechnical%20Analysis052008.pdf?sequence=1> (11 July 2008)

To guard against the volatility risk of fixed income assets, Basel II proposes risk weightings tied to the credit risk ratings given to underlying bank assets. For assets rated by credit-rating agencies as AAA to AA-, a 0% weighting is assigned, while for A+ to BBB rated fixed income instruments, a 0.25% weighting is given. Furthermore, for instruments receiving a BB+ to B- rating, an 8% weight is assigned, and for instruments rated below B-, a 12% weight is allowed. Unrated assets are given an 8% risk weighting. For the final calculation of the total amount of reserves needed to protect against market risk for fixed income instruments, the value of each fixed income asset is multiplied against both risk weightings and then summed alongside all other fixed income assets.

4.5.1 The Simplified Approach

Basel II's risk weightings for all other market-based assets—such as stocks, commodities, currencies, and hybrid instruments—is based on a second, separate group of methodologies. It would be exhaustive to provide a full outline of the methods used for the calculation of reserves needed to protect against market risks, but this paper will provide a short outline of the three main types of rating methodologies used to rate these assets. The first group of methodologies is called *The Simplified Approach*, and uses systems similar to the “bucket” approaches used in non-VAR fixed income reserve calculations. This group divides assets by type, maturity, volatility, and origin, and assigns a risk weights along a spectrum of values as 2.25% for the least risky assets to 100% for the most risky assets.

4.5.2 Scenario Analysis

The second group of methodologies for assigning the reserves needed to protect against market risk inherent in stock, currency, commodities, and other holdings is called *Scenario Analysis*. Here, risk weights are not grouped consistent with the cosmetic features of an asset; instead, risk weights are allocated according to the possible scenarios assets may face in each country's markets. This approach, while much more complex than the *Simplified Approach*, is much less conservative and therefore more profitable for a bank.

4.5.3 Internal Model Approach

The final methodological group outlined in Basel II that calculates the reserves needed to guard against market risk is known as the *Internal Model Approach*, or IMA. Along the lines of the VAR and IRB approaches, this methodology group encourages banks to develop their own internal models to calculate a stock, currency, or commodity's market risk on a case-by-case basis. On average, the IMA is seen to be the most complex, least conservative, and most profitable of the approaches toward market risk modeling.

4.6 OPERATIONAL RISK MEASUREMENT APPROACHES

Banks are encouraged to move along the scale of available approaches as they develop more sophisticated operational risk measurement systems and practices⁵⁰.

4.6.1 The Basic Indicator Approach

Basel II leaves to banks the choice between three approaches for quantifying the regulatory capital for operational risk. The *Basic Indicator Approach* defines the operational risk capital as a fraction (15%) of the gross income of the institution, thus explicitly assuming that operational risk is related to size. Gross income is the sum of the interest margin, the fee income, and the other revenues. However, worldwide active banks are strongly suggested not to adopt this simple model⁵¹.

Banks using the BIA must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (denoted alpha) of positive annual gross income. The charge may be expressed as follows:

GI = annual gross income, where positive, over the previous three years

n = number of the previous three years for which gross income is positive = 15%, which is set by the Committee, relating the industry wide level of required capital to the industry wide level of the indicator

⁵⁰ BCBS, Operational Risk, 2001, p.11, <http://www.bis.org/publ/bcbsca07.pdf> (10 September 2007).

⁵¹ BCBS, Sound Practices for the Management and Supervision of Operational Risk, February 2003, <http://www.bis.org/publ/bcbs96.htm> (18 May 2007).

$$K_{\text{BIA}} = \frac{\sum_{i=1}^n (GI_i * \alpha)}{n}$$

GI will be defined as net interest income plus net non-interest income, as is defined by national supervisors and/or national accounting standards. The intention is that this measure should:

- Be gross of any provisions (e.g. for unpaid interest);
- Be gross of operating expenses, including fees paid to outsourcing service providers; (In contrast to fees paid for services that are outsourced, fees received by banks that provide outsourcing services shall be included in the definition of gross income);
- Exclude realized profits/losses from the sale of securities in the banking book; (Realized profits/losses from securities classified as “held to maturity” and “available for sale”, which typically constitute items of the banking book (e.g. under certain accounting standards), are also excluded from the definition of gross income);
- Exclude extraordinary or irregular items as well as income derived from insurance.

4.6.2 The Standardized Approach

The *Standardized Approach* slightly refines the BIA, as it calculates the operational risk capital because of gross income split per business⁵². In the Standardized Approach, banks’ activities are divided into eight business lines (Table 4.9). Each line is weighted by its relative size within the company to create the percentage of assets the bank must hold. As shown to the below, less operationally risky business lines—such as retail banking—have lower reserve targets, while more variable and risky business lines—such as corporate finance—have higher targets. The capital charge for each business line is calculated by multiplying gross income by a factor (denoted beta) assigned to that business line. The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charges across each of the

⁵² BCBS, June 2004.

business lines in each year. This is going to be the main source of in capital requirements increase for the Turkish banks.

Table 4.9
Standardized Approach Reserve Targets

Business Line	% of Profits Needed in Reserves
Corporate Finance(β_1)	18%
Sales & Trading(β_2)	18%
Retail Banking(β_3)	12%
Commercial Banking(β_4)	15%
Payment & Settlement(β_5)	18%
Agency Services(β_6)	15%
Asset Management(β_7)	12%
Retail Brokerage(β_8)	12%

Source: Basel II Accords, 2006 Revision

The calculation of the Standardized Approach to determine the total capital charge is as follows:

$$K_{TSA} = \frac{\sum_j^3 \max \left[\left(\sum_i^8 (GI_i * \beta_i) \right), 0 \right]}{3}$$

K_{TSA} = The capital charge under the Standardized Approach.

GI_i = Annual gross income in a given year, as defined above in the Basic Indicator Approach, for each of the eight business lines.

β_i = A fixed percentage set by the Committee, relating the level of required capital to the level of the gross income for each of the eight business lines.

4.6.3 Advanced Measurement Approaches

Under the *Advanced Measurement Approach*, banks are free to develop their own model for assessing the regulatory capital that covers their operational risk, with a confidence interval of 99,9%.

International banks are advised by the regulator to comply with the AMA, and to quickly adapt their quantitative data collection, theoretical modeling of risk exposure and statistical validation in order to be allowed to make use of a proprietary model. The choice faced by banks among numerous methods, although similar to the choice for credit risk modeling, is more critical in this case, as the cost-benefit trade-off of the alternative is completely indefinite⁵³.

Under the AMA, the regulatory capital requirement will equal the risk measure generated by the bank's internal operational risk measurement system. Use of the AMA is subject to supervisory approval⁵⁴. One of the proclaimed improvements of the Basel II Accord is the AMA to the calculation of regulatory capital against operational risk. The underlying idea of the AMA is that banks use their internal models to estimate regulatory capital, which would align it with economic capital, thus eliminating any incentive for regulatory arbitrage. While the development of internal models and the implementation of the AMA require important resources, it is typically suggested that the incentive for banks to use the AMA is that it produces lower capital charges than the much simpler BIA and the standardized approach⁵⁵.

The Basel Committee has identified three sub approaches to determine capital allocation for operational risk. They are⁵⁶:

1. Scorecard Approach
2. Internal Measurement Approach
3. The Loss Distribution Approach

4.6.3.1 Scorecard Approach

In the scorecard approach, banks initially determine a level of operational risk capital at the firm's business line and over time, these amounts will be modified

⁵³ Chapelle and others, p.5.

⁵⁴ Carolyn V Currie, "The Potential Effect of the New Basel Operational Risk Capital Requirements", *School of Finance and Economics Working Paper*, No. 137, September 2004, p.77.

⁵⁵ Imad A. Moosa, A critique of the advanced measurement approach to regulatory capital against operational risk, *Journal of Banking Regulation*, Vol.9 (May 2008) , p. 152.

⁵⁶ Willem Yu, "New Capital Accord Basel II, Using LDA Approach for Measuring Operational Risk", Vrije Universiteit, January 2005, <http://www.few.vu.nl/stagebureau/werkstuk/werkstukken/werkstuk-yu.doc> (3 January 2009)

according to the Scorecard. Banks aims to advance the risk control environment that will decrease both the frequency and severity of future operational risk losses. By identifying a number of risk indicators for particular risk types within business lines, one can captures the underlying risk profile of the various business lines. These risk indicators represents indirectly the altitude of the operational risk. A combination of risk indicator will be combined into a score, to allocate the altitude of the operational risk. After a certain time, the performance of these indicators will be assessed. Based on these assessments one can decide which point must still be improved. In addition, based on the scorecard, one can analyze what was effectively the indirect influence of the indicators on eventual operational risk losses.

Where the Scorecard approach differs from other approaches (Internal Measurement Approach and Loss Distribution Approach) is that it relies less exclusively on historical loss data in determining capital amounts. Instead of this, after the size of the regulatory capital is determined, its overall size and its allocation across business lines will be modified on a qualitative basis. However, historical operational risk loss data must be used to validate the results of scorecards.

4.6.3.2 Internal Measurement Approach

The Internal Measurement Approach provides discretion to individual banks in the use of internal loss data. In this approach, banks estimate the operational risk capital based on the measurement of the total expected losses. The IMA approach assumes a fixed, direct relationship between expected loss (the mean of the loss distribution) and the unexpected loss (the tail of the distribution).

The relationship can be linear; this implies that the capital charge is a simple multiplication of the expected loss with a fixed number. On the other hand, non-linear, implying that total capital charge will be a more complex function of expected losses.

The IMA approach calculates the capital charge based on a framework that divides a bank's operational risk exposure into a series of business lines and events.

In such a framework, separate expected losses are calculated for each business line and event type combination. Such an approach, calculates the expected losses generally by estimating the loss frequency and the size of the amount for various business line and event combination by using internal loss data and, where appropriate, relevant external loss data, along with a measure of the scale of business activities for the particular business line in question.

While these elements can be specified in a variety of ways, in general they can be described as follow:

- PE: The probability that an operational risk event occurs over some future horizon.
- LGE: The average loss given that an event occurs.
- EI: An exposure indicator that is intended to capture the scale of the bank's activities in a particular business line.

The supervisor for each type of business line an event combination specifies the EI exposure indicator. EI is a proxy for the size or amount of risk of each business line's operational risk⁵⁷. EL for each business line and event combination will be calculated with the following formula:

$$EL = EI * PE * LGE$$

Combining these parameters, the IMA capital charge for each business line i and event type j combination K_{ij} would be:

$$K_{ij} = \gamma_{ij} * EI_{ij} * PE_{ij} * LGE_{ij} = \gamma_{ij} * EL_{ij}$$

The parameter γ_{ij} translates the estimates of expected losses, EL for the business line and event type combination into a capital charge. The γ_{ij} for each business line and event type combination would be specified by the supervisor.

⁵⁷ BCBS, Operational Risk, January 2002.

4.6.3.3 Loss Distribution Approach

Under the loss distribution approach, the banks estimate for each business line/event type, the probability distribution functions of the single event impact and the event frequency, for the next one-year using its internal data. Moreover, it computes the probability distribution function of the cumulative operational risk loss. The capital charge is based on the sum of all operational risk for each business line/event type.

However, during the application of this approach correlation effect are not considered in this method. The advantage is this approach is that it can possibly increase the risk sensitivity. This method differs from the IMA in two important aspects. It aims to assess expected loss and unexpected loss directly and *without* making an assumption about the relationship between the expected loss and the unexpected loss. Therefore, there is no need for the supervisor to determine a multiplication factor (gamma) under this approach. In addition, the bank itself determines the structure of business lines and event types.

5. RATING SYSTEM

Rating is an assessment of a specific debtor's creditworthiness. Issuers with lower credit ratings pay higher interest rates embodying larger risk premiums than higher rated issuers. Moreover, ratings decide the eligibility of debt and other financial instruments for the portfolios of certain institutional investors due to national regulations that restrict investment in speculative-grade bonds⁵⁸.

Ratings tend to be sticky, lagging markets, and then to overreact when they do alter. This overreaction may have aggravated financial crises in the recent past, contributing to financial instability and cross-country contagion. Moreover, the action of countries, which strive to maintain their rating grades through tight macroeconomic policies, may be counterproductive for long-term investment and growth⁵⁹.

There are two types of credit ratings: internal and external. Internal ratings are assigned by banks that use basic or advance IRB approaches. External ratings are issued by credit rating agencies. Common to both approaches is that the resulting rating will be used in credit exposure decision, credit valuation, determination of the type, limit of the credit and corresponding collateral structure and in monitoring. External rating is the essential block in standardized approach in the first pillar and both official announcements and The Committee interviews with the rating firms indicate that banks will not be permitted to employ IRB approach at least for five years after Basel II Accord is put into practice⁶⁰.

5.1 CREDIT RATING AGENCIES

Credit rating agencies play a key role in financial markets by helping to decrease the informative asymmetry between lenders and investors, on one side, and issuers on the other side, about the creditworthiness of companies or countries. CRAs'

⁵⁸ BCBS, The Role of Ratings in Structured Finance: Issues and Implications, January 2005, <http://www.bis.org/publ/cgfs23.pdf> (5 February 2008), p.27

⁵⁹ Marwan Elkhoury, Credit Rating Agencies and Their Potential Impact on Developing Countries, **Conference on Trade and Development**, United Nations, No. 186, January 2008, http://www.unctad.org/en/docs/osgdp20081_en.pdf (15 November 2008), pp.1–16.

⁶⁰ BCBS, Implementation of Basel II: Practical Considerations, July 2004, <http://www.bis.org/publ/bcbs109.htm> (10 June 2007), pp.9-30,

role has expanded with financial globalization and has received an additional boost from Basel II that incorporates the ratings of CRAs into the rules for setting weights for credit risk. The rating agencies fall into two categories: (i) recognized; and (ii) non-recognized. Supervisors in each country recognize the former for regulatory purposes. In the United States, the Security and Exchange Commission (SEC) recognize only five CRAs of which the best known are Moody's and Standard and Poor's (S&P). The majority of CRAs such as the Economist Intelligence Unit (EIU), Institutional Investor (II), and Euro money are "nonrecognized"⁶¹.

As of 4th of December 2003, Capital Markets Board of Turkey has prepared the relevant regulations for credit rating. So far, the board has authorized four credit rating firms, Fitch, Avrasya, TCR and Saha. Actually, the Banking Regulation Supervision Agency of Turkey for finalizing the licensing procedure of CRAs must give a second permission.

CRAs have broad differences in their methodologies and definitions of the default risk, which renders comparison difficult. Credit rating agencies have relied on a process based on quantitative and qualitative assessment, reviewed and finalized by the rating committee. CRAs declare that their advanced techniques are mechanical. They derive software packages and enter the data of quantitative and qualitative assessment into them to get the score of their clients. The main responsibility of credit rating firms is to collect basic financial information from the financial statements, quantify management qualifications, interpret past performances and process these information by considering future projects, brands, patents and intellectual know-how to end-up with a single grade in a universal scale. The crucial benefit of the credit rating is that the criterion set forward by the credit rating firm is minimally subjective and furthermore informative for the corresponding bank to calculate the required capital allocation⁶².

A sovereign rating is aimed at "measuring the risk that a government may default on its own obligations in either local or foreign currency. It takes into account

⁶¹ Elkhoury, p.1

⁶² Bernanrd Di Renzo and others, Operational Risk Management in Financial Institutions: Process Assessment in Concordance with Basel II, **Software Process: Improvement and Practice**, 12(4), July 2007, p.328.

both the ability and willingness of a government to repay its debt in a timely manner”⁶³. The key measure in credit risk models is the measure of the PD but exposure is also determined by the expected timing of default and by the RR after default has occurred⁶⁴:

- Standard and Poor's ratings seek to capture only the forward-looking probability of the occurrence of default. They provide no assessment of the expected time of default or mode of default resolution and recovery values;

- By contrast, Moody's ratings focus on the EL that is a function of both PD and the expected RR. Thus $EL = PD (1 - RR)$; and

- Fitch's ratings also focus on both PD and RR. They have a more explicitly hybrid character in that analysts are also reminded to be forward-looking and to be alert to possible discontinuities between past records of accomplishment and future trends.

The credit ratings of Moody's and Standard and Poor's are assigned by rating committees and not by individual analysts. There is a large dose of judgment in the committees' final ratings.

CRA's provide little guidance as to how they assign relative weights to each factor, though they do provide information on what variables they consider in determining sovereign ratings.

In assessing sovereign risk, CRA's highlight several risk parameters of varying significance: (i) economic; (ii) political; (iii) fiscal and monetary flexibility; and (iv) the debt burden (see Appendix 2). Economic risk addresses the ability to repay its obligations on time and is a function of both quantitative and qualitative factors. Political risk addresses the sovereign's willingness to repay debt. Willingness to pay is a qualitative issue that distinguishes sovereigns from most other types of issuers. Partly because creditors have only limited legal redress, a government can (and sometimes does) default selectively on its obligations, even when it possesses the financial capacity for debt service. In practice, political risk and economic risk are related. A government

⁶³ Moody's, "A Guide to Moody's Sovereign Ratings", August 2006, <http://www.moodys.com.br/brasil/pdf/SovGuide2006.pdf> (15 April 2008), p.1.

⁶⁴ Elkhoury, p.4.

that is unwilling to repay debt is usually pursuing economic policies that weaken its ability to do so. Willingness to pay, therefore, encompasses the range of economic and political factors influencing government policy (see Appendix 2).

In global financial crisis ratings, models might become obsolete since a stable relationship between rating and their determinants might be impossible to identify. In Juttner and McCarthy's analysis of the determinant of ratings during the Asian crisis, they found that the following variables were important⁶⁵:

- The CPI;
- The ratio of external debt to exports;
- A dummy default history;
- The interest rate differential; and
- The real exchange rate.

Neither the interest rate differential nor the real exchange rate were found to be significant determinants prior to the Asian crisis thus indicating that these variables may have been overlooked by the agencies before the crisis. Variables denoting financial strength were not found to be significant determinants of sovereign ratings even one year after the Asian crisis. However, these variables were subsequently included in ratings assessments by the major CRAs following their unsatisfactory performance during Asian crisis.

5.2 CREDIT RATINGS and BASEL II

Regulatory changes in banks' capital requirements under Basel II have resulted in a new role to credit ratings. Ratings can be used to assign the risk weights determining minimum capital charges for different categories of borrower. Basel II establishes credit risk weights for each supervisory category that rely on "external credit assessments". Moreover, credit ratings are also used for assessing risks in some of the

⁶⁵ Johannes Juttner and Justin McCarthy, "Modelling a Rating Crisis", Unpublished PhD., Macquarie University, 2000, pp. 2–22.

other rules of Basel II⁶⁶. While ratings-based regulations are less common in Europe, they are part of the new Capital Requirements Directive through the EU that will implement Basel II.

In a Basel II-regulated world, and in a world where market discipline matters greatly, ratings will become even more important. Ratings should reflect risk and prompt more behavior that is responsible by financial institutions who value their ratings. This too has its challenges since in many instances pricing is based on a risk rating, itself the product of examination of information that has been provided to the ratings agency by the specific issuer. Following the sub-prime fallout, the validity of ratings, rating agency modeling, methodology and their compensation has been called into question. Therefore, any enhanced program aimed at improving the governance of the global financial system may require some changes to the ratings infrastructure and the extent to which ratings reflect risk and are not overly influenced by massive corporate profits of high-risk institutions. Indeed a special rating for risk may be appropriate – that is both for risk in the firm and transferred risk – i.e. risk transferred by the firm to the system. There needs to be a series of major changes to plug the loopholes in the system and regulators need to ensure that they are as proactive as possible⁶⁷.

⁶⁶ Elkhoury, p.2.

⁶⁷ Williams, p.8.

6. BANKS AND BASEL II

Banks play a central role in the economy through their liquidity and credit creation functions but their asset–liability structure makes them fragile. Assets include risky loans while liabilities are not contingent claims but relatively short-term deposits, susceptible to runs.

Basel II poses important strategic problems for all banks. Retail lending, especially mortgage loans and loans to SMEs, may be affected adversely by Basel II. Stakeholder-based savings and cooperative banks play a key role in funding European SMEs. Imposing higher capital charges on this lending specialization could clog traditional channels for distributing credit. Basel II can be implemented in ways that explicitly recognize the risk-reducing benefits of relationship lending for mutual and cooperative banks⁶⁸.

Supervisors may want to consider the following factors when determining the population of banks to which Basel II would apply⁶⁹:

- size of the bank (e.g., share of assets in the banking system);
- nature and complexity of its operations;
- involvement in significant activities or business lines, such as settlement/clearing activities, or possession of a sizeable retail base);
- international presence (e.g. proportion of assets held in/income from overseas offices);
- interaction with international markets;
- bank's risk profile and risk management capabilities, and
- Other supervisory considerations, such as resources that will be available for initial validation and ongoing monitoring, and the trade-off between the additional complexity of implementing and validating these approaches vis-à-vis the increased sensitivity of the resulting capital requirements.

⁶⁸ Santiago Carbo-Valverde, “Implications of Basel II for different bank ownership patterns in Europe”, *Atlantic Economic Journal*, No.27 (December 2007), p.391.

⁶⁹ BCBS, July 2004.

6.1 FINANCIAL CRISES

The international economic conditions are still declining because the financial crisis has spread to the real sector and the loan limitation has deepened. This situation is reflected clearly on the current economic indicators and to the latest expectations of international institutions and the improvements in financial markets became the main determinants of the economic outlook. The IMF has decreased its predictions of 2008 and 2009 world revenue respectively to 3,7% and 2,2%, while World Bank has decreased its predictions to 2,6% and 1%. When all these expectations are observed, the correction of the 2009 growth predictions downwards is significant. Furthermore, all the global institutions are pointing out to the increasing uncertainty of the next period. Within this framework, it is expected that the developed and developing countries will show a performance below their long-term tendencies in 2008 and 2009. The worsening of the global growth performances causes especially the deterioration of external demand conditions. The development of economic confidence indicators and other leader indicators are indicating that the dimensions of financial crisis will be deeper and its effects will be long-termed. In addition to this deterioration of the general appearance, a possible increase in the volatility of energy and product prices is considered as an important risk factor. All these developments cause the increase of application of more protective policies. The deepening of the financial crisis by including the financial institutions caused that in developing countries some measures to be taken in addition to the traditional monetary policy instruments. The negative effects of these measures on the public debt stock of these countries within the next period are unavoidable. Furthermore, it is also seen that the present financial crisis is affecting negatively the capital flows related to the emerging economies that hit the top in 2007. In 2008 and 2009, a slowdown is expecting in the capital flows relating to emerging economies, new policies may be determined considering that the fundamental capital inflow item will be by direct investments⁷⁰.

⁷⁰ BRSA, Financial Market Report, September 2008, Issue 11, p.3.

A number of factors can trigger financial crisis⁷¹: “The first view is that crises are an intrinsic part of the business cycle and result from shocks to economic fundamentals. However, severe credit events do not happen every cycle. Increased uncertainty materialized into increasing premium on short-term liabilities and a squeeze in available liquidity. When premium reach a very high level, the liquidity problem moves into a solvency problem, capital shortages and bankruptcy, unless public authorities intervene”.

Weakness of the regulation and supervision of the financial system is viewed as a major factor, contributing to the emergence of bank failures and financial crisis. It is argued that if financial liberalization is accompanied with weak prudential supervision of the banking sector, then it will result in excessive risk taking by financial intermediaries and a subsequent crisis. Recent innovations in banking markets may have accentuated this instability risks. Incomplete financial markets can also be a source of crisis⁷² by leading to inefficient liquidity provision and asset price volatility.

An alternative view is that crises stem from self-fulfilling prophecies: “The financial crisis would then lead to economic depression. Past country, experience suggests that there is a striking correlation between freer capital mobility and the incidence of banking crises”⁷³. With greater financial liberalization, currency crises and banking crisis have become more closely related. Usually a banking crisis is followed by a currency crisis that in turn exacerbates the banking crisis.

Systemic financial rescues plans or emergency measures usually entail very large costs. “Historically, these costs have been sizeable, 13,3% of GDP on average for a sample of 42 crisis episodes”⁷⁴ (see Table 6.1).

⁷¹ Davide Furceri and Annabelle Mourougane, “Financial Crises: Past Lessons and Policy Implications”, *OECD Economics Department Working Papers*, No. 668, OECD publishing, 17-Feb-2009, p.5.

⁷² Franklin Allen and Elena Carletti, “The Role of Liquidity in Financial Crises”, **Symposium of Managing Stability in a Changing Financial System**, Kansas: Federal Reserve Bank of Kansas, 2008, pp.3-7.

⁷³ Carmen M.Reinhart and Kenneth S.Rogoff, “This Time is Different: A Panoramic View of Eight Centuries of Financial Crises”, *NBER Working Paper*, 13882. http://www.economics.harvard.edu/files/faculty/51_This_Time_Is_Different_SHORT.pdf (24 February 2009), p.5.

⁷⁴ Luc Laeven and Fabian Valencia, “Systemic Banking Crises: A New Database”, *IMF Working Paper*, November 2008, <http://imf.org/external/pubs/ft/wp/2008/wp08224.pdf> (4 March 2009), p.25.

Since 1997, financial sector crises in a variety of countries, i.e. Argentina, Ecuador, Indonesia, Korea, Russia, Thailand, and Turkey, have drawn attention to the relationship between financial sector crises and weak macroeconomic policies, while also confirming the adverse effects of poor lending practices, weak corporate governance, inadequate loan provisioning, accounting and auditing practices, and inadequate supervisory independence. It is asserted that it would have been possible to avoid the Asian crisis, if banks had been supervised well⁷⁵.

Table 6.1
Fiscal Costs of Selected Crises in the Past

	Gross fiscal cost (% of GDP)	Net fiscal cost* (% of GDP)	Output loss (% of GDP)
Argentina, 1980	55.1	55.1	10.8
Chile, 1981	42.9	16.8	92.4
Indonesia, 1997	56.8	52.3	67.9
Japan, 1997	24	13.9	17.6
Korea, 1997	31.2	23.2	50.1
Sweden, 1991	3.6	3.4	30.6
Russia, 1998	6.0	6.0	0.0
United States, 1988	3.7	-	4.1
Average 42 episodes	13.3	-	20

Source: Laeven and Valencia (2008).

* Defined as Gross fiscal cost minus recovery proceeds.

6.1.1 2000 – 2001 Financial Crisis in Turkey

Turkish economy had faced increasingly more frequent crises as from the 1990s and economic vulnerabilities increased due to the failure, for various causes, to complete the stabilization programs initiated. During this period, basic structural problems such as the macroeconomic instability in the banking sector, distorting effect of state-owned banks, the small-scaled and fragmented structure of the sector and

⁷⁵ John Williamson, “Implications of the East Asian Crisis for Debt Management”, **External Debt Management**, Kerala: the Reserve Bank of India, the Indian Ministry of Finance, and the World Bank Kovalam, 7-9 January 1999, p.10.

deficiencies in risk management have resulted in the deepening of exchange rate crisis experienced in February 2001 and its transformation into a systemic banking crisis⁷⁶.

Like many other “emerging markets” Turkey also experienced, the damage due to speculative short-term capital movements, i.e. of “hot money”, looking for arbitrage and floating around the globe. The systematic problems and vulnerability of the shallow financial markets of the developing countries made them defenseless against this movement of money, marking the last two decades. A point reinforced by the fact that the crisis came after the inflation of 69% in December 1999 dropping to 36% by January 2001 due to the capital inflows throughout the life of the program and successful performance of the Central Bank. Typical of developing country financial crises it came along with a currency crisis⁷⁷.

By the time, the new IMF program was in fact, the banks of Turkey already had significant portfolios of foreign liabilities due to their activity of borrowing outside, converting it and lending to the government who had difficulty in raising funds. The arbitrage between the real interest rates and the change in currency rates had made this activity profitable so far but had increased the risk level and foreign currency exposures of the banks. This is a similarity with the former 1994 crisis.

This arbitrage and high level of real interest rates gave way to two major new trends in the financial life of the country. One was the fact that a large variety of entities from individuals to big industrial companies took their part in this game of “funding the public sector” by purchasing high yield public securities. Nevertheless, the dominating buyers were the banks.

After all, taking into account the adverse economic conditions and the stagnation, there was no other way of obtaining comparable return levels on production activities. The banks were not exempt from this; they partly gave up their traditional banking activity of “extending credits to individuals and industries” in exchange for

⁷⁶ BRSA, From Crisis to Financial Stability: Turkey Experience, April 02, 2009 , http://www.bddk.org.tr/WebSitesi/english/Reports/Financial_Markets_Report/6316crisistostability_Turkey.pdf (5 April 2009), p.4.

⁷⁷ Erinc Yeldan, “Macroeconomic Developments in Turkey, 2003”, pp.1-10. http://www.bagimsizsosyalbilimciler.org/Yazilar_BSB/Turkey2004February.pdf (15 December 2008).

maintaining securities portfolios. This, however was not a completely deliberate action: under an average 1,5% growth rate in the economy, they would not find any other safe borrowers than the state itself.

One thing that the banks did was borrowing abroad and lending to the public sector that was financing its deficits this way. Consequently, they started to run large open positions. There was a grave mutual dependence harming the country with a whole system dependent on the securities market. Besides, this increasing need to finance the through providing the domestic market with high interest rates in turn led to a further decrease in the funds to the real sector.

The second trend linked to the previous was that banks (especially public banks and smaller private commercial banks) were providing the savings with very high interest rates on term accounts whether TRL or foreign exchange dominated. The rationale behind the behavior of the public banks was their “obligation” to gather funds for the financing of the deficit: which returned them as duty losses together with uncollected interests on non-performing loans.

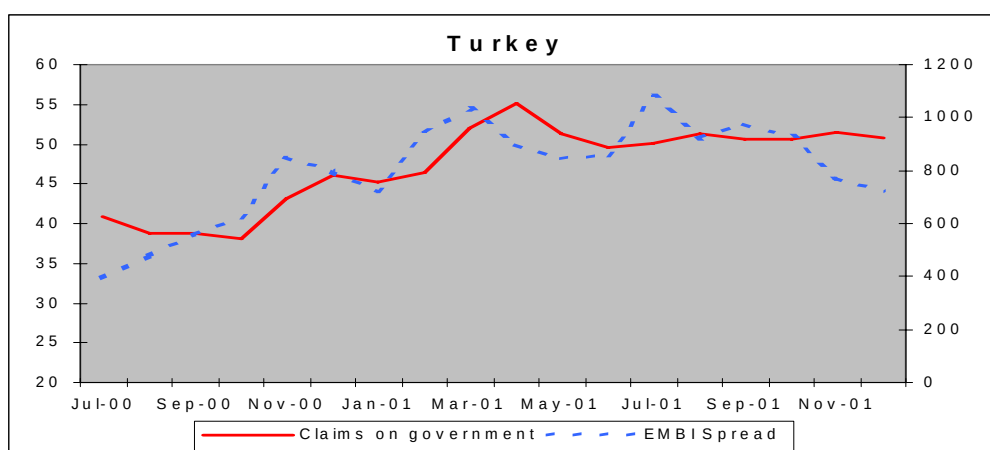


Figure 6.1 EMBI Spread and Claims on Government as Percentage of Total Assets of Deposit Money Banks

Source: Liliana Rojas-Suarez, 2005

Turkey in 2000 and 2001 has drawn attention to the strong correspondence between weak regulation and supervision of the banking system and the outbreak of

crises. In the case of Turkey, it is argued that weaknesses in the regulation of both public and private banks contributed significantly to the emergence of crises⁷⁸.

Before crisis, banks in Turkey continued to increase its relative holdings of government paper even when the international bond markets had signaled increased “riskiness” for these assets (Figure 6.1). Together with the losses of the public banks, the total cost of the 2000–2001 financial sector crises was equal to 27,7% of the Turkish GDP according to the BRSA.

6.1.2 After 2000 – 2001 Financial Crisis in Turkey

In order to create a stronger structure for banks whose financial standings and profitability performance deteriorated with the effect of the fluctuation in financial markets in November 2000 and the crisis in February 2001, the “Banking Sector Restructuring Program” was initiated in May 2001. The program aimed at restructuring state-owned banks, resolution of the banks transferred to the Savings Deposit Insurance Fund, rehabilitating the private banking system, strengthening the regulation and supervision framework, and increasing efficiency in the sector.

The resolution of the banks transferred to the SDIF had been completed in a short period through the methods of merger, sales or direct liquidation. The total amount collected by the SDIF from resolved banks is USD 18 billion as of end-2008 and USD 16 billion there of which corresponds to about 90% of the collection has been realized as of 2004⁷⁹.

Through the domestic debt swap undertaken to achieve a healthier structure in the private banking system, the foreign currency open positions had been substantially closed, necessary measures were taken for the banks identified to have capital inadequacy through a capitalization program. The balance sheets of private banks have been made more transparent by applying inflation accounting, and their capital

⁷⁸ C. Emre Alper and Ziya Önis, The Turkish Banking System, “Financial Crises and the IMF in the Age of Capital Account Liberalization: A Political Economy Perspective”, **Fourth Mediterranean Social and Political Research Meeting**, Terme: European University Institute, 19 – 23 March 2003, <http://home.ku.edu.tr/~zonis/summer2003/bank.PDF> (21 December 2007) , p.15

⁷⁹ BRSA, pp. 4-5.

structures have been strengthened. Arrangements had been made for the instruction of mechanisms to accelerate the settlement of bad assets.

Legal and institutional arrangements had been introduced to strengthen the regulation, surveillance and supervision framework for the banking sector, furnish the banking system with a more efficient and competitive structure and improve the resilience of the sector and establish a lasting confidence in the sector, and the legal framework was aligned with the international standards. *The Banking Law No. 5411, adopted in 2005*, envisages a new financial structure for ensuring financial stability, improving the sector, strengthening the regulation, surveillance and supervision framework, protecting the rights and interests of depositors, and strengthening the institutional capacity. During the crisis and post - crisis period, the supervision mandate of the BRSA was expanded, its organizational structure was revised. A strategic planning approach was adopted, regulation process was made more participatory and transparent. The supervision system was strengthened through the integration of on-site and off-site audit and introduction of new approaches, methodologies and practices in order to increase institutional capacity. Due to the strong ties between the real sector and the banking sector, any problem experienced in one of these sectors concurrently leads to problems in the other.

6.2 THE CURRENT CRISIS

The current crisis was characterized by two distinct phases: a period of financial turmoil and limited spreading from July 2007 to 15 September 2008, followed by a panic phase with global and rapid spreading of the crisis. Authorities started by adopting a piecemeal approach focused on conventional policy measures and ad hoc interventions, but given their failures to shore up confidence in the markets, rescue packages were subsequently introduced worldwide. The policy response also differed between these two phases⁸⁰:

The first phase of the crisis started when a moderate correction of house prices in the United States triggered a modest increase in mortgage debt delinquencies and a

⁸⁰ Furceri and Mourougane, pp. 6–10.

few failures of financial institutions holding MBS or related instruments in 2007. High uncertainty on balance sheet risks coming from holding unknown amounts of toxic and complex derivatives based on subprime mortgages and from the distributions of losses led to a reaction in money-market liquidity and inter-bank lending premiums in US and European financial markets. Banks announced large write-downs both directly and indirectly linked to the subprime mortgage market, both in the United States and in elsewhere.

The autumn 2008 witnessed a quantum shift in the spreading of the financial crisis with a succession of bank and financial institutions failures, in particular the bankruptcy of the well-established investment bank Lehman Brother in mid-September (see Table 6.2). Financial market stress intensified and reached new heights in October 2008.

These failures typically reflect fundamental weaknesses. Banking turbulences led to a consolidation of the financial system as well as the end of the investment bank model in the United States. European markets have witnessed crises in the banking system since the beginning of October 2008, with a number of large cross-border European banks that have had to be rescued by governments. It started at the beginning of 2008 in the United Kingdom with the nationalization of Northern Rock.

The severity of the current crisis points to very high costs of inaction. The cost so far is immense, close to USD 450 billion in the subprime market according to OECD estimates. The loss on mark-to-market securities is maybe around that amount. In October, the IMF revised its estimate of losses from the global financial crisis to the US banking system to about USD1.4 trillion⁸¹. However, the downturn could be more pronounced and prolonged. Recent developments have cast doubt on the solvency of financial institutions, raising uncertainties and lowering confidence. The recapitalization of banks has become more difficult, as new capital raised can be neutralized through mark-to-market losses.

⁸¹ Furceri and Mourougane, p.18.

Table 6.2
Selected Financial Institutions' Failures

<i>Date and country</i>	<i>Event</i>	<i>Fiscal costs</i>
<i>7 February - United Kingdom</i>	Northern Rock was nationalized	£ 88 bn
<i>14 March - United States</i>	Bear Stearns absorbed by a commercial bank following a significant Federal Reserve subsidy	USD 29 bn
<i>7 September - United States</i>	Freddy Mac and Fannie Mae were de facto nationalized	USD 200 bn
<i>15 September - United States</i>	Lehman Brothers filed for bankruptcy protection	-
<i>17 September - United States</i>	AIG was nationalized	USD 87 bn
<i>29 September – Benelux</i>	Fortis rescued	USB 16 bn
<i>29 September – United States</i>	Wachovia bought by Citibank	USD 12 bn
<i>29 September – Germany</i>	Hypo Real Estate rescued	USD 50 bn (raised to 71 on 6 October)
<i>29 September – Iceland</i>	Glitnir rescued	USD 850 millions
<i>29 September – United Kingdom</i>	Bradford & Bingley rescued	USD 32.5 bn
<i>30 September – Belgium</i>	Dexia rescued	USD 9.2 bn
<i>30 September – Ireland</i>	Irish Banks rescued	USD 572 bn
<i>7 October – Iceland</i>	Lansbanki nationalized	
<i>9 October – Iceland</i>	Kaupthing nationalized	USD 864 millions
<i>16 October - Switzerland</i>	UBS rescued	USD 59.2 bn
<i>19 October – the Netherlands</i>	ING	€ 10 bn
<i>20 October – France</i>	French government lend money to 6 large banks	€ 10.5 bn
<i>27 October – Belgium</i>	KBG	€ 3.5 bn
<i>4 November - Austria</i>	Nationalization of Kommunalkredit Constantia Privatbank was nationalized and sold to five Austria banks for one euro	
<i>January- Ireland</i>	Anglo Irish Bank nationalized	

Source: Financial Times, UK Office for National Statistics and OECD

The current financial crisis is almost unprecedented in the massive under pricing of risk and explosive lending to non-creditworthy economic agents prior to mid 2007. This was the result of a combination of several factors⁸²:

First, agency problems led asset managers to arrange an increasing proportion of funds in investments that were not cost-effective. There is evidence that rating

⁸² Furceri and Mourougane, pp. 10–12.

agencies assumed unrealistically low expected losses on subprime pools prior to the crisis and failed to revise them upward, despite worrying signs such as high growth of the subprime market. The historical accident of a very low loss rate during the early history of subprime mortgage foreclosures in 2001 and 2002 served as a benchmark to evaluate risks and losses. Regulatory limits on profit sharing by asset managers may also have influenced excessive risk taking by institutional investors. Moreover, Basel capital requirements place a high weight on agency ratings and may have biased incentives of agencies. Agency problems were exacerbated by changes in bank capital regulations in 2001 and 2004, which reduce sponsors' loss exposure.

Second, the global saving excess may have encouraged excessive risk taking by providing a vast pool of resources for investment. These unusually accommodative worldwide credit conditions reflected the interaction of monetary policy, the choice of exchange rate regime in a number of countries (particularly emerging market economies) and structural changes in financial sectors. Large savings and current account surpluses in emerging economies have in particular been a source of credit to US financial institutions.

Third, a number of regulatory failures may also have deepened the extent of the boom and the subsequent bust. Indeed, insurance companies, pension and mutual funds, and banks all face regulations that limit their ability to hold low-rated debts through the Basel I and II requirements. Moreover, regulations of banks were too narrow and exempted commercial bank's off-balance sheet vehicles and investment banks from regulatory oversight. This has allowed banks to increase their leverage despite regulatory capital requirements. The impact of leveraging-up was exacerbated by the increasing importance of institutions that tend to rely heavily on leveraging such as private equity and most hedge funds. In addition, comprehensive regulations of financial holding companies were inexistent (in the United States) or inadequate (e.g. in the United Kingdom). Liquidity creations outside the banking sector were also important and escaped the regulatory oversight⁸³.

⁸³ Rudiger Ahrend, Boris Cournède and Robert Price, "Monetary Policy, Market Excesses and Financial Turmoil", *OECD Economics Department Working Paper*, 597.2008, pp.11–25

Finally, recent financial events have underlined the lack of transparency of the originate-and-distribute model of transferring risk, at least as currently implemented. In particular, the decline in "due diligence" in making loans resulted in higher leveraged positions when the quality of mortgage credits deteriorated.

6.3 BANKING REGULATION and SUPERVISION

Bank regulators' primary concern must be with the stability of the banking system. Given that primary concern, they should also seek to ensure that the financial system operates efficiently. In doing that, they have to worry about incentives, about how the banks that they regulate will respond to regulations. This has at least two important results⁸⁴:

First, regulators cannot be concerned solely with the safety of the banking system, for if they were, they would impose a narrow banking system, in which checkable deposits are fully backed by safe assets – in the extreme, currency. With regard to narrow banking, make only two points: that the historic account of how banks began is one in which narrow banks became broader banks; and that narrow banking regulations would have little chance of being effective. Moreover, once one has gone beyond the tempting notion that banks and the banking system can be made risk-free, it is necessary to accept that banks will take risks, and in extreme conditions may fail.

Second, regulatory arbitrage is a significant factor that will tend to drive regulations to the point where rates of return on assets reflect risks. Therefore, there is more than one good reason for regulators to try to make capital requirements reflect relative risks.

While weakness of the banking sector, of course, is not the only element that generates vulnerability to economic crisis, banking regulation and supervision emerges as a major component of vulnerability to crisis. It is argued that as capital account

⁸⁴ Paul S. Calem and Michael LaCour-Little, "Risk-based capital requirements for mortgage loans", *Journal of Banking and Finance*, Vol.28, No. 3, March 2004, p.652

liberalization intensifies capital mobility, this imposes a greater burden on a country to assure that its financial system is well supervised and regulated. It is asserted that strong banking systems can better handle reversals in capital flows, while weak and inefficient banking systems are less able to cope with volatile capital flows, therefore, are more vulnerable to contagion. This means that they are more likely to propagate and magnify the effects of financial crises on other economies. Additionally, it is claimed that concerns about banking solvency or inadequate regulatory frameworks may encourage capital flight⁸⁵.

Suggestion for banking reforms to prevent banking crises began without satisfactory information about the extent to which these regulatory and supervisory reforms increase or decrease the likelihood of a banking crisis. Additionally, there is very little information about the appropriate way to reform financial sector regulation and supervision in many countries. In view of the fact that capital requirements and regulatory standards recommended by the Basel Committee are designed for industrial countries, their appropriateness for emerging market countries have been rightly questioned in recent years especially in the face of severe banking crises⁸⁶.

There exist mainly two approaches to measure the quality of banking regulation and supervision: i) evaluation of the letter of the law and ii) surveys^{*}. Among the survey-based approach to collect information related to bank regulations and supervisory activities⁸⁷.

6.4 BASEL II and BANKING SYSTEM

Basel II might be considered an effort to re-invigorate the risk management culture in the banking sector. At the same time, the new capital framework will help to ensure that capital supervision continues to serve as a cornerstone to safety and

⁸⁵ Christopher L. Gilbert, Gregor Irwin and David Vines, "International Financial Architecture, Capital Account Convertibility and Poor Developing Countries", **Capital Account Liberalisation: The Developing Country Perspective**, London: Overseas Development Institute, 21st June 2000, pp.9–12.

⁸⁶ Liliana Rojas-Suarez, Comments on Panel: Basel II and Emerging Markets, London School of Economics, April 2005, http://fmg.lse.ac.uk/upload_file/393_Liliana%20Rojas-Suarez.ppt (8 November 2008).

^{*} BIS evaluated the effects of the Basel II Framework on capital levels. These last surveys will explain title of "Quantitative Impact Studies".

⁸⁷ James R. Barth, Gerard Caprio and Ross Levine, "Bank Regulation and Supervision: What Works Best?", *World Bank Policy Research Working Paper*, 2725, 2001.

soundness in the banking system. Both results will help to make banks more flexible, less sensitive to the difficulties of the business cycle, and better able to serve as a source of finance and growth for businesses and consumers. The same factors that make banks candidates for supervision and regulation have also made them vehicles to achieve desired social and economic objectives. Basel II provides banks with the incentives necessary to improve their risk management systems and processes⁸⁸.

The accord mostly prescribes good banking practice. Banks should get off the fence and use the new rules to promote change. Banks with risky portfolios may face higher regulatory-capital charges under Basel II, but such banks are in particular need of best-practice risk management. Regulators will look unfavorably on bigger banks that could participate but choose not to, unless they have some strong business reason⁸⁹.

Basel II promises to accelerate the spread of securitization in banking. This will increase strategic complementarities between investment banking and the process of originating and underwriting bank loans. At the same time, many loan originators will see their better credits migrate to the capital markets. This is because high quality customers are learning to communicate their performance and condition more effectively. These tendencies will re-emphasize the importance of credit assessment and pricing skills at the point of loan origination. “On assets they do not choose to securitize, small banks will have to quote a risk premium high enough to justify the level of capital needed to support a riskier balance sheet”⁹⁰.

Governance will become an increasingly important issue in the new regime. Governance systems vary with the character of bank ownership. Improved disclosure, the aim of Pillar 3, is only the first step in enhancing market discipline. Improved information flows will reduce new and improved governance structures⁹¹.

⁸⁸ BCBS, Proposed revisions to the Basel II market risk framework, July 2008, <http://www.bis.org/publ/bcbs140.htm> (1 February 2009).

⁸⁹ Kevin S. Buehler, Vijay D'Silva and Gunnar Pritsch, “The Business Case for Basel II”, **McKinsey Quarterly**, No. 1, 2004, p.83.

⁹⁰ Valverde, p. 393.

⁹¹ Ibid, p. 394.

These new structures shall eventually result in a freer market in bank corporate control; better performance standards; incentive-compatible safety nets; ‘no bail-out’ policies; and more-transparent accounting standards.

6.5 QUANTITATIVE IMPACT STUDIES

The QIS results for the Basel Committee member countries showed that minimum required capital under the Basel II Framework would decrease relative to the current Accord⁹².

To assess the effects of the Basel II Framework on capital levels, QIS 4 was completed on a limited basis in 2004 in Germany, the US and South Africa, in addition to a field-test in Japan in 2005. Following issuance of the trading book rules that the Basel Committee developed jointly with the International Organization of Securities Commissions⁹³ and the Committee’s guidance on economic downturn LGD⁹⁴ in 2005, a global QIS 5 was undertaken in 31 countries. All G10 countries (except the US) and 19 non-G10 countries participated in the exercise. National supervisors collected data based on the instructions and the workbook prepared by the Committee⁹⁵ in the fourth quarter and consequences were submitted to the Secretariat of the Committee in late February and early March 2006.

The Secretariat of the Basel Committee received data from 56 Group 1 banks located in the G10 countries, 146 G10 Group 2 banks (including some German banks on the basis of their QIS 4 returns), and 155 banks from other countries. Limited data from the US QIS 4 exercise – an additional 26 institutions – were also included where possible. The Committee appreciates the substantial efforts that banks and national supervisors have put into this data collection exercise.

In QIS 5, the Committee considers three different country groupings:

⁹² BCBS, Results of the fifth quantitative impact study, June 2006, <http://www.bis.org/bcbs/qis/qis5.htm> (11 March 2008), p.10.

⁹³ BCBS, The Application of Basel II to Trading Activities and the Treatment of Double Default Effects, July 2005, <http://www.bis.org/publ/bcbs116.htm> (5 February 2008).

⁹⁴ BCBS, Guidance on the estimation of loss given default (Paragraph 468 of the Framework Document), July 2005, <http://www.bis.org/publ/bcbs115.htm> (5 February 2008).

⁹⁵ BCBS, Instructions to QIS 5, September 2005, <http://www.bis.org/bcbs/qis/qis5instr.pdf> (11 May 2008).

- G10, which includes the 13 Basel Committee member countries;
- European countries that are EU member states, EU accession candidates or members of the European Economic Area. In total this group comprises the Committee of European Banking Supervisors, which includes 30 countries (both G10 and non-G10), 20 of which provided data for QIS 5. Non-G10 members of this group are Bulgaria, Cyprus, the Czech Republic, Finland, Greece, Hungary, Ireland, Malta, Norway, Poland, and Portugal. The average results for this country grouping have been provided by CEBS. Since they are all CEBS member or observer countries this group is referred to as the “CEBS group”; and
- Other non-G10 countries encompass all non-G10 countries that are not part of the CEBS group. Eight other non-G10 countries provided data for QIS 5. Other non-G10 countries participating in QIS 5 are Australia, Bahrain, Brazil, Chile, India, Indonesia, Peru and Singapore.

The QIS results for the G10 countries show that minimum required capital under Basel II (including the 1.06 scaling factor to credit risk-weighted assets) would decrease relative to the current Accord. The Committee expects that in the course of implementing the Basel II Framework, supervisors will ensure that banks will maintain a solid capital base throughout the economic cycle⁹⁶.

For Group 1 banks, minimum required capital under the most likely approaches to credit and operational risk would on average decrease by 6.8%. Between the two IRB approaches, the advanced approach shows more reduction in minimum required capital (-7.1%) than the foundation approach (-1.3%). Minimum required capital under the standardized approach would increase by 1.7% for Group 1 banks. However, only very few G10 Group 1 banks are expected to adopt this approach. Group 2 banks show a larger reduction in minimum required capital under the internal ratings-based approaches, and minimum required capital would decrease by 1.3% under the standardized approach, in particular due to the higher proportion of retail exposures for those banks (See Table 6.3).

⁹⁶ BSCB, Results of the fifth quantitative impact study, pp.1-3

In general, results for banks in the rather small sample of other non-G10 countries show substantial dispersion both within and between countries, mostly due to the specialized business profile of certain banks and particularities of national implementation. The wide range of bank- and country-specific circumstances suggests that supervisory discretion is particularly important in these countries, and the results might therefore not be representative for all non-G10 countries. Although data quality is an issue for some banks in other non-G10 countries, the results appear to be broadly in line with results for G10 banks to the extent that the risk profiles are similar.

The retail mortgage portfolio contributes the most to the reduction in minimum required capital under the standardized and the IRB approaches (-6.3% to -7.6% for G10 Group 1 banks). Since there was no explicit capital charge for operational risk under Basel I, the highest increase is due to the new capital requirements for operational risk (5.6% to 6.1% for G10 Group 1 banks). For Group 1 banks under the IRB approaches, the other main contributing portfolios are corporate and SME retail (decreases) as well as equity (increase). Although dispersion of the results has decreased for some portfolios compared to QIS 3, it is still large.

Among the other non-G10 countries, capital ratios are on average higher than in the G10. The high current capital ratios suggest that judgment by bank management, market pressures or Pillar II-type supervisory discretions may be acting to maintain higher levels of capital than are explicitly required under the current Accord.

Table 6.3
Change in Minimum Required Capital Relative to Current Accord, (%)

	Standardized approach	FIRB approach	AIRB approach	Most likely approach
G10 Group 1	1,7	-1,3	-7,1	-6,8
G10 Group 2	-1,3	-12,3	-26,7	-11,3
CEBS Group 1	-0,9	-3,2	-8,3	-7,7
CEBS Group 2	-3,0	-16,6	-26,6	-15,4
Other non-G10 Group 1	1,8	-16,2	-29,0	-20,7
Other non-G10 Group 2	38,2	11,4	-1,0	19,5

In order to analyze the incentives for banks to move to the more advanced approaches, the capital requirements for banks providing data on at least two different approaches were compared. This analysis shows that capital requirements provide an incentive for banks on average to move to the more advanced approaches.

6.6 BASEL II for BANKING in EMERGING MARKETS

For emerging economies, Basel II has debatably a more far-reaching impact. This is because of several factors⁹⁷: First, many emerging economies continue to depend heavily on the banking system to finance economic activity. With a few exceptions, commercial banks are the main providers of credit in most emerging economies, accounting for an average of 90% of total credit. This produces a higher correlation to the economic sectors where the implications on the banking system could result in significant disruptions to credit supply that could in turn affect economic activity.

Secondly, the more advanced approaches of Basel II are calibrated to the environment of the G10 countries, with significant acceleration of capital charges as the probability of default ratings deteriorate. To the extent that this inappropriately amplifies economic cycles by inducing the systemic misperception of risk in emerging economies, this can exacerbate a credit crunch during periods of weak economic performance.

Thirdly, the anticipation of lower regulatory capital requirements and hence, a competitive cost advantage, provides a strong incentive for banks especially in the developed countries to move towards the more advanced approach under Basel II. This could result in an uneven competition between the domestic and international foreign banks operating in the domestic financial system. Capability gaps in the adoption of the more onerous approaches under Basel II may place domestic banks at a competitive disadvantage in such countries.

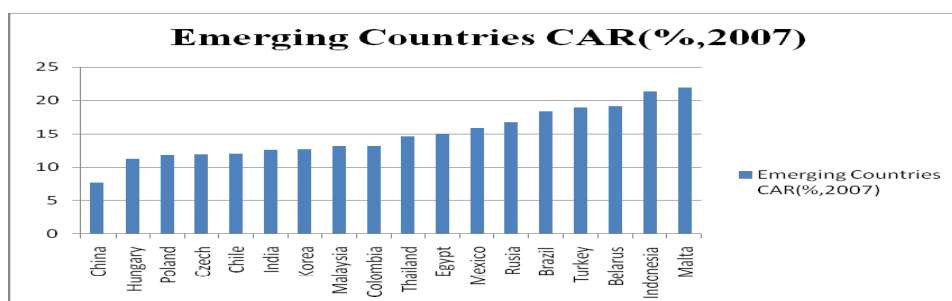
⁹⁷ Zeti Akhtar Aziz, "Basel II implementation and the development of Asia's financial system – experiences, challenges and regional cooperation", **the 4th SEACEN/ABAC/ABA/PECC Public-Private Dialogue for the Asia Pacific Region**, Kuala Lumpur:BIS, 18 August 2008, <http://www.bis.org/review/r080819a.pdf> (19 January 2009) pp.2–3.

Probably their greatest concerns relate to the reliance on external rating agencies in the standardized approach to calculating minimum capital requirements. Many non-OECD countries do not develop domestic rating agencies. This suggests that in the short term, at least, most domestic credit risks will tend to end up in the unrated, 100%, category.

Another result of putting most domestic credit risks in the unrated category would be that better-rated borrowers in those countries could borrow at lower cost from internationally rated than from local banks – leaving domestic banks at a competitive disadvantage in lending to high quality borrowers in their own countries.

Under Basel II, the largest internationally active banks in the developed economies will adopt one of the IRB approaches to credit risk – most often the advanced version. This would allow them the greatest risk sensitivity and flexibility and would probably be closest to their current practice. However, it will also mean that in their operations in emerging market economies, these banks can expect to be operating under a different system than the domestic competition. This has led to a number of concerns on their part relating to competitive equity.

It is clear that the differences in regulatory regimes implied by the possibility of some countries using the standardized approach of Basel II while others use one of the IRB methods could be significant. As already noted, internationally active banks are likely to have a favored position in lending to high-grade local borrowers, while local banks may be favored in lending to more risky local firms.



Graphic 6.1 Emerging Countries CAR

Source: IMF, BRSA

6.7 TURKISH BANKING SYSTEM

The number of banks operating in Turkey was 49 at the end of December 2008 with 32 in deposit banks group and 13 in non-deposit banks group, while there were also four participation banks. Among deposit banks, there were three state-owned banks, 11 privately owned banks and 17 foreign banks.

The number of branches and employees continued to increase at a slower rate in October-December 2008 period. The total number of branches in the deposit banks and development and investment banks increased by 1,173 to 8,791 at the end of 2008 as compared to 2007 and by 247 as compared to September 2008. The number of branches increased by 214 in state-owned deposit banks, 665 in privately owned deposit banks, and 293 in foreign banks and one in development and investment banks as compared to December 2007. The banking sector maintained its organic growth in 2008; the number of branches increased by 1187 and the number of personnel increased by 14907 to 171597 (See Table 6.4).

Table 6.4
Number of Banks and Branches in the System *

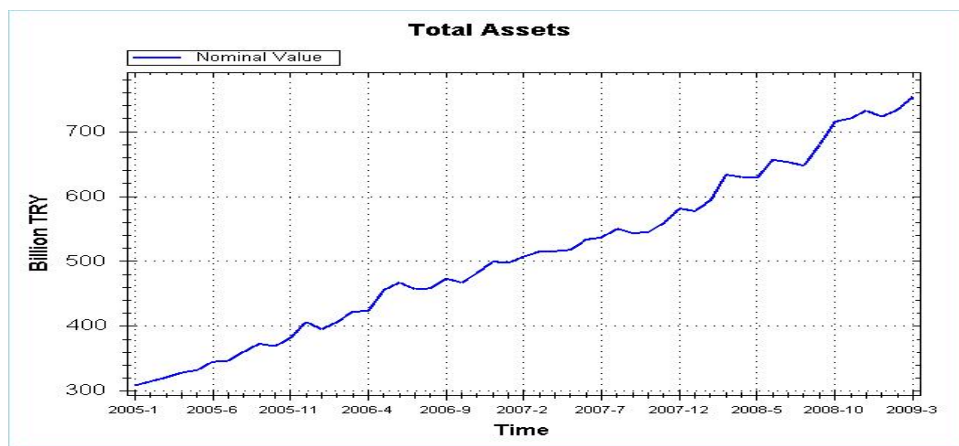
	<i>December 2007</i>		<i>December 2008</i>	
	Banks	Branches	Banks	Branches
Deposit banks	33	7,570	32	8,742
State-owned banks	3	2,203	3	2,417
Private banks	11	3,625	11	4,290
Banks in the Fund**	1	1	1	1
Foreign banks	18	1,741	17	2,034
Development and investment b.	13	48	13	49
Total	46	7,618	45	8,791

* Branches in foreign countries and Turkish Republic of Northern Cyprus are included.

** Banks under the Deposit Insurance Fund

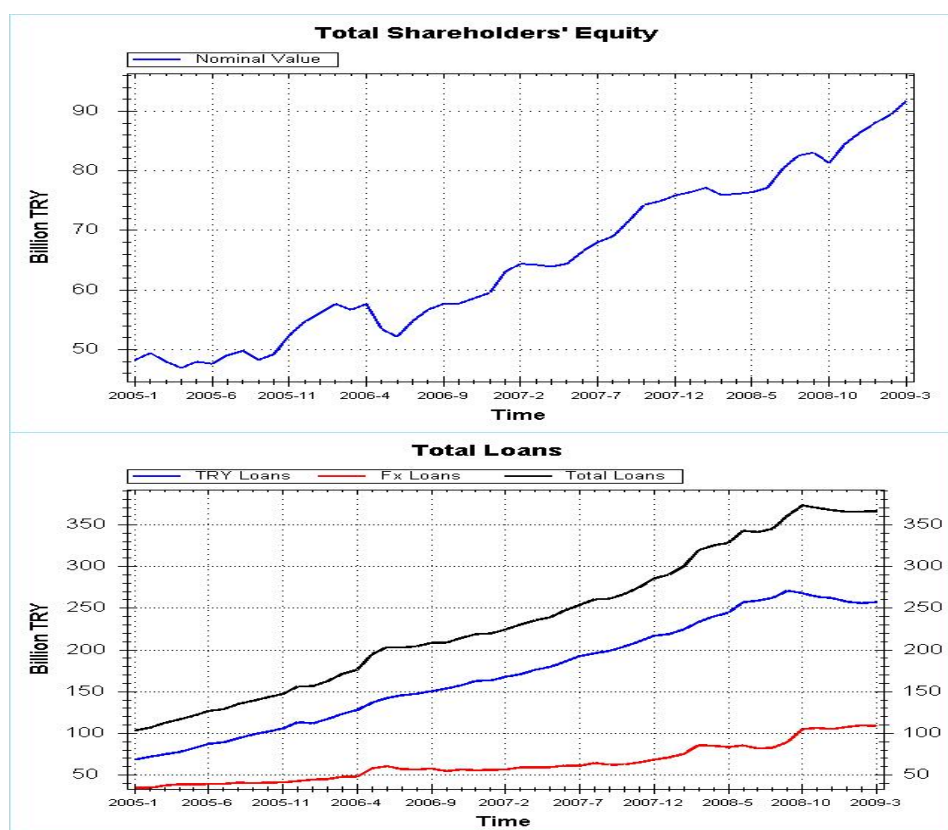
Regarding the education level of bank employees, 1 percent of the employees were primary-school graduates, 25 percent high-school graduates, 70 percent university graduates, and 4 percent had post-graduates degrees. As of December 2008, regarding the distribution of bank employees by sex, 49 percent of the employees was female. This ratio was 37 percent in state-owned deposit banks, 54 percent in private banks, 37 percent in the bank in the Fund, 54 percent in foreign banks and, 32 percent in development and investment banks⁹⁸.

The asset size of the Turkish financial sector was TL 947,7 billion in 2008, and the ratio of financial sector assets to GDP is realized as 99,8%. In 2008, the total assets of the Turkish banking sector increased nominally by 26% when compared to the end of previous year to TL 733 billion. While there are no important changes in the conduct of the increase of total assets, the increase in loans seems to be slowed down relatively. While the share of banking sector TL assets in total decreased to 69, 7%, the share of TL liabilities within total liabilities decreased by 1.4 points to 65,1 % when compared to previous quarter (Graphics 6.4 and 6.5).



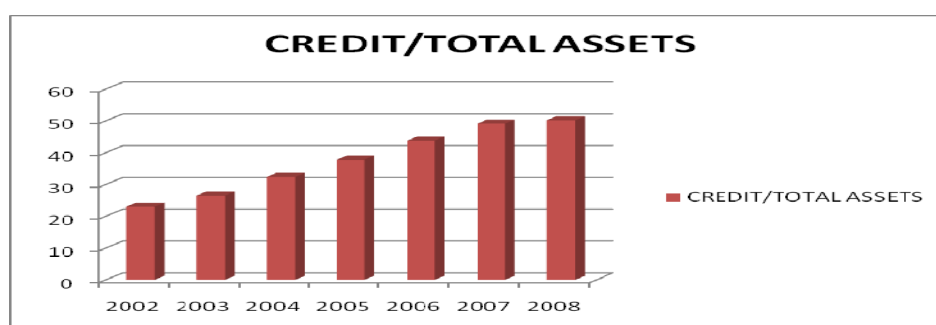
Graphic 6.2 Total Assets

⁹⁸ TBB, Statistical Reports, Banks, Branches and Employees, December 2008.



Graphic 6.3 Total Loans and Total Shareholders' Equity

Share of public securities in Turkish banking sector assets declined by one-third to 28% in the last 5 years; while share of credits to private sector more than doubled and reached to 49% during the same period (Graphic 6.4).



Graphic 6.4 Credit / Total Assets

The credits extended to the SMEs by Turkish banking sector have also increased significantly to USD 95 billion as of 2007. This corresponded to almost 20% of the GDP. As a further note, 32% of these credits were in the category of credits

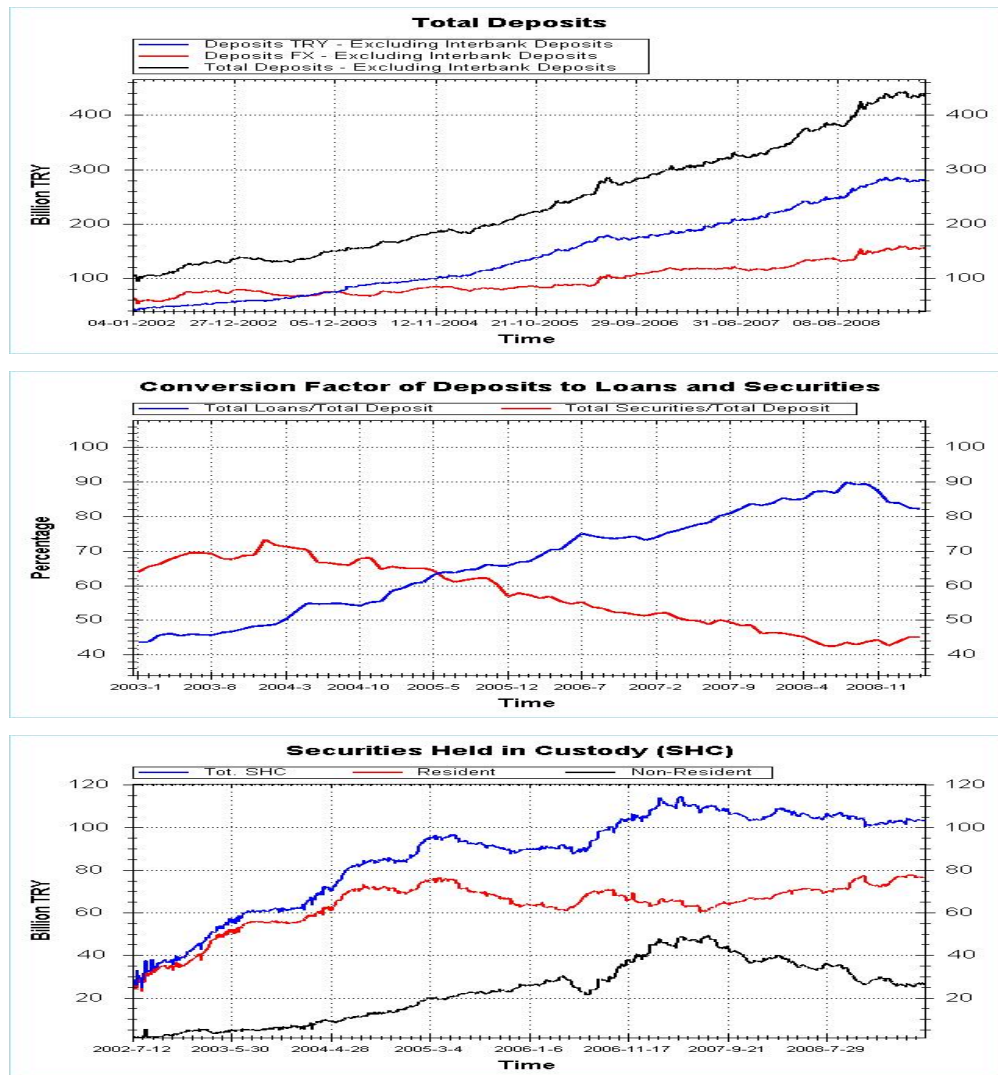
extended to micro enterprises. The ratio of private sector credit used by households and firms to GDP has also rapidly increased, though it is still low in international standards⁹⁹.

When the global economic crisis is considered, it is seen that the growing performance of Turkish banking sector makes important contribution to the economy. The portfolio investments of domestic residents increased by 18,7% when compared to previous year to TRL 544 billion, while total amount of investments of residents abroad is realized as USD 67 billion. GS investments of residents abroad decreased compared to previous period, while their deposit increased. In 2008, stock investments of domestic residents decreased by 35,5%, and the stock investments of residents abroad decreased by 40,6%. Deposit-weighted resource structure of banking sector continues, of deposit that comprises 62% of total liabilities as of 2008 (Graphic 6.5). Resources from foreign markets due to the increases in borrowing costs in consequence of the global crisis experienced no evident change throughout 2008. However, as no serious deterioration was experienced in the current macroeconomic outlook of Turkish economy and banking sector maintains its strong condition as well as good risk management practices assist the procurement of the said resources despite the cost increase.

When the credit risk of banking sector in 2008 is analyzed, it is seen that it followed a process in the sector in parallel to the previous period. As of 2008, NPL amount increased by 28,7% when compared to the previous year. The decrease in the ratio of provisions set aside to NPL continues in this period.

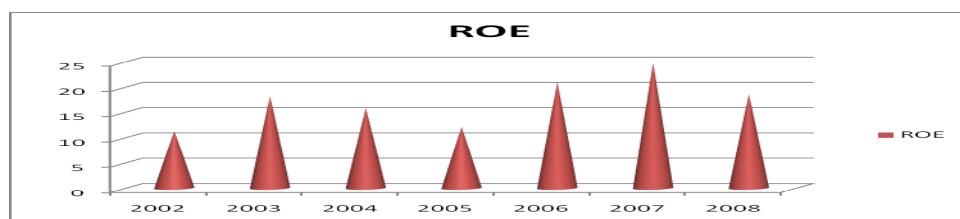
Commercial portfolio decreased by 26,2 % in the last quarter of 2008, when compared to the previous quarter and realized as TRL 76,9 billion. The most important factor in the said decrease is the legal amendment made on accounting securities.

⁹⁹ Durmuş Yılmaz, “Access to finance and capital markets development”, **XIIth Euro-Mediterranean Conference on Economic Transition**, Bruxelles: BIS, 20 February 2008. pp 2–3.



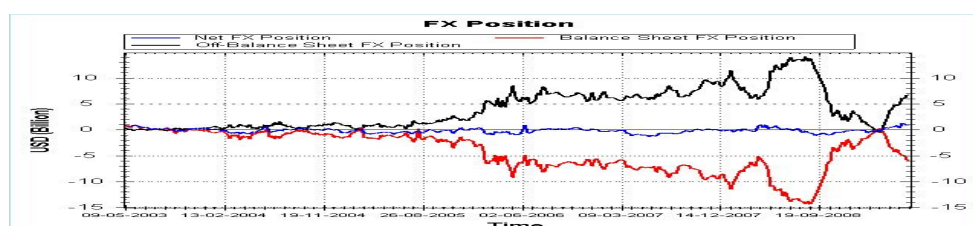
Graphic 6.5 Total Deposit, Securities Held in Custody and Conversion Factor of Deposit to Loans and Securities

As of 2008, profitability of banking sector decreased by 10,5 % when compared to 2007. In the same period, high increase in non-interest expenses when compared to non-interest incomes affects the profitability of the sector negatively. Distribution of income items within total incomes displays that the customer-focused profitability tendency continue in the sector. As a matter of fact, interest from loans, fees and commissions and banking service incomes constitute 64, 6 % of total incomes. It is observed in the weights of expense items of the sector in total expenses that interests to deposit constitute 54% of total expenses. Hence, deposit weighted finance structure continue in the sector.



Graphic 6.6 Return on Equity

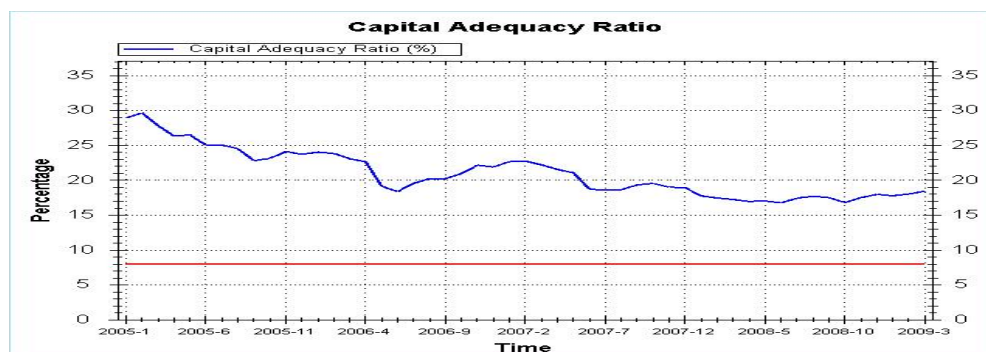
Short-term liquidity ratios comfortably meet the legal thresholds. In all banks groups, it is observed that FX liquidity adequacy ratios and total liquidity adequacy ratios concerning daily and second-maturity tranche were realized above the determined threshold. Throughout the sector, that FX liquidity adequacy ratio concerning the second-maturity tranche increased by 3,5% and total liquidity adequacy ratio increased by 4 %.



Graphic 6.7 FX Position

CAR of the banking sector stood at 18 %, well above the minimum legal requirement of 8% and the average of the European Union, which is 12,1%. CAR which was 17,5 % in September 2008 period was realized as 18 % as of December 2008. The increase by 0.5 points observed in the last quarter stem from the fact that own-funds of the sector increased higher than the increase in risk weighted assets. It is considered that the sector maintains its prudential approach by preserving its strong capital structure against the possible deteriorations. In fact, paid-up capital of the sector increased by 4,7 % in the same period. Despite the rapid rise in shareholders' equity, CAR decreased because of the inclusion of operational risk to the calculation of capital adequacy ratio and increase in loan volume. The impact on capital adequacy standard ratio from the inclusion of operational risk to capital adequacy calculations was found as 2.9 percentage points according to the calculation based on September 2007 balance sheets.

This impact was 2.6 percentage points for deposit banks and 10.8 percentage points for development and investment banks.



Graphic 6.8 Capital Adequacy Ratio (%)

On the other hand, the implementation of the Basel II for rating-based calculation of the credit risks for the basis of measurement of banks' capital adequacies as planned under the road map for transition to Basel-II was postponed to a later date than 2009¹⁰⁰. However, this direct lending activity to emerging markets has been replaced by lending through subsidiaries¹⁰¹ partly compensating for the overall decrease. BIS reporting banks' local lending in local currencies in developing countries rose from 12% of their total developing country exposures to 36%¹⁰².

Table 6.5
Impact of Operational Risk on Capital Adequacy

	<i>Excepting operational risk</i>	<i>Including operational risk</i>	<i>Difference</i>
Deposit banks	20.4	17.8	2.6
State-owned banks	25.9	20.8	5.1
Private banks	19.2	17.2	2.0
Foreign banks	17.5	15.6	1.8
Development and investment b.	77.2	66.4	10.8
Total	22.4	19.5	2.9

Source: BAT, 2007

¹⁰⁰ BAT, pp.51–52

¹⁰¹ Hawkins, John "International Bank Lending: Water Flowing Uphill?", *World Institute for Development Economics Research Discussion Paper*, No. 2202 (April 2002), p.42.

¹⁰² David Lubin, "Bank Lending to Emerging Markets – Crossing the Border", *World Institute for Development Economics Research Discussion Paper*, No. 2202 (June 2002), p.61.

In Summary, during and after the restructuring program, the banking sector has entered a high and stable growth period, and the total assets of the sector, which was TRL 104 billion in 2000, grew by seven-fold in 8 years and reached TRL 733 billion. There has been a consolidation in the sector, and concentration has increased. With the success of the program, the weight of public banks in the system has decreased. The capital structure of the sector has strengthened; and the capital adequacy ratio that was 9.3 percent in 2000 rose to 18 percent as of end-2008. The profitability performance of the sector has improved and its asset quality has stably improved; while one quarter of loans were non-performing in 2001, the rate of non-performing loans fell below 4 percent in 2008. The financial intermediation has started to operate effectively, and the share of loans in the total assets of the sector rose to 50 percent in 2008, from 23 percent in 2001 (see Appendix 3).

How Turkish banks should respond to the impending new rules. By contrast, some -mainly European- banks have used early drafts of Basel II to prepare for what they see, despite the uncertainties, as inevitable changes in capital standards. Banks in emerging markets are lagging behind. Those in China and India have opted out entirely, claiming that the accord is too complex. In line with international developments, Turkey had started works in 2002 for incorporating the infrastructural elements of Basel-II to the Turkish banking system.

Basel-II Working Committee was established at the BAT by the participation of BRSA officials and top managers of various banks in March 2003 and was charged with risk management for the purpose of instruction of banking system about Basel-II, expression of the banking system's opinions about the subject regulations, and formation of a joint strategy. This Committee had some works under various headings for transition to Basel-II. Then, Basel-II Coordination Committee was established by participation of the officials of BRSA, Treasury Under secretariat, the Central Bank, the Capital Markets Board, the BAT, and some individual banks for the purpose of creating an efficient discussion platform in the process of preparations for Basel-II and making works on various technical subjects for Basel-II.

One of the major works of Basel-II Guidance Committee was to prepare the “Road Map for Transition to Basel-II” as an efficient planning of the process of transition to Basel-II through receiving the opinions of and in consultation with the banks. BRSA announced to public this report in May 2005.

Within this framework, Basel Committee’s third Quantitative Impact Study (Group 1 banks are banks which fulfil all of the following three criteria: The bank has a Tier 1 capital in excess of €3 billion; is diversified; and is internationally active. The sample of other non-G10 countries is considerably smaller compared to QIS 3, in part caused by the fact that several former other non-G10 countries are now part of the CEBS group.) was participated by six banks with a high share in the Turkish banking system. Benefitting from the experience of QIS–3, a domestic quantitative impact analysis study (QIS-TR) was performed in July 2003 with participation of 23 banks making up 95 percent of Turkish banking sector in terms of asset size. That was followed by QIS-TR2 study that was performed based on the data of September 2006 period with the participation of 31 banks representing approximately 97 percent of the sector’s total assets. The capital adequacy ratio of the participant banks is decreasing by 5.6 points to 13.7 percent with Basel-II while this ratio is 19.3 percent according to the current legislation. QIS-TR2 was performed during October 2006-June 2007 period¹⁰³(Graphic 6.10).

According to Ninth Development Plan, it is determined that the most important factors that contribute negatively to CARs with the convergence to Basel-II are the rise of the risk weight of FX public securities included in public portfolio and trading portfolio to 100 percent. The inclusion of operational risk to capital adequacy calculations and the implementation of 100 percent risk weight for most of the institutional loans since most of the customers in institutional portfolio do not have formal credit rating. Besides the studies related to Basel-II, it is planned to test the software for the implementation of computer supported on-site supervision, to complete the researches related to the measurement of interest rate risk of banks and the implementation of audits for the adaptation of non-bank financial institutions to new

¹⁰³ BAT, 50th Anniversary of The Banks Association of Turkey And Banking System “1958–2007”, Publication No: 62, March 2009, <http://www.tbb.org.tr/english/50/TBB50-english.pdf> (2 May 2009), p.51.

legislation. Additionally, it is planned that Financial Sector Commission, which was formed in order to ensure confidence, stability and development in financial markets, provide coordination and exchange of information between institutions and make common policy proposals, will start to produce concrete outputs/outcomes with the determination of sub working subjects. Implementation of on-site supervisions for the adaptation of non-bank financial institutions, renovating of reporting format and the completion of banking performance-reporting system are other priorities for the year 2007¹⁰⁴.

On the other hand, for OECD member countries with poor rating standings, this change is very serious. Turkey constitutes a very typical example: while under the current regulations it is attributed 0% exposure risk, it will receive a much higher risk weight from now on, with its rating of BB- (receiving 100% under the SA). For sure, the yield spread for its bonds in the international markets or the rates at which Turkey borrows from financial institutions do reflect its level of risk represented by its grade. However, under the new Framework apart of the pricing, the capital requirement that this exposure will bring, becomes a more crucial input, perhaps decreasing in turn the willingness to lend to such sovereigns.

Turkey currently pays the highest interest rates among IMF debtors. Around 60% of Turkey's foreign debt is owed to banks; with nonblank financial institutions, this percentage goes up to 80%.

There is one outcome of the removal of the OECD criteria for Turkey. Turkish banks that receive a 20% risk weight under the current framework will be receiving risk weights in line with their ratings, i.e. 100% under the SA and something corresponding to BB+ to B+.

In order to receive the same treatment with today, therefore, their ratings must be between AAA to A-, which does not seem probable in the near future. Yet, for their rating bracket (BB+ to B-); there exists one option for applying 50% in lieu of 100%:

¹⁰⁴ Undersecretariat of State Planning Organization, Ninth Development Plan (2007-2013) 2008 Annual Programme, <http://ekutup.dpt.gov.tr/program/2008i.pdf> (8 April 2009), p.104

each time extending them loans with an initial maturity of less than 3 months. This has the potential to decrease the overall maturity of lending to Turkish banks and thus increasing the volatility since the renewal of the loans will take place more frequently.

The funds borrowed from foreign banks, institutions and funds constitute 7% of the total bank liabilities in Turkey, which is not negligible. Therefore, the fact that for ratings corresponding to risk weights of 50% or 100%, depending on the maturity, it is no more possible to borrow at rates for 20% risk treatment for the Turkish banks becomes even more important.

7. SME

It is a fact that the SMEs play a vital role in both developed and emerging economies. They contribute to the economic growth in various areas such as providing employment opportunities; being flexible and conformity to the changing environmental conditions; encourage entrepreneurship in an economy; leading to differentiation in product type by the help of boutique production and last but not the least, providing semi-finished products to the large companies.

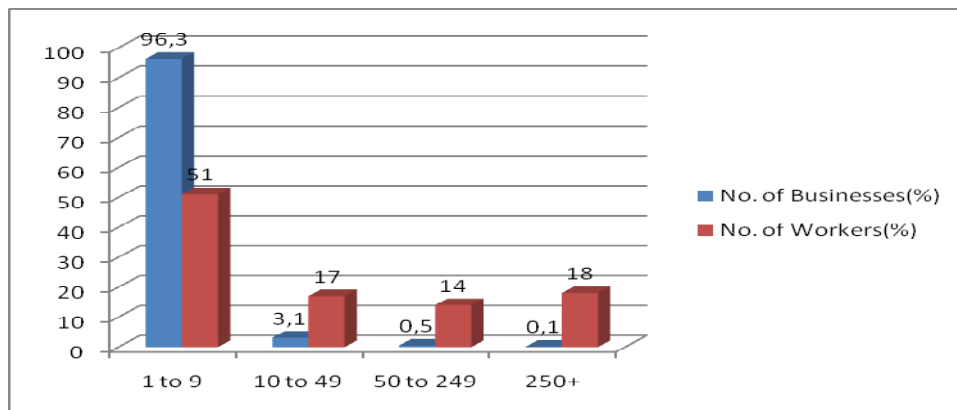
7.1 SME DEFINITIONS

The new definition of SMEs is also important in Basel II principles. According to this definition, SMEs are defined as the companies that have an annual total net sales volume of lower than 50 Million Euro.

Turkey can be classified as SMEs. The definition of SME was not clear until recently in Turkey. The Commercial and Trade Ministry introduced a new definition by the end of 2005 in Turkey. According to this definition, SMEs are the companies that employ less than 250 workers and have a net sales volume and/or balance sheet total of less than 25 Million TL. In EU, on the other hand, the SMEs are defined as the companies that employ up to 250 workers and have a net sales volume of less than 50 Million Euro or a balance sheet total of less than 43 Million Euro.

Table 7.1
Enterprise Category in Turkey

	Number of Employees	Net Sales Volume
Micro	Less than 10	1 Million TRL
Small	Less than 50	5 Million TRL
Medium	Less than 250	25 Million TRL



Graphic 7.1 Numbers of Businesses and Workers

Source: TUIK, 2002

7.2 THE ROLE of SMEs IN THE ECONOMY

SMEs constitute the dominant form of business organization worldwide, accounting for over 95% and up to 99% of the business population depending on the country. For instance, in 2003, 99,8% of enterprises in the EU were SMEs. At the higher end of the scale, small firms constitute 99% of manufacturing enterprises in Italy, and close to 80% at the lower end for the United States. They can be innovative and growth oriented (only a small subset) or subsistence-driven. Depending on the enterprise's characteristics and stage of business creation and development, the financing needs and sources (*e.g.* family, banks, equity, etc.) are likely to differ¹⁰⁵.

SMEs contribute to the economic growth in five main areas:

- Employment opportunities
- Flexibility and conformity to the changing environmental conditions
- Encourage entrepreneurship
- Differentiation in product type by the help of boutique production
- Provide semi-finished products to the large companies

Table 7.2 depicts the share of the SMEs in the economy in terms of employment, investments; value added, export and credit volume for different countries.

¹⁰⁵ OECD, *The SME Financing Gap Vol. I Theory and Evidence*, OECD Publishing, 13 November 2006, p.34.

According to this table, although there is a coincidence between Turkey and other countries for the share of the SMEs in total firms (98%) and the share of it in total employment (70%) on average, there is a notable difference between other countries and Turkey in terms of economic value added, credit volume and capacity utilization ratio. SMEs produce more than one-third of the country's GDP.

According to 2004 OECD report, SMEs constitute a major part of the Turkish economy as they embrace 98,9% of the total number of enterprises, 76,7% of total employment, 38% of capital investment. However, SMEs generate only 26,5% of value added and 16% of the exports.

Table 7.2
The Position of SME in the World Economies

	Turkey	USA	Germany	Japan	France
SMEs/Total Companies (%)	98.9	99.7	99	99.4	99
Employment Ratio (%)	76.7	56.6	64	81.4	67
Value Added Share (%)	26,5	43	49	52	54
Investment Share (%)	38	38	44	40	45
Share in the Export (%)	16	32	31	38	26
SME Credits/Total Credits(%)	25	42.7	35	50	29

Source: OECD (2004), KOSGEB (2006), DPT (2007) and BDDK.

While there are 19 Million SMEs in the EU, the number of SMEs in Turkey is only 1,8 Million. The economic value added, bank credit and capacity utilization ratio on average is 81 %, 45 %, and 80 % in the EU and 32 %, 4 % and 25 % in Turkey respectively¹⁰⁶.

¹⁰⁶ Mustafa Kemal Yilmaz and Ali Kucukcolak, "Effects of BASEL-II Standards on Small-Medium Size Enterprises: Evidence from the Istanbul Stock Exchange", **SSRN**, 2007, p.8.

Observatory of European SMEs, was carried out in the 27 Member States of the European Union (25 at the time of the fieldwork), as well as in Norway, Iceland and Turkey under the framework of the Flash Euro barometer survey series. The purpose of this specific contract is the provision of information, through a survey, on the characteristics and specificities of SMEs across Europe. For this purpose, the replies of SMEs are compared to those of large enterprises (enterprises with at least 250 persons employed).

An average a SME in the EU employs 6,8 persons. SMEs report the largest number of employed persons in Slovakia, Estonia and Malta. On the other hand, SMEs are the smallest on average in Turkey and the Czech Republic.

Turkish SMEs are smaller than 27 Member States of the European Union and our SMEs have more than problems about to access to finance, to use new technology, skilled labor, infrastructure and quality.

7.3 EFFECT of SME on BASEL II

Concerns have been raised that Basel II will change the way banks analyze credits, introducing new credit risk management techniques and possibly reducing the lending activity toward SMEs. This is due to banks' potential perception that SMEs carry higher risk and, hence, higher capital requirements than under Basel I. Many SME associations in different countries have publicly complained about the new rules and many governments are now concerned¹⁰⁷.

From the beginning (1999) of the capital adequacy reform process, the Basel Committee paid particular attention to the SME segment, mainly by having changed the formulas to calculate risk weights linked to SMEs three times (January 2001, April 2003, June 2004). In the last version, banks are able to consider small and medium sized enterprises as retail or as corporate entities, primarily based on their total exposure to this entity. If total exposure is under "1 million Euro SMEs can be classified as retail, but another important qualitative requirement must be followed: the credit must be

¹⁰⁷ Edward Altman and Gabriele Sabato, "Effects of the New Basel Capital Accord on Bank Capital Requirements for SMEs", **Journal of Financial Services Research**, 28, 2005, p.18.

managed as a retail exposure. Risk weightings of SMEs are given in Table 7.3. Corporate SME risk weighting is according to rating score and SME as retail's risk weighting is standard 75 %. The favorable risk weight of 75% attributed to retail portfolios falls between A- and BBB+. SMEs should be eligible for lending that corresponds to a credit rating higher than or equal to BB-. Nevertheless, most of the SMEs are believed to be well below this qualification¹⁰⁸.

Table 7.3
Classification of Companies According to Basel II

Credit Amount	Net Sales (Annual)	Risk Weight Classification
>1.000.000 Euro	>50.000.000 Euro	%100 Corporate
>1.000.000 Euro	<50.000.000 Euro	If no rating, %100 Corporate SME
<1.000.000 Euro	>50.000.000 Euro	%100 Corporate
<1.000.000 Euro	<50.000.000 Euro	%75 Retail SME

Source: BIS.

In Pillar I of the Basel II, the rules to calculate bank capital requirements for each of the different segments, or “buckets”, are clearly explained¹⁰⁹. New capital requirement formulas are given on the Table 7.4.

Table 7.4
New Capital Requirement Formulas

SME as retail	SME as corporate
$\text{Correlation} = R = 0.03 \cdot (1 - \text{EXP}(-35 \cdot \text{PD})) / (1 - \text{EXP}(35)) + 0.16 \cdot [1 - (1 - \text{EXP}(-35 \cdot \text{PD})) / (1 - \text{EXP}(-35))]$	
$\text{Capital requirement} = K = \text{LGD} \cdot N((1 - R)^{-0.5} \cdot G(\text{PD}) + (R / (1 - R)^{0.5}) \cdot G(0.999)) - \text{PD} \cdot \text{LGD}$	
$\text{Correlation} = R = 0.12 \cdot (1 - \text{EXP}(-50 \cdot \text{PD})) / (1 - \text{EXP}(-50)) + 0.24 \cdot (1 - (1 - \text{EXP}(-50 \cdot \text{PD})) / (1 - \text{EXP}(-50))) - 0.04 \cdot (1 - (S - 5) / 45)$	
$\text{Capital requirement} = K = (\text{LGD} \cdot N((1 - R)^{-0.5} \cdot G(\text{PD}) + (R / (1 - R)^{0.5}) \cdot G(0.999)) - \text{PD} \cdot \text{LGD}) \cdot (1 - 1.5 \cdot b)^{(-1 \cdot (1 + (M - 2.5) \cdot b))}$	
$\text{Maturity adjustment} = (b) = (0.11852 - 0.05478 \cdot \text{LN}(\text{PD})^2)$	

¹⁰⁸ Powell, p.15

¹⁰⁹ Altman and Sabato, p.18.

All formulas follow the same calculation steps involving inputs for correlation (R), capital requirement (K) and RWA ($K \times 12.5 \times EAD$). Since the final capital requirement is the 8% of this amount, we do not multiply The RWA by 12.5). The most important input variables, to be provided by the banks, are three (PDs, LGDs, and EADs), while the asset correlation (R) is implicitly given by the Basel formulas.

7.3.1 SMEs' Credit in Turkey

The results of the “*Quantitative Study*” held by the Basel Committee in 2003 with the participation of 350 international banks also depict that, the capital requirements for the international banks extending credits to the SMEs decrease by 2–5 % after the Basel-II¹¹⁰. This fact indicates that there would be a cost advantage for the SMEs operating in these countries in the next decade.

The findings of the local “*Quantitative Study*” held by the BRSA in 2003 show that there would be an increase (from 5.3 % to 6.7 %) in the capital requirements of banks for the credits extended to the SMEs. This fact points out more or less to a certain level cost increase in using credits from the banks for these enterprises. Besides the economic crises, Turkey went through in 1994, 2000–2001 and current crisis, the tendency of the biggest banks to give priority to large firms, with which they tended to have cross shareholdings, worked the detriment of SMEs. The government assisted small businesses, including those in the agricultural and SME sectors, using public banks (Halkbank for SMEs and Ziraatbank for agriculture), which offered subsidized loans.

Another fact is that, “only 5-7 % of the bank credits are extended to the SMEs operating in Turkey. Further, these firms are not accustomed to use credits from abroad. Therefore, it would take time for the SMEs to improve their corporate structure to the new conditions”¹¹¹.

Istanbul Chamber of Industry each year announces the list of the “First Largest 500 Industrial Institutions of Turkey” and “Second Largest 500 Industrial Institutions of

¹¹⁰ BRSA, Basel-II Quantitative Study (QIS) Evaluation Report, 2004.

¹¹¹ Yilmaz and Kucukcolak, p.6.

Turkey. According to the most recent of these ICI lists, the number of industrial companies whose sales exceed €50 by the end of year 2006 is 416. This means that only 416 of all industrial firms in Turkey cannot be treated as SMEs in the IRB Approach. The rest still get a more favorable treatment, under which the capital charges on a loan to an SME will drop by as much as 20%¹¹². Besides being an incentive for using the IRB Approach for Turkish portfolios, it points to the fact that some financial thresholds will be meaningless for economies like Turkey, in turn jeopardizing the effectiveness of the Basel II Framework.

Table 7.5
SME Loans in the Turkish Banking Sector, Billion TRL

	2006	2007	2008 June
Total SME Loans	58.1	80.7	92.1
Loans to Micro Enterprises	23.5	27.6	31.3
Loans to Small Enterprises	16.8	26.2	28.6
Loans to Medium-Sized Enterprises	17.8	26.9	32.2
Total Number of SME Customers (Thousand)	1,650	1,558	1,522
Micro Enterprises	1,111	1,024	1,106
Small Enterprises	448	421	317
Medium-Sized Enterprises	91	113	99

Source: BRSA, 2008.

The Turkish authorities' approach to objectives about SMEs is in line with the guidance for SME policies set out in the Bologna Charter and the European Charter for Small and Medium-sized Enterprises. In light of the SME sector's weaknesses attention will be focused on increasing SMEs' share in the overall volume of bank lending;

¹¹² Caruana, p.11.

deploying structures that would enable SMEs to make more and better use of financial instruments.

One important factor for SME financing in Turkey is that with continuing efforts to control government expenditures and reduce inflation rates, the government will be obliged to limit further its current SME financing programs, whose scope is not very large and Halkbank does not seem to be able to continue with its current mission. In addition, since smaller enterprises generally do not have either the collateral or cash flows of their larger competitors, they will have less financing opportunities.

As of June 2008, the share of SME loans in total loans reached 27,3%. Since a very great majority of the enterprises in Turkey is SMEs and since Turkey is a developing market in terms of loans made available to SMEs, it is expected that the growth trend in such loans will continue in the future.

7.3.2 Rating in Turkey

Basel II states that the companies operating in Turkey would apply the country credit rating for the credits used from abroad. It has a 0% risk weight will no longer carry out this advantage and the Turkish companies could not get a credit rating over the country rating from the independent rating agencies in the market. This would lead to a situation where their costs in foreign trade financing and in credit usage abroad would inevitably increase. There is a significant point to be discussed here. “As the rating agencies may get the information about the countries’ financial indicators with a certain time lack, their ratings most often follow the market, rather than guide it. Therefore, the credit users may have trouble in this process”¹¹³.

To develop an appropriate and satisfactory credit rating model for the case of Turkey is very important, and will be even more important due to the new regulations of Basel II, because by doing so, more efficient distribution of capital and resources will be possible and there will be remission in GDP and in other macroeconomic indicators.

¹¹³ Yilmaz and Kucukcolak, p.5.

For Turkey, it is clear that credit rating activities reduce the unregistered economic activities and increase the efficiency. Through credit rating, it is possible for Turkish SMEs to protect their credibility.

Most, if not all, Turkish corporate do not have a rating and those have usually at the speculative grade (B-); therefore they will all get 100% risk weight. Note also that due to the high concentration of loans, most exposures will be falling into the corporate category in Turkey, with an overall neutral affect.

SMEs in Turkey already encounter severe conditions such as changing markets, new technology, shrinking profitability and erratic, deficient and ambiguous cash flows. According to QIS TR report, Basel II rating processes will compound these conditions for SMEs. The major problem awaiting the implementation of Basel II Accord is also indicated various surveys that most of the SMEs in Turkey operate with incomplete financial records. Until Basel II, banks were extending the credits by taking the unregistered data provided by the borrowers into consideration, but this data cannot be fed into the system and therefore will be useless after the implementation of the Accord. Because of these off-the record economy, Banks and CRAs waited the new Turkish Commercial Law that is expected to be issued in 2009. According to TCL, Turkish Accounting Standards shall be implemented which are in accordance with International Financial Reporting Standards. CRAs will rely on quantitative factors derived from financial statements that will be prepared according to new Turkish Accounting Standards and audited by independent auditing companies. Surveys on SMEs in Turkey admit that most financial statements of SMEs reflect a tax avoiding strategy rather than forward-looking investment and maximizing earnings strategy. This goes in parallel with the secrecy that the SMEs tend to treat their business affairs and accounts. SMEs are so reluctant in disclosing their financial statements that they rather prefer to pay fines¹¹⁴.

In this regard, SMEs will face the cold fact that accounting records are indispensable for credit rating that they need to acquire in order to get external

¹¹⁴ Baki R. Balci, Raif S. Albayrak and Pelin Karakaya, "SMEs& Rating", **I. International Symposium: SMEs and Basel II**, Izmir: Izmir University of Economics, 2-4 May 2008, p.173.

financing. This affects the cost of this resource as well. For instance, two firms that are identical except for the transparency and concordance of their accounting records will encounter different costs of capital in external financing. In the extreme, one of the firms might be ineligible for the credit. The transition period may last long enough that the CRAs develop their databases to conduct comparative analysis. In particular, SMEs will be asked to demonstrate their business plans and will be evaluated mostly through interviews. This grading strategy is widely used for founding companies throughout countries that have already implemented the Accord¹¹⁵.

¹¹⁵ Ibid.

8. APPLICATIONS

The applications were mainly based on two different case studies, outlined the overall market satisfactory sourced by implementation of its impact on financial institutions. Case studies especially, focused on learning the effects of Basel II on SMEs and Turkish banks. Research survey covered SMEs that were located in Samsun, and selected Turkish Banks.

The purposes of the applications were outlined the perspective of sample SMEs and Turkish Banks in terms of Basel II framework and revealed the actions that they need during the adaptation period.

8.1 THE CASE OF TURKISH BANKS

The case of Turkish banks aimed to explore the response of the sample banks to the challenges posed by the Basel II framework, which strengthens existing capital rules by making them more risk-focused and by aligning regulatory capital levels more closely with economic capital to reflect better market risks.

In this study, “Descriptive Research Method” is applied for setting current state considering purpose of the research. Descriptive research is also called Statistical Research. The main goal of this type of research is to describe the data and characteristics about what is being studied. The idea behind such kind of research is to study frequencies, averages, and other statistical calculations. Although this research is highly accurate, it does not gather the causes behind a situation. Descriptive research is mainly done when a researcher wants to gain a better understanding of a topic.

Despite of fact that there were 46 banks in Turkey, only eight banks were accepted to response due to banks were unwilling to share their information. Therefore, the research data was collected from eight banks, out of 46 banks in Turkey by using questionnaire via e-mail during the period of 01.02.2009—01.05.2009. Banks generally do not share their information with third parties. Questionnaire form is covered an explanatory cover letter, multiple choice and close-end questions. When preparing

questions, QIS TR1&2 questions, the last report on Basel II from BRSA and Advance Report in Banking Sector May 2009 were used. The sample size was determined by the purposive sampling method. The questionnaire was pre-tested and refined based on comments and suggestions received internally and in several sessions with producers.

All questionnaires were administered to directors of risk management division of sample banks, since they had more experience on research questions.

8.1.1 Results of Survey on Turkish Banks

After outlining, prevailing situation of sample banks using descriptive statistics such as percentage, frequency, median and mean, advanced statistical tests were used for exploring relationship among variables. Since research data was mainly ordinal and nominal level, non-parametric tests such as Friedman One Way Variance Analysis, Wilcoxon test, Kruskal Wallis H, Mann Whitney U test and Chi-Square test were performed. Statistical Package for Social Sciences (SPSS) 12.0 for Windows was used to perform statistical analyzes.

In addition to these things, the analysis that was performed after the survey shows us our sample growth's representation capacity of the main population with the report of BRSA that was released in May 2009. BRSA prepared its report with the participation of the banks that are active in our country. In forthcoming parts of our study, we are going to compare our survey results with the report of BRSA.

Research results showed that all sample banks have a risk management unit. In half of the banks, there were 1 to 5 persons at the risk management unit, while the rest employed more than six persons. There is a positive relationship between the importance of the risk management unit and the number of employee in the risk management unit.

In the research area, mostly banks do not prefer to benefit from advice of specialists on credit risk management. Only one quarter of sample banks benefit from the advice of the specialists. Therefore, 43% of the banks are planning to benefit from

this type of service. In general, getting counseling service from the specialists will ensure shortening of the process of accommodation to Basel II for banks.

BRSA (2009) reported that 98% of the banks created a superior management to adapt CRD/Basel II applications, and 78% of the banks arranged the responsible personnel for working on the applications. In addition, 87% of the banks created the units to adapt their activities to CRD/Basel II, and 69% of them organized committees focusing on CRD/Basel II.

Based on the results of the survey, all sample banks inform the top management about credit functions', monitoring and validation process. Most sample banks record the procedures regarding Credit Rating System / Scoring Methods due to written procedures are very important from the aspect of risk management in banking system.

Twenty five percent of the sample banks follow, especially foreign capital banks, external model. They mostly prefer using Credit Risk method.

In sample banks, board of directors approves strategies and policies regarding credit risk management. Many banks (75%) assign the strategies and policies intended for adapting their banks to Basel II, while 25% of banks continue the preparation studies.

Adapting completely to Basel II and having effective risk management culture is very important. 87,5% of the banks report that their personnel, units and/or committee are appointed with the process of adapting Basel II to their banks: 57% of the banks reported that there are studies for personnel to adapt to the risk notion related to the bank whereas 43% of sample banks continued preparation studies.

Having looked into the obstacles and deficiencies on CRD/Basel II it is realized that the main problem is the lack of data (56%) in the research data. Institutional uncertainty (20%) and lacking of technology (15%) are followed it.

Based on results of the research, 25% of sample banks consider data related to PD and LGD. Studies related to accounting the possibility of default are continued in

50% of the banks in the sector. However, 25% of sample banks do not make any calculation. It was clear that half of sample banks continue to consider data related to EAD.

The most important difficulties sample banks face is gathering related to PD, LGD and EAD during the adaptation to Basel II. These findings confirmed the prevailing situation in banking sector. Turkish banks need to collect and store PD related at least five-year historical data about Basel II internal rating approach.

Since less time left for the application of Basel II Capital Requirement regulation, in general, questioning the level of sample the banks about Basel II and evaluating credit risk (both standard and internal rating systems/approaches) is very important. According to face interviews, it was observed that all the banks are ready for standard approach; however, they are still in their preparation stages for adopting internal rating approaches. The level of adaptation to Basel II was presented on Table 8.1.

Table 8.1
The Level of Adaptation to Basel II

	Frequency	Percent
Beginning	1	12,5
Intermediate	6	75,0
Advanced	1	12,5
Total	8	100

Regarding the budget assignment, half of banks assign budget to credit risk management for adapting Basel II (Table 8.2). 87,5% of sample banks suggested that they train their personnel and employed new staff for Basel II applications.

Table 8.2
The Budget Assignment to the Credit Risk Management Unit

	Frequency	Percent
Yes	4	50
No	3	37,5
Planning	1	12,5
Total	8	100

The period for transition to internal rating approach of was presented in Table 8.3. Chi-square analysis showed that there is statistically significant difference among banks. Only 25% of the sample banks use the IRS in their banks, while the rest banks need time to use it ($p \leq 0,05$).

Table 8.3
Period of transition to IRS of the banks

	Frequency	Percent
Used	2	25
2012	3	37,5
2014 and More	2	25
Never Used	1	12,5
Total	8	100

Table 8.4
Reasons for Hindering to Adopt Basel II

	Mean Rank	Ranking
Lack of Historical Data	4,13 ^a	1
Cost	3,75 ^a	1
Inadequacy of information technology	3,00 ^b	2
Insufficient customers' information	2,56 ^b	2
Top management don't give enough interest for B II	1,56 ^c	3

*Variable having same letter did not statistically different.

Friedman One Way Variance Analysis and Wilcoxon test showed that lacking data and cost are the most important hindering factors. Inadequacy of information technology and insufficient customers' information are the second order problems to adopt Basel II. The third hindering factor is the preference of the top management ($p \leq 0,01$).

The internal problems

Among the internal problems of sample banks, main problem is the lack of the effective risk management. Banks, which follow Basel II criteria, can minimize their problems based on the results of the frequency analysis. Thus, the most important internal problem of sample banks is inadequacy of information technology. Then comes pricing without attention to risk and inefficient collected data. However, the least important internal problems are the bank workers' and administrators' acceptability of Basel II (Table 8.5).

Table 8.5
The Internal Problems of Banks

	Frequency	Percent
Bank workers' and administrators' acceptability of Basel II	1	12,5
Pricing without regarding the risk concept	2	25,0
Inadequacy of information technology	3	37,5
Inefficiency of collected data	2	25,0
Total	8	100

The external problems

The external problems of Turkish banks, generally experienced, dealing with credit risk management are unregistered economic activity, problems resulting from legislation and economic instability. Unregistered economic activity as an external problems have the priority for sample banks. Half of the sample banks assume that the most important external problem, economic instability and legislation followed it, respectively (Table 8.6).

Table 8.6
The External Problems of Banks

	Frequency	Percent
Unregistered economic activity	4	50,0
Legislation	1	12,5
Economic instability	2	37,5
Total	8	100

The result of case study of banks revealed that approximately 63% of sample banks prefer SA as a credit risk approach. F-IRB approaches follow it by 25% while that of SSA was 12,5% (Table 8.7). BRSA gives the information that most banks in Turkey are expected to use the Standardized Approach, while some have declared their intention to adopt the Internal Ratings-Based Approaches in time. BRSA (2009) reported that 54,5% of Turkish banks preferred SA as a credit risk approach an SSA, F-IRB& A-IRB, SSA&SA and F-IRB followed it, respectively.

Table 8.7
Credit Risk Approaches- Beginning of Basel II Application

	Survey	BRSA Report
SSA	12,5	17,8
SA	62,5	54,5
F-IRB	25,0	-
A-IRB	-	11,5
SSA&SA	-	9,2
SA&F-IRB	-	7,1

87,5% of sample banks have every kind of essential technical knowledge about the criteria the method it is planning to follow for credit risk.

Table 8.8
Period of Expect to Follow Standard Approaches

	Frequency	Percent	Valid Percent
2009-11	2	25,0	40,0
2012-14	1	12,5	20,0
2015-17	1	12,5	20,0
2018-20	1	12,5	20,0
N/A	3	37,5	
Total	8	100	100

BRSA stated that the banks forming approximately 4% of the sector's active growth aims to use advanced methods. The enormousness of the banks that are going to change to advance methods until 2013 forms 68% of the sector's growth. The share of the banks that are not going to change to advance methods is on the base of 3%. The result of case study, 72,5 % of banks have any plan to follow advance methods if it is planning to follow standard approaches.

In the research area, many banks prefer to use hybrid models for companies and SME. Both judgmental models and statistic model have the share by 14% (Figure 8.1).

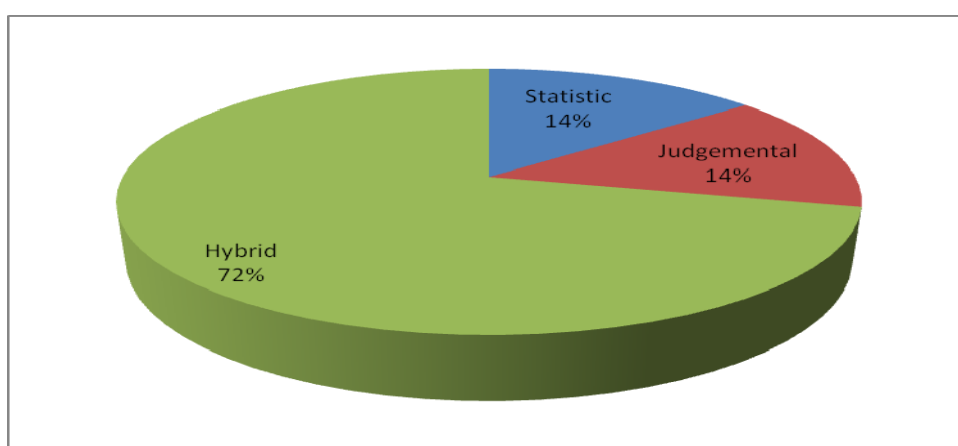


Figure 8.1 Characteristic of Rating Models

Market risk

According to the progress report, all banks should follow the Standard approach against market risk. However, the share of banks compatible with internal rating methods and the subject's related evaluation were 82% and 81%, respectively. The share of banks compatible with the subjects related against specific risk on a large scale was approximately 45%. Based on the result of research, 75 % of banks use internal models for the evaluation of market risks in their bank. In general, sample banks use internal models for the purpose of making financial decisions and identifying limits. Banks generally follow both historical simulation and variation-covariation methods together, while 25% of the banks used only historical simulation methods. Interestingly, 25% of sample banks do not use any methods (Table 8.10).

The majority of Turkish banks have not got any difficult when accounting the market risk via internal models. 80 % of Turkish banks indicated that they plan to consider the use of internal models for legal capital accounting. The result of our case study showed that 62,5% of sample banks plan to use internal model for legal capital accountings till 2013. However 37,5% of the sample banks do not want to use it. This rate is about 40% in the survey that BRSA did in the entire sector. The results of the studies *after 2012* are as BRSA 27% and the study 25%.

Table 8.9
Internal Models Based on Methods

	Frequency	Percent
Historical Simulation	2	25,0
Variation-Covariation	1	12,5
All	3	37,5
Not Used	2	25,0
Total	8	100

Glancing of the Turkish banking sector it was fixed that 86% of the banks analyzed the market risk analyze when making decision. Results of risk analysis used for various purposes. 77% of the Turkish bank analyzed the market risk for limit assignment, while the rest used for designing medium and long strategies and making investment decisions.

Operational Risk

Operational risks are the most serious obstacles for an effective risk management system. The Basel II Accord required that operational risk to be addressed and capital funds to be allocated for it. However, Turkish banks are not ready to fulfill this important provision, yet. All banks adopt the definition of operational risk in their banks. 37,5% of the sample banks suggested that the operational risks, its occurrence reasons, and amount of lost that processes, which are grouped on the basis of work units and business branches and on the basis of events are identified, and they are updated regularly associated with market conditions. However 62,5% sample of banks still continue preparation studies.

The case study revealed that half of sample banks use basic index approach (BIA) while the rest prefer SA and AMA (Table 8.10). This finding confirmed the

results of BRSA (2009). BRSA stated that all banks in the banking sector used BIA for analyzing operational risk since May 2009. BRSA stated that all banks accommodate to BIA that is active now, but the share of the banks that accommodate between 75% and 100% is about 25%. In respect of advance evaluating approaches, 22% of the banks specify that their accommodation level is over 50%.

Table 8.10
Operational Risk Measurement Approaches

	Frequency	Percent
BIA	4	50,0
SA	2	25,0
AMA	2	25,0
Total	8	100

Research results showed that 87,5% of sample banks have all kind of essential technical knowledge about the criteria and they planned to use it for operational risk. Most sample banks start to use advance methods for legal capital accounting of operational after 2012. In addition, 70% of sample banks predict to change advance methods in a five-year period.

BRSA (2009) stated that 60% of the bank sector regards their data system and information substructure as enough on a large scale but only 1% of them regard the situation as complete. The majority of the banks that regard their substructure partly enough (38%) do some studies aimed at making up for the deficiencies.

Table 8.11
Period of Expect to Follow Advance Approaches

	Frequency	Percent	Valid Percent
2009-11	1	12,5	20,0
2012-14	2	25,0	40,0
2015-17	1	12,5	20,0
2018-20	1	12,5	20,0
N/A	3	37,5	
Total	8	100	100

BRSA (2009) stated that half of the bank sector considering its active growth has classified based on the sectors (half in our study, too) and they can get essential index data from each sector. The advanced evaluation methods that are going to be mostly used for operational risk evaluation and legal capital assignment are LDA, scenario analyzes and hybrid approaches.

Table 8.12
Operational Risk Evaluation Methods

	Frequency	Percent	Valid Percent
LDA	1	12,5	25,0
LDA-SCA	3	37,5	75,0
N/A	4	50	
Total	8	100	100

According to QIS5, BIS concluded that the overall impact on bank capital would be a reduction of around 7% for banks pursuing the Advance approach, while

other approaches results in small reductions or even small increases. Our survey results suggests a slightly larger expected no changing with 43 % of respondents.

Table 8.13
The Impact of Basel II on Bank's Capital Level

	Frequency	Percent	Valid Percent
%20 increase	1	12,5	14,3
No Change	3	37,5	42,9
Less than %10 reduction	2	25,0	28,6
%10-%20 reduction	1	12,5	14,3
No Opinion	1	12,5	-
Total	8	100	100

Chi-square analysis showed that while the banks, which will have completed the transition of internal rating approach by 2012, think that Basel II will decrease the capital levels, the banks to change to Basel II in 2014 and later and the banks do not think changing to Basel II have specified that the capital levels will not change ($p \geq 0,05$).

8.1.2 Comparison of Big Commercial Banks and Small Size/ Investment Banks

The difference among some variables between big commercial banks and small size/ investment banks has been investigated. Based on the results of the Mann-Whitney U test, there is no difference in the following variables ($p \geq 0,05$):

- Credit ratings system / status of using scoring models
- Status of PD, LGD and EAD parameters calculation

- The level of adaptation to Basel II
- The most important external problems of the banks at the credit risk management
- The operational risks, its occurrence reasons, amount of loss and identification status on the basis of the cases the processes, which are grouped on the basis of work units and business branches, carry
- The existence of adoption studies of risk notion for all the personnel
- Appointment status of personnel, units and/or committee to administer the process of adaption to Basel II of the banks
- Determination of which approach will primarily be available through calculation methods of statutory capital obligation for credit risk
- Determination status of the initial method for calculating statutory capital obligations for credit risk
- Determination of methods on which internal models based for market risk metrics
- Determination of which advance measurement method will be used for allocation of operational risk measurement and statutory capital allocation
- The prediction of Basel II effect on capital levels

However, according to Mann-Whitney U tests applied to eight variables, significant differences are found between Big commercial banks and small sizes / investment banks ($p \leq 0,05$):

1. Small sizes / investment banks did not get counseling service from the specialists; but, big commercial banks gave more importance to this issue, and the half of them received the training.

2. The most important internal problem experienced in credit risk management is regarded as the inadequacy of information technology for small sizes / investment banks while pricing attention to risk for big commercial banks ($p \leq 0.01$).

3. All of the big commercial banks assigned strategies and policies intended for the process of adaptation to Basel II; half of the small sizes / investment banks set these strategies and policies but the other half is currently in planning stage.

4. There was difference about the most important problem banks experienced in the process of implementing Basel II; PD, LGD and EAD-related data for big commercial banks and unavailability of qualified technical personnel for half of the small sizes / investment banks.

5. Big commercial banks have a plan on changing standard approaches to the advanced systems up to 2012, while the small sizes / investment banks think that about 2015 and/or later and a part of them did not declare an exact date.

6. While all the big commercial banks ratings prefer hybrid full-featured profile as the rating model, a clear preference has not been seen in small sizes / investment banks but an equal distribution has been observed.

7. The status of using internal model for measurement of market risks of banks varied. All the big commercial banks use this model but only half of the small sizes / investment banks use this model.

8. As the initial method, big commercial banks are ahead of small sizes / investment banks in using legal capital calculating for operational risk in the first times of Basel II implementation. While big commercial banks are planning to start with the AMA, small sizes / investment banks specify that they are planning to start with the BIA.

8.2 THE CASE OF SMEs in SAMSUN

8.2.1 The Research Area

Samsun is the biggest metropolis city of East Black Sea Region. Its commercial and industrial lives are very dynamic due to its population density. Especially, after the year 1980, due to increase the level of employment which had declined in the city; small industrial sites were established in both the city and its counties, and employment tended towards small organizations that have an intensive amount of capital. In addition to these, industrial zones are about to make significant contributions. The most important productions which are being produced by the manufacturing industry in Samsun and its neighborhood are cement, fertilizer, copper, artificial jute, car spare part, pumps in different sizes, furnishings and textile products, iron, confection, drugs and medical materials. In addition to big and medium size firms, in small size firms, furnaces, plastic PVC plants, agricultural machines and materials, copper products, reinforcing irons, plastic bags, different types of confectionery, jam, and industrial type kitchen wares are being produced in a labor intensive way.

There are 16 small industrial estates in the region, 5 in the city center and eleven in suburbs. The total number of business offices in the city is 5.279. In these industrial estates, there are about 7.000 small-scale businesses, 3.620 of which are located within the metropolis boundaries, in which 12.575 persons are employed. There are 404 cooperatives in the city. The Chamber of Commerce has 6.145 registered members¹¹⁶.

The currently constructed factories are envisaged for the manufacture of textile products, canvas, automotive side industry, fiberglass cabins, and playground for children, cast-iron sphere, frozen food and marine products. These factories are estimated in feasibility reports to employ 734 people when opened for operation. The firm currently in project design will be involved in cast-iron sphere casting. When this facility is completed, it is estimated to employ 60 people. When all factories in the

¹¹⁶ Republic of Turkey, Governship of Samsun, Economic Structure, http://english.samsun.gov.tr/ey_sanayi.asp#2 (1 June 2009).

region are completed and opened for business, the employment is estimated to reach 4.460 people.

SMEs in Samsun Industrial Zone were constituted the research population. Because, SMEs that can ideally present the Industrial being of Samsun city are here and besides the headquarters of the leading companies are settled in this Zone.

8.2.2 Data

The research data was collected from randomly selected 28 SMEs, out of 70 SMEs in Samsun Industrial Zone by using questionnaire during the period of 01.05.2009—01.06.2009.

The sample size was determined by the stratified random sampling method. The number of employee in SME considered as sampling criteria. The survey was targeted for 95% accuracy with a 5% margin of error. Optimum sample size was 28.

At the end of the conducted survey, the companies have been categorized according to the number of their employees because of the thought that they will not reflect the truth, for they did not want to share information of revenue. Based on the results of sampling two firms are classified as micro business, 13 firms are classified small and 13 firms are classified medium.

After outlining, prevailing situation of sample firms using descriptive statistics, advanced statistical tests were used to explore relationship among variables. Since research data was ordinal and nominal, Friedman One Way Variance Analysis, Wilcoxon test, Kruskal Wallis, Mann Whitney U test and Chi-Square test were performed. SPSS statistical package 12.0 for Windows was used for statistical analyzes.

8.2.3 Results and Discussion

Of all the firms participating in the survey, it was owner of company (39.3%) or shareholders (32%) that were interviewed with most (Figure 8.2). These are who know the business circles very well and that we can trust what they say. In order to reflect the whole industry, 28 firms from 11 different fields were surveyed (Figure 8.3).

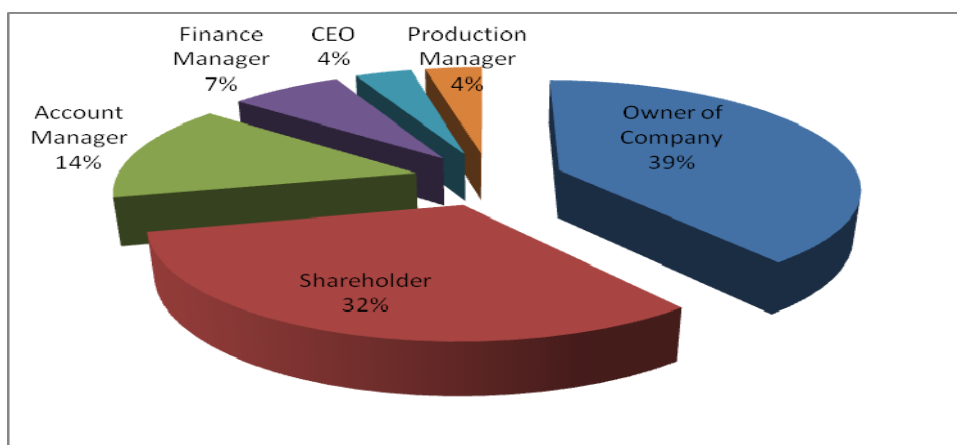


Figure 8.2 The Distribution of the Respondents Associated with Responsibilities (%)

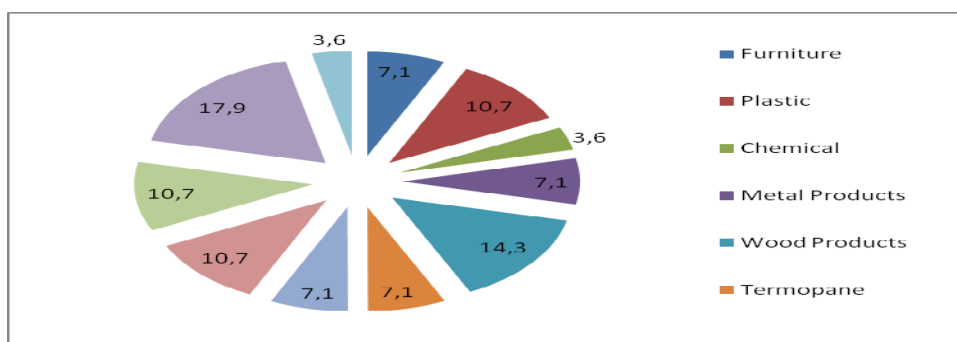


Figure 8.3 Distribution of SME Associated with Their Field, %

Businesses are managed either by owners of the company within the family (68%) or by one of the shareholders. The businesses that are managed by a shareholder are incorporated company in general. In the light of the founder profile, we can clearly see that half of those participating in the survey establish their own businesses.

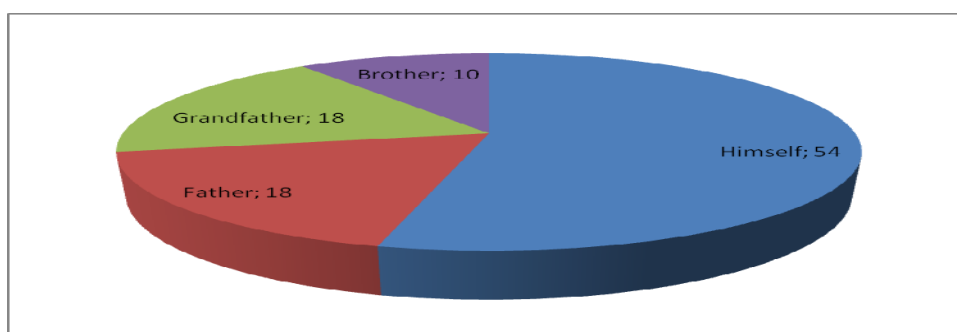


Figure 8.4 Distribution of Business Founder, %

Table 8.14
Distribution of Business Founder

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Grandfather	-	-	2	15,4	3	23,1	5	18
Father	-	-	3	23,1	2	15,4	5	18
Brother	-	-	2	15,4	1	7,7	3	10
Himself	2	100	6	46,2	7	53,8	15	54
Total	2	100	13	100	13	100	28	100

The businesses are primarily limited companies (54%) where family business is the identity (Table 8.15).

Table 8.15
Statuses of Business

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Individual	1	50	4	30,8	-	-	5	18
Limited	1	50	6	46,2	8	61,5	15	53
Incorporated	-	-	3	23,1	4	30,8	7	25
Collective	-	-	-	-	1	7,7	1	4
Total	2	100	13	100	13	100	28	100

The relationship between foundation status and listed variables has been analyzed. Chi-square analysis showed that there is statistically significant difference among companies. In small companies, it was realized that there is statistically

difference between the status and necessity of external audit ($p < 0,05$). In medium companies, it is identified that there is statistically difference between the status and ensuring administrator ($p < 0,01$), preparation for Basel II and the effect of assurances on getting credit ($p < 0,05$).

Education levels of the managers of enterprises are as follows: half of them are university graduates, 40% are the high school and 10% are primary education graduates

Table 8.16
Manager Level of Education

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Primary School	1	50	2	15,4	-	-	3	11
High School	-	-	5	38,5	6	46,2	11	39
University	1	50	6	46,2	7	53,8	14	50
Total	2	100	13	100	13	100	28	100

Only 18% of the enterprises participating in the survey work with a professional manager. On the other hand, from family and from the close environment a lot of them work with educated people. Briefly, the enterprises want to work mostly with well educated managers within the family environment (Table 8.17).

Board to provide eye-catching in the allocation of family matters to be SMEs, which are desirable rate of 61% is a value to be considered as important. This creates a more striking figure of 11% will result from the family must be sure that the conviction was announced. Therefore, instead of level of education coming from the family is very important for businesses. (Table 8.17).

Table 8.17
Receiving Criterion Manager

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Educated, in family	2	100	9	69,2	3	23,1	14	50
Profession manager	-	-	2	15,4	3	23,1	5	18
Absolutely, in family	-	-	1	7,7	2	15,4	3	11
Educated, environment	-	-	1	7,7	5	38,5	6	21
Total	2	100	13	100	13	100	28	100

The foundation capital of all managements in the survey is consisted of capital stock. Small enterprises use multiple sources of finance, both internal and external sources. Surveys demonstrate that owner's equity is predominant and most of the firms rely solely on the equity and internal funds. Whereas, commercial bank loans are rarely used for both investment purposes and as credits for short term financing of working capital, data on SMEs in Samsun shows that financing needs for working capital exists. Micro businesses, while addressing provincial and regional markets; smalls and mediums are often seen nation and international markets.

In general, difficulties are experienced in all groups from the source. This method of crossing the straits at the bottom of the distribution is given in the Table 8.18. A small percentage of enterprises prefer to receive credit from the bank that was seen. The reason is that the banks avoid providing business loans on last crisis.

Table 8.18
Sources of Supply Shortage over Methods

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Increase Shareholders Equity	-	-	3	23,1	2	15,4	5	18
Credit to Banks	-	-	3	23,1	1	7,7	4	14
Loans From Relatives	1	50	3	23,1	1	7,7	5	18
Loans From Partners	-	-	-	-	2	15,4	2	7
To Moratory	1	50	-	-	2	15,4	3	11
Leasing	-	-	-	-	1	7,7	1	4
No have problem	-	-	4	30,8	4	30,8	8	28
Total	2	100	13	100	13	100	28	100

Besides this fact, the vast majority of the companies have used as a source of credit before the financial crisis. According to the survey, types of credit used are also shown on Table 8.19.

Another finding showed that as the size of the enterprises increases, so does the number of the banks which SMEs are in relation with and the amount of the loan taken at a time and the total amount of the loan received within the year.

Table 8.19
Types of Credit

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Commercial Banks	2	100	7	53,8	9	69,2	18	64
Participation Banks	-	-	1	7,7	-	-	1	4
Incentive Credits	-	-	2	15,4	4	30,8	6	21
Not use credit	-	-	3	23,1	-	-	3	11
Total	2	100	13	100	13	100	28	100

Half of SMEs are having trouble while borrowing from the banks. Desired security is the main trouble for SMEs.

Table 8.20
In the Case of Inconvenience of Bank Debt

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	2	100	7	53,8	5	38,5	14	50
No	-	-	6	46,2	8	62,5	14	50
Total	2	100	13	100	13	100	28	100

The commonly used procedure, “cheque/bonds collection” in small companies, and “credit transaction” in the medium companies are taken (Table 8.22).

Table 8.21
Complaints from Banks

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Banks of the attitudes and behaviors	1	50	-	-	-	-	1	7
Excessive bureaucratic procedures	1	50	-	-	-	-	1	7
Banks are willing to guarantee	-	-	4	57	4	80	8	57
Credit interest rates	-	-	3	43	1	20	4	29
Total	2	100	7	100	5	100	14	100

Table 8.22
The Process of SMEs Most Commonly Used

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Money Transfer	1	50	4	30,8	-	-	5	18
Cheque Bonds Collection	1	50	9	69,2	6	46,2	16	57
Credit Transactions	-	-	-	-	7	53,8	7	25
Total	2	100	13	100	13	100	28	100

Basel II and Samsun SMEs

Chi-square analysis showed that there exist statistically significant difference between the status of the companies' and how they aware of Basel II. That includes Banks' loan trouble, the status of the sectors affected by Basel II, the idea of getting training service for Basel II, the effect of Basel II and rating on the costs of credit and the effects of the assurances on costs of credit and getting credit ($p \leq 0,05$).

Chi-square analysis showed that the share of being aware about Basel II and its criteria among exporter SMEs is ahead of one's which does not export ($p \leq 0,01$) . The former is also ahead of the latter with regard to getting beforehand counseling and training service about Basel II ($p \leq 0,05$). In variables under mentioned, no difference was found between the former and the latter ($p \leq 0,05$):

- Preparatory work for Basel II
- Idea on the sector's being affected by Basel II
- Potential impact of Basel II and Rating on costs of credit
- Impact of guarantees on getting credits and their costs
- Need for external audits for financial statements

Chi-square analysis showed that there is statistically significant difference among companies. The possibility of companies' market varieties differed with regard to Basel II was investigated. In under mentioned variables, it was concluded that the variables did not differ considering the market ($p \leq 0,05$):

- The awareness of Basel II
- The knowledge of Basel II criteria
- Preparations for Basel II
- Training services
- Impact of Basel II and rating on costs of credit
- Impact of guarantees on getting credits and their costs
- Experiencing guarantee problems after Basel II implementations
- Need for external audits for financial statements

As it can be seen on Table 8.23, the awareness status of medium companies is about 77%. This rate decreases with respect to the knowledge of criteria and preparation to Basel II. Having looked at micro managements, we realize that they do not have any idea about Basel II and so they do not have any preparation. While small companies are partly aware, they do not have enough criteria and they could not be effective in the process of preparation. It can be concluded that the essential care has not been experienced on Basel II when all companies taken into account in the survey. Just one fourth of the banks in the survey have specified that they have preparations aimed at strengthening the capital being.

Table 8.23
Awareness of Basel II

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	6	46,2	10	76,9	16	57
No	2	100	7	53,8	3	23,1	12	43
Total	2	100	13	100	13	100	28	100

Table 8.24
The Knowledge of Basel II Criteria

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	3	23,1	5	38,5	8	29
No	2	100	10	76,9	8	61,5	20	71
Total	2	100	13	100	13	100	28	100

Table 8.25
Preparations to Basel II

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
To strengthen the capital structure	-	-	2	15,4	5	38,5	7	25
No preparation	2	100	11	84,6	8	61,5	21	75
Total	2	100	13	100	13	100	28	100

There are 21 companies, which do not have any preparation. When the question “Why not?” was asked, 76% of respondents replied that the insufficiency has to be identified about Basel II.

Table 8.26
Basel II Preparation for Cause

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
The lack of instruction about Basel II	2	100	7	64	7	87,5	16	76
New situation	-	-	3	27	1	12,5	4	19
Information need not be	-	-	1	9	-	-	1	5
Total	2	100	11	100	8	100	21	100

Banks, which specified that they are aware of Basel II criteria, have been asked that if they have any idea about the effect of Basel II on the sector and they proved that

they absolutely know nothing about it. Just one fourth responded that the sector is affected (Table 8.27).

Table 8.27
The Impact of Basel II on the Sector

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Positive	-	-	4	15,4	6	76,9	10	36
Negative	-	-	2	30,8	5	7,7	7	25
N/A	2	100	7	53,8	2	15,4	11	39
Total	2	100	13	100	13	100	28	100

With regard to getting counseling service or training about Basel II, medium companies have benefited from this service more than other groups. In general, one fourth of the companies have benefited from such service (Table 8.28).

Table 8.28
Getting Counseling Service or Training about Basel II

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	2	15,4	5	38,5	7	25
No	2	100	11	53,8	8	62,5	21	75
Total	2	100	13	100	13	100	28	100

According to the answers to our questions about the effect of Basel II and rating on credit costs, companies regard both situations as being the same and majority

of them are not aware of the subject. It has been also realized that medium companies, which had training service, specified that costs going to rise.

The questions respecting costs and credit taking of assurances is regarded as the same by the banks and a situation like the previous table has occurred: SMEs are not aware of the subject.

Table 8.29
The Effect of Basel II and Rating on Credit Cost

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
No information	2	100	9	69,2	8	61,5	19	68
Increase	-	-	2	15,4	5	38,5	7	25
No Change	-	-	2	15,4	-	-	2	7
Decrease	-	-	-	-	-	-	-	-
Total	2	100	13	100	13	100	28	100

Table 8.30
The Impact of the Credit Guarantee Finance and Procurement

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
No information	2	100	8	61,5	8	61,5	18	64
Increase	-	-	3	23,1	5	38,5	8	29
No Change	-	-	2	15,4	-	-	2	7
Decrease	-	-	-	-	-	-	-	-
Total	2	100	13	100	13	100	28	100

Friedman One Way Variance Analysis showed that companies to order the assurances for bank credits; real estate – mortgage for micro and small companies; customer cheque & bonds for medium companies. It was found that the ranking among factors such as cash deposit, customer cheque & bonds, mutual funds etc. are statistically significant ($p \leq 0,01$). According to Basel II, customer cheque & bonds is not a prestigious assurance; after Basel II is totally performed, medium companies is expected to have difficulties. The assurance that is widely used in our country is predicted to make the SMEs have difficulties with the usage of Basel II (Table 8.31).

Table 8.31
Ranking the Importance of Guarantee for Bank Loans

	Micro	Small	Medium
Cash Deposit	3,50	5,77	2,00
Customer Cheque & Bonds	3,00	2,38	1,54
Mutual Fund	7,25	6,04	3,88
Real Estate Mortgage	1,00	2,04	4,35
Personal Surety	4,00	3,77	4,38
Letter of Guarantee	3,50	5,08	6,38
Credit Guarantee Fund	7,75	7,08	7,15
Vehicle Mortgage	6,00	3,85	6,31

When we asked companies whether they think they will have any difficulty from the aspect of the assurance after Basel II, half of them told that they expect to have difficulty; and the majority of the other half told that they are not sure (Table 8.32).

Table 8.32**Guarantee Problem after Basel II**

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	4	30,8	10	76,9	14	50
No	-	-	1	7,7	1	7,7	2	7
Unstable	2	100	8	61,5	2	15,4	12	43
Total	2	100	13	100	13	100	28	100

Concerning the external supervision, that is an important subject for Basel II, we asked about the necessity of being subject to an external supervision of SMEs' financial tables and a striking result cropped up; 71% of SMEs ignores this supervision and the companies prefer hiding their financial tables (Table 8.33). A “partly” answer was given to another question, which is parallel to the situation; “Are all your activities registered?” Just 18% of them specified that their activities be registered. According to the literature, two third of the activities in our country is unregistered.

Table 8.33**External Audit Requirements**

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	1	50	4	30,8	3	23,1	8	29
No	1	50	9	69,2	10	76,9	20	71
Total	2	100	13	100	13	100	28	100

Table 8.34
Registration Status of Activities

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Yes	-	-	4	30,8	1	7,7	5	18
No	-	-	3	23,1	-	-	3	11
Partially	2	100	6	46,2	12	92,3	20	71
Total	2	100	13	100	13	100	28	100

Friedman One Way Variance Analysis showed that the order of the necessity importance of the supervision of companies' financial tables ranged between groups; getting credit for Micro; control risk for small; statutory obligation for medium on Table 8.35 ($p \leq 0,05$).

Table 8.35
Mean Ranking the Importance of Audit of Financial Statements Requirements

	Micro	Small	Medium
Statutory obligation	2,00	2,69	1,36
For getting credit	1,50	2,69	2,68
Control risks	4,00	2,19	3,00
To inform shareholder	4,50	3,94	3,86
Reduction tax	3,00	3,50	4,09

None of the companies, which take part in the survey, has gotten a risk rating mark. In credit accommodation survey for loan and claims, 68% of companies were observed that they have accommodation and it has been understood that this rate increased together with the increasing of personnel quantity. This situation has occurred at a better rate concerning the amount accommodation. An approximate result has been gained in currency accommodation. It has been observed that companies try to care about credit, amount and currency accommodation for their loans and claims.

Table 8.36

Maturity of Compliance

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	8	61,5	11	84,6	19	68
No	2	100	5	38,5	2	15,4	9	32
Total	2	100	13	100	13	100	28	100

Table 8.37

Amount Accommodation

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	1	50	9	69,2	12	92,3	22	79
No	1	50	4	30,8	1	7,7	6	21
Total	2	100	13	100	13	100	28	100

Table 8.38**Currency Accommodation**

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	10	76,9	11	84,6	21	75
No	2	100	3	23,1	2	15,4	7	25
Total	2	100	13	100	13	100	28	100

SMEs mostly are not aware of derivative products and they do not use them. The most important risk companies (import & export) are exposed is rate risk; they specified that they generally are affected in the face of markup of raw materials. As we stated before, the reason of low interest risk is that SMEs have recently been exposed to interest risk because they did not get a suitable credit from the banks together with the crisis (Table 8.39). SMEs could partly take precautions for these risks (Table 8.40). Large amounts of the companies do not know the means of risk management.

Table 8.39
The Distribution of Risk

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Exchange Rate Risk	1	50	5	38,5	2	15,4	8	29
Operational Risk	-	-	1	7,7	5	38,5	6	21
Interest Risk	-	-			1	7,7	1	4
The product is not sold	-	-	4	30,8	1	7,7	5	17
Raw materials prices to increase	1	50	3	23,1	4	30,8	8	29
Total	2	100	13	100	13	100	28	100

Table 8.40
Taking Risk Precautions

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	4	30,8	11	84,6	15	54
No	2	100	9	69,2	2	15,4	13	46
Total	2	100	13	100	13	100	28	100

Table 8.41
Identification of Risk Tools

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	1	7,7	3	23,1	4	14
No	2	100	12	92,3	10	76,9	24	86
Total	2	100	13	100	13	100	28	100

Although SMEs have responded to our question of ‘Reason not is doing risk management’ as they do not know the means of risk management or they do not have professional human resources. Nevertheless, Friedman One Way Variance Analysis showed that the human resources take the last place in many companies when they were asked in which fields they have difficulty in Table 8.42-43 ($p \leq 0,01$).

Table 8.42

Reason Not is doing Risk Management

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Risk management tools do not recognize	-	-	6	46,2	6	46,2	12	43
Don't need	-	-	4	30,8	-	-	4	14
Don't have Professional human resources	2	100	3	23,1	7	53,8	12	43
Total	2	100	13	100	13	100	28	100

Table 8.43

Mean Ranking Important Areas of Activity in Distress

	Micro	Small	Medium
Finance	1,50	2,45	2,38
Marketing	1,50	1,82	1,08
Production	3,50	3,73	2,62
R&D	5,00	4,55	4,92
Management	4,50	4,64	5,00
HRM	5,00	3,82	5,00

While companies particularly have trouble in the field of finance, the rate of one's, which do not have a separate finance department in their constitution, is 57%.

This rate is low for medium companies but it is higher for small ones. This is remarkable because it can show that companies care about this subject (Table 8.44).

Table 8.44

Presence of Finance Department

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	-	-	2	15,4	10	76,9	12	43
No	2	100	11	84,6	3	23,1	16	57
Total	2	100	13	100	13	100	28	100

Companies specified that they often have bankroll difficulty in their activities (%93); as the most important effect for this, the difficulties, which are experienced in collection of receivables, are shown on Table 8.45.

Table 8.45

Cause of Cash Shortage

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Problems in collecting receivables	1	50	10	90,9	12	92,3	23	88
Not Effective financial planning	1	50	1	9,1	1	7,7	3	12
Total	2	100	11	100	13	100	26	100

Institutionalization

Institutionalization is a concept that will come into question with Basel II. We tried to identify institutionalization perception of companies in the last part of our survey. We asked, “How you regard institutionalization”; we got the response that organizations carry on their permanence with institutionalization but just one of them responded, as it is not a vital factor (Table 8.46).

Table 8.46
Perception of Institutionalization

	Micro		Small		Medium		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Organizations carry on their permanence with institutionalization	1	50	12	92,3	13	100	26	92
Business layout infects	-	-	1	7,7	-	-	1	4
It is not a vital factor	1	50	-	-	-	-	1	4
Total	2	100	13	100	13	100	28	100

Table 8.47
Institutionalization Studies

	Micro		Small		Medium		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	1	50	6	46,2	10	77	17	61
No	1	50	7	53,8	3	23	11	39
Total	2	100	13	100	13	100	28	100

8.2.4 Comparison of Small and Medium Companies

The differences between some variables in medium and small size businesses were investigated. The results of Mann-Whitney U test showed that no difference is observed in under mentioned variables ($p \geq 0,05$):

- Experiencing difficulty in getting sources
- The most consulted way of getting over difficulties in getting sources
- The type of credit in use
- Number of banks in credit relationships
- .The awareness status of Basel II
- Decision of the necessity of being subject to external audits for financial statements for businesses
- Having difficulty in the process of borrowing from banks and the most experienced difficulty
- The meaning of corporate for businesses

However, according to Mann-Whitney U test applied to seven variables, significant differences were found between medium and small size businesses.

1. Medium-size enterprises used credit more as a source of financing regarding small- size enterprises ($p \leq 0.05$).
2. Medium- size enterprises have more relevant information on Basel II criteria than small size business ($p \leq 0.01$).
3. Medium- size enterprises are ahead of small size enterprises with regard to getting beforehand counseling and training service about Basel II ($p \leq 0.01$).

4. Medium- size enterprises think that Basel II and rating will increase the costs of credit, whereas small enterprises said they have no idea about them ($p \leq 0.05$). This shows that medium- size enterprises have much more criterion knowledge.

5. Majority of medium- size enterprises specify that they will experience guarantee difficulties after Basel II; majority of small companies is hesitant and only 25% of them has specified that they will have guarantee difficulty ($p \leq 0.05$). This shows us the Basel II perception of small size enterprises.

6. Activities of all medium- size enterprises are partly registered, whereas small size enterprises' responses are varied; 23% of them specified that none of their activities are registered, 31% of them specified that all of their activities are registered and the remaining 46% of them specified that their activities are partly registered ($p \leq 0.01$).

7. Size of the business also varies in corporate studies. Medium- size enterprises are ahead of small enterprises with regard to the rate in studies ($p \leq 0.01$).

9. CONCLUSION

The Basel II framework mainly aims to encourage the banks to identify and to address the threats to their own survival. It covers wider range of risks, aligns regulatory capital with underlying risks better, integrates capital requirement with a larger framework and help supervisors to evaluate risks and maintain market discipline. Since it provides options for banks, it appears to encourage improvements in the risk management processes. Policy makers have already realized the importance of this new accord, and presently it is in different stages of implementation across the globe. However, the implementation in itself demands efforts that are even more concentrated and capacity building with both regulators and concerned stakeholders.

In the survey studies; accommodation and perception level of two sides, which are going to be affected from Basel II and besides the problems that are experienced in credit risk management of the banks, are identified. Since the foreign banks that have branches in Turkey have already prepared, they are at an advance level.

The fact that big commercial banks in the world evaluate credit risk with credit portfolio models and Basel Committee encourages internal rating models makes avoiding from Basel II applications impossible for Turkish banks' activities and rivalry in the international market. Whereat, the Turkish banking sector has to carry out Basel II criteria to get an opportunity of rivalry in international market and for accommodation to EU.

According to the results of this study, we can say that it is useful for commercial banks to care about the following subjects respecting credit risk management. These are;

- Commercial banks are at a different level related to risk management, data sets and information technologies. They need to strengthen their substructures and invest on the subject that is listed above with the purpose of accommodation to Basel II.

- Supervision and regulation mechanism's effectiveness, stability and independence should be ensured that are being tried to be created in Turkish banking sector.
- In the world, some studies and preparations have been going on for several years regarding Basel II. In general, it is seen that European banks are more on standby compared to USA and Asia banks. All banks in EU will be responsible for carrying out Basel II criteria that will be integrated with EU regulations and laid out by EC. Because of this, Turkish banking sector should also handle preparation process to Basel II within accommodation to EU norms.
- When the banks in Turkey carried out Standard approach 100% risk weight is performed, whereas, since banks using internal rating approaches will be performed lower risk weight, they will have the whip hand of the banks using standard approach. In addition to this, Turkey will lose the chance of being a member of OECD, costs of credits will increase and the amount of credit will decrease in standard approach. Therefore, banks will remove the disadvantage by using advanced internal rating approach on the field of Basel II credit risk management and they will decrease the need for capital.
- Banks should increase their trainings about Basel II, create data sets for forming intra-bank risk models, analyze and manage them and technological investments should be completed.

As a result, as well as charging the banks new costs, Basel II will enable a more effective risk management, institutional management and will help the banks to act more reliably and effectively in international markets and ensure a new risk evaluation standard sensitive to the risks that banking activities cause and will help make these evaluated risks related to economic capital of bank.

Some commentators believe that Basel II has overreached itself and that it might have been better for Basel II to be less ambitious and recognize the inevitable fact that the process will lead to a Basel III and beyond.

Basel II requires international banks to use their own internal risk-assessment models (approved by the Basel Committee) to calculate their own capital adequacy ratio. Yet these models have been shown to fail spectacularly in the run-up to the current crisis, sanctioning too-cheap lending and too few capital reserves (that is, “under pricing risk”). Basel II also requires banks to use rating agencies’ ratings, which have also been shown to fail spectacularly. When Basel II is revised, Basel III should shrink the scope for self-regulation and should require governments to impose an additional tax on the banking system comparable to an insurance premium against future crises. The tax would be set countercyclical, higher in good times and lower in bad times. Basel III would spell out general principles and leave it to central banks to set the rate. Basel II capital accord have made significant efforts to measure regulatory capital needs "through the cycle" to mitigate procyclicality¹¹⁷.

¹¹⁷ Ben S. Bernanke, “Reducing Systemic Risk”, **Annual Economic Symposium**. Jackson Hole, Wyoming: The Federal Reserve Bank of Kansas City's. 22 August 2008.

APPENDIXES

Appendix 1: Minimum Requirements for IRB Approach

Dimensions	Key Minimum Requirements
Rating system design	• Separate borrower creditworthiness and transaction-specific dimensions • Meaningful distribution of exposures across grades • Plausible, consistent and detailed rating definitions, processes and criteria for assigning exposures to grades within a rating system • Written documentation of rating system design, default and loss definitions etc.
Risk rating system operations	• Independence of rating assignment process • All borrowers and facilities must be re-rated at least on an annual basis • Data collection and storage of key borrower and facility characteristics • Stress testing used in assessment of capital adequacy
Corporate governance and oversight	• All material aspects of rating and estimation processes to be approved by senior management and (all or a subset of) the Board of Directors • Independent credit risk control unit responsible for design/selection, implementation and performance of internal rating systems • Internal audit (or an equally independent function) to review the rating system and the credit function's operations at least annually
Use of internal ratings	• Internal ratings and default/loss estimates to play an essential role in credit approval, risk management, internal capital allocation and corporate governance • Rating system broadly in line with minimum requirements for at least three years prior to qualification
Risk quantification	• PD estimates must be long-run average of one-year default rates (except for retail exposures) and must be based on at least a five-year observation period • Internal estimates must reflect all relevant, material and available data, and must be grounded in historical experience and empirical evidence • Specific reference definition of default and indications of inability to pay • LGD and EAD estimation should incorporate cyclical variability when important for certain types of exposures, and must be based on a minimum data observation period of at least seven years (five for retail exposures) • The risk-mitigating effect of guarantees and single-name credit derivatives can be used to adjust own estimates of PD or LGD, but the adjusted risk weight cannot be lower than that of a comparable, direct exposure to the guarantor • Minimum requirements (legal certainty, effective nests of monitoring, control and work-out systems, compliance with internal policies and procedures) for eligible purchased receivables making use of the top-down treatment of default risk and/or IRB treatment of dilution risk
Validation of internal estimates	• Systems to periodically validate and document the accuracy and consistency of rating systems, processes and the estimation of all relevant risk components
Supervisory LGD and EAD estimates	• Minimum operational and risk management requirements for recognition of additional (to those eligible under the Standardized Approach) collateral types, including leases
Calculation of capital charges for equity exposures	• Quantitative and qualitative minimum requirements (capital charge and risk quantification, risk management process and controls, validation and documentation) to be eligible for the internal models market-based approach
Disclosure requirements	• Banks must meet the disclosure requirements of Pillar 3

Source: Basel Committee on Banking Supervision (June 2004)

Appendix 2: Standard and Poor's sovereign ratings methodology profile

Political risk

- Stability and legitimacy of political institutions;
- Popular participation in political processes;
- Orderliness of leadership successions;
- Transparency in economic policy decisions and objectives;
- Public security; and
- Geopolitical risk.

Income and economic structure

- Prosperity, diversity and degree to which economy is market-oriented;
- Income disparities;
- Effectiveness of financial sector in intermediating funds availability of credit;
- Competitiveness and profitability of non-financial private sector;
- Efficiency of public sector;
- Protectionism and other non-market influences; and
- Labour flexibility.

Economic growth prospects

- Size and composition of savings and investment; and
- Rate and pattern of economic growth.

Fiscal flexibility

- General government revenue, expenditure, and surplus/deficit trends;
- Revenue-raising flexibility and efficiency;
- Expenditure effectiveness and pressures;
- Timeliness, coverage and transparency in reporting; and
- Pension obligations.

General government burden

- General government gross and net (of assets) debt as a per cent of GDP;
- Share of revenue devoted to interest;
- Currency composition and maturity profile; and
- Depth and breadth of local capital markets.

Offshore and contingent liabilities

- Size and health of Non-Financial Public Sector Enterprises; and
- Robustness of financial sector.

Monetary flexibility

- Price behaviour in economic cycles;
- Money and credit expansion;
- Compatibility of exchange rate regime and monetary goals;
- Institutional factors such as central bank independence; and
- Range and efficiency of monetary goals.

External liquidity

- Impact of fiscal and monetary policies on external accounts;
- Structure of the current account;
- Composition of capital flows; and
- Reserve adequacy.

External debt burden

- Gross and net external debt, including deposits and structured debt;
- Maturity profile, currency composition, and sensitivity to interest rate changes;
- Access to concessional lending; and
- Debt service burden.

Source: Standard and Poor's, Sovereign Credit Ratings: A Primer, October 2006.

Appendix 3: Fundamental Banking Indicators

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Assets*	36,8	72,1	104,1	173,4	212,7	249,7	306,4	406,9	499,7	581,6	732,5
Loans*	13,1	19,9	31,8	38,0	49,0	66,2	99,3	156,4	219,0	285,6	367,4
Securities Portfolio*	5,2	12,4	12,0	17,5	86,1	106,8	123,7	143,0	158,9	164,7	194,0
Deposit	21,8	43,4	58,9	110,4	138,0	155,3	191,1	251,5	307,6	356,9	454,6
Equities*	3,3	4,2	7,2	18,3	25,7	35,5	46,0	54,7	59,5	75,8	86,4
No. of Banks	75	81	79	63	54	50	48	51	50	50	50
No. of Branches	7740	8104	8298	7386	6160	6029	6440	6240	6911	7700	8768
CAR (%)	13,00	8,24	9,29	20,78	25,34	30,93	28,24	23,73	21,91	18,94	17,98
Retail Loans / Loans	5,3	4,9	12,5	6,3	4,5	9,7	12,8	18,8	21,7	23,8	22,6
NPLs /Gross Loans	7,2	10,5	11,1	25,2	17,6	11,5	6,0	4,8	3,8	3,5	3,7
Loans /Deposit	60,3	45,9	54,1	34,4	35,5	42,6	52,0	62,2	71,2	80,0	80,8
Term Profit*	0,8	- 0,3	-3,1	-10,5	2,9	5,6	6,5	6,0	11,4	14,9	13,4
ROA ¹	2,1	-0,4	-3,0	-6,1	1,4	2,5	2,3	1,7	2,5	2,8	2,0
ROE	23,1	-7,2	-43,7	-57,5	11,2	18,1	15,8	12,1	21,0	24,8	18,3
FXNGP/Equities (%)²	N/A	N/A	N/A	N/A	N/A	1,1	-0,5	-0,6	1,0	0,3	-0,6
Tot. Ass.Share of First 10 B.	67,6	67,5	69,2	79,5	80,8	82,3	84,0	82,9	83,5	82,5	82,8
Share of Global Capital³	5,6	7,1	3,4	3,0	3,3	3,0	3,5	6,3	13,1	14,0	17,0
Funds from Abroad (\$ Bl.)	2,5	3,2	3,8	2,8	11,0	17,0	22,0	36,2	49,4	60,6	61,6

Source: BRSA

*Billion TRL. Participation banks are included as of 2005 period.

1 In ROA and ROE ratios, assets and equities are included in the calculation averagely.

2 Foreign development and investment banks before 2002 are not included. In ROA and ROE ratios, assets and equities are included in the calculation averagely.

3 The calculation in which 50% or more, bank's assets are controlled.

Appendix 4: Factories in Operation in Samsun Industrial Zone

Company Name	m2	Area of Operation	Capacity	Emp. (persons)
Kromteks Ltd. Şti.	6.980	Textile Products Industrial Kit.	90.000 No/Year	45
Güngörsün LTD.ŞTİ	6.248	Dried nuts&fruits	80.640 Kg/Year	10
Görgeç KOLL.ŞTİ	6.070	Rice, rice flour	10.000 Ton/Year	10
Ahenk Helva LTD.ŞTİ	13.949	Halva, sweets	8.000 Ton/Year	60
Sakız Dondurma Gıda CORP	6.400	Ice cream	440 Ton/Year	18
ÖzdemirKardeşler LTD. ŞTİ.	7.288	Class, tile, mosaic	180.000 M2/Year	34
Apaydın Metal CORP	31.404	Metal products	8.700 Takm/Year	100
Yeardız Kimya CORP	52.537	Industrial glue	50.000 Ton/Year	80
Mustafa Aksoy	5.533	Plastic shoes	1.000.000Pair/Year	10
Star Cam Karo	5.150	Class, tile, mosaic	360.000 M2/Year	90
Sufil Su Filtreleri LTD	6.867	Water filters	15.000 Lot/Year	40
Durapay MobilyaCORP	17.898	Portable furniture	15.000Lot/Y	40
Kadir Beytekin	5.022	Home textile		
KAR-KER LTD.ŞTİ.	22.435	Wood products	60.000 M2/Year	15
ENKAY ALÜMİNYUM	4.712	Teflon Pans	6.000 No/Year	25
Şentürkler İnş. Tic. LTD. ŞTİ.	4.644	Heating equipment	17.000 No/Year	50
AR ÇELİK RAF	5.991	Steel racks	670 Ton/Year	50
Erser Makina Industry	5.766	Threaded Wheel products	10 Ton/Year	9
Kutlu Kereste Ltd. Şti	10.318	Wood products	14.750 M3/Year	20
UZUNLAR LTD.ŞTİ.	4.666	CTP Products	3.000 Liter/Year	35
Ömer Aziz Yarmaz V. KOLL.	5.052	Wood Products	15.000 M2/Year	50
Bahadır Tıbbi Aletler LTD.	10.447	Medical equipment	75.000 No/Year	50
Canas Makina Ltd. Şti	10.312	Machine const.	600 Ton/Year	30
Saraçoğlu Gıda Ltd. Şti.	5.374	Dried nuts&fruits	81.000 Ton/Year	24
Fethi Yarmaz ve Oğul	5.551	Wood Products	12.000 M3/Year	120
Samsun Kazan San	6.254	Heating equipment	90.000.000Cal/Year	10
SAMSUN SEGMAN SANAYİ	6.142	Car sleeve, segment	15.000.000 No/Year	40
Domak Pompa CORP	11.830	Motopump, water motor	6.378 No/Year	43
Bülbüloğlu Ltd. Şti.	5.522	Medical gas production	3.000 Ton/Year	17
Filiz Şekerleme Gıda	10.545	Halva, jam	2.400 Ton/Year	60
F.K.K. Güney Oto CORP	31.784	Vulcolon Products	1.000 Ton/Year	62
Doğuş Okul Yayınları	5.326	School kits	1.500 Piece/Year	18
Anadolu Isı	5.610	Solar energy systems	1.500 No/Year	50
Dörtkol Termosifon	4.737	Water heaters, solar energy	3.000 No/Year	15
ÖZİÇLER PLASTİK	4.796	Plastic bags	1.430 Ton/Year	60
HALISA HALI SAN. LTD. ŞTİ.	4.783	Bed, mattress production	24.000 No/Year	40
GELİŞİM TEKSTİL	4.848	Sponge	100.000 M3/Year	15
ZEKİ KAHRAMAN	4.853	Hospital equipment	300 Ton/Year	5
Yearro Tekstil LTD.ŞTİ	5.381	Textile Products	30.000 No/Year	120
Elif Tekstil LTD. ŞTİ.	9.700	Ready-made clothing	90.000 No/Year	120
Samsun Yurt SAV.CORP	8.987	Weapon production	15.000 No/Year	100
PO-EL-SAN LTD. ŞTİ.	16.176	Polyethylene Connection Pie.	230.000 No/Year	65
Oto Binbirçeşit Koll. Şti.	7.332	Automotive side industry	250.000 No/Year	25
BORSAN LTD. ŞTİ.	9.502	Electrical equipment	1.000.000 No/Year	100
ALFA TEKNİK	4.973	Oil equipment	2.000 No/Year	50

Dü-El-San Ltd.Şti	5.069	Electromechanical parts	15.000 No/Year	35
SEMSAN POMPA	5.045	Submerged pump	250 Ton/Year	25
Kestek Isı Cihaz.Ltd.	5.063	Heating equipment	30.000 No/Year	50
Kurplas LTD. ŞTİ.	5.711	PVC Door, window profiles		
RESMAN CORP	21.290	Thermopane	100.000 M2/Year	55
Sultans Gıda	8.796	Turkish delight, sweets	1.200 Ton/Year	48
Yeşilyurt LTD.ŞTİ.	55.741	Iron melting carbamide	200.000 Ton/Year	250
Aygün Cerrahi Aletle	6.508	Medical equipment	35.000 No/YI	80
Pınar-Al Kimya LtdŞti	7.483	Car filter	30.000 Kg/Year	30
Güneyoğlu Elk.Mak. Ltd.	7.437	Electrical mach.	1.732 No/Year	23
Çakıroğlu Gıda San.	7.417	Feed production	40.000 Ton/Year	57
As Çelik Döküm LTD. ŞTİ.	17.490	Iron-cast, sphero	3.000 Ton/Year	266
Ekinpen PVC	6.325	PVC Support sheet	6.000 Ton/Year	29
Samsun Yem San CORP	15.368	Feed production	40.000 Ton/Year	57
SAMASA CORP	10.368	Wood Products	60.000 M2/Year	30
Camadan Paz.Koll. ŞTİ.	9.274	Industrial kit.	250 Ton/Year	15
YAŞAM SPOR - AK METAL CORP	9.336	Copper sheet	450 Ton/Year	50
Profal Alüminyum	7.815	Aluminum sheet	100 Ton/Year	20
Akın Rejenere Kauç.	21.456	Plastic shoes	900.000 Pair/Year	57
HAS TEL CORP	14.882	Galvanized netted wire	1.296.000 M2/Year	7
ALÜMİNYUM METAL	17.941	Copper sheet	2.000 Ton/Year	80
Samsun Yem San CORP	6.957	Corn semolina	72.000 Ton/Year	70
ALİ KOLBAKIR	6.894	Aluminum sheet	900 Ton/Year	45
YAŞAR KÜÇÜKASLAN	10.160	Copper and Alu. sheet	3.600 Ton/Year	40
TASARRUF MEVDUATI S.F.	15.458	----	----	----
BAKIR BORU CORP	12.525	Copper sheet	3.500 Ton/Year	50
EMEK LASTİK CORP	19.980	Plastic shoes	3.000.000 Pair/Year	80
Cam-Por Yapı Mal. CORP	37.778	Styrofoam	5.000 M3/Year	32
SAMPA OTOMOTİV	6.238	Auto repl. parts	5.000.000 No/Year	75
Samsun Mak San	83.472	Valve, pumps	9.622 Ton/Year	150
TOTAL	982.337			3.846

Source: Samsun Directorate of Industrial Zones (March 2007)

Appendix 5: Survey Form on Turkish Banks

I. BANKA BİLGİLERİ

Banka Adı :
Formu Yanıtlayan Yetkili :
İletişim Bilgileri :

II. SORULAR

1. **Riski Yönetimi Birimi Mevcut Mudur?**
A.Evet Var B.Hayır Yok C.Başka Birimin İçinde:
2. **Bankanızın Kredi Riski Yönetimi Biriminde Çalışan Personel Sayısı Nedir?**
A.1-5 B.6-10 C.11-15 D.16-20 E. 21 ve üzeri
3. **Bankanız Kredi Riski Yönetimi Konusunda Dışarıdan Hizmet Aldı Mı?**
A.Evet B. Hayır
4. **Bankanız Kredi Riski Yönetimi Konusunda Dışarıdan Hizmet Almayı Düşünüyor Mu?**
A.Evet B. Hayır
5. **Kredi Fonksiyonları, İzleme ve Onaylama Sürecinde Üst Yönetime Rapor Veriliyor Mu?**
A.Evet B. Hayır
6. **Kredi Derecelendirme Sistemi/Skorlama Modellerinin Kullanılıyor Mu?**
A.Evet B. Hayır
7. **Kredi Derecelendirme Sistemi/Skorlama Modellerine İlişkin Prosedürleriniz Yazılı Mıdır?**
A.Evet B. Hayır
8. **Bankaların Dışsal Model (Portföy Kredi Risk Ölçüm Modeli) Kullanıyor Mu?**
A.Evet B. Hayır
9. **Hangi Dışsal (Portföy) Modelini Kullanıyorsunuz?**
A.KMV Modeli B.CreditRisk C.CreditMetrics ve CreditRisk D. Diğer:
10. **Kredi Riski Yönetimine İlişkin Strateji ve Politikalar Yönetim Kurulu Tarafından Onaylı Mıdır?**
A.Evet B. Hayır
11. **Banka için “operasyonel risk” tanımı yapılmış mıdır?**
A.Evet B.Hayır
12. **Bankanızda Temerrüt Olasılığı(PD) ve Temerrüt halinde kayıp (LGD) Parametresi Hesaplanıyor Mu?**
A.Evet B.Hayır C.Çalışmalar Sürüyor
13. **Bankanızda riske maruz tutar (EAD) Parametresi Hesaplanıyor Mu?**
A.Evet B.Hayır C.Çalışmalar Sürüyor
14. **Bankanız çalışmaları Basel 2 ye uyum sürecinde ne aşamadır?**
A.Başlangıç B.Orta C.İleri
15. **Bankanız Basel 2 ye uyum sürecinde Kredi Riski Yönetim Birimine Bütçe Ayırımı Yaptı Mı?**
A.Evet B.Hayır C.Planlanma Aşamasında

16. **Basel II Kredi Riski Uygulamalarında Yeterli Teknik Bilgiye Sahip Personel İhtiyacınızı Nasıl Karşıladınız?**
A.Mevcut personel eğitilerek B.Yeni personel alımı C.Her ikisi de
17. **İşsel Derecelendirme Yaklaşımına Ne Zaman Geçilecek?**
A.Geçildi B.1 yıl içinde C.2 yıl D.3 yıl E.4yıl F.5yıl ve üzeri
18. **Kurumunuzun Basel II' ye Uyum Sürecinde Kredi Riski Yönetimiyle En Çok Sorun Yaşayabileceği Alanları Önem Sırası ile Yazar Mısınız? (5'ten geriye doğru)**
A.Tarihsel Veri Yetersizliği.....
B.Bilgi Teknoloji Sistemlerinin Yetersizliği/Altyapı Eksikliği.....
C.Üst Yönetimin Basel II Düzenlemelerine Gerekli Önemi Vermemesi...
D.Müşterilerin Yeterli Bilgiye Sahip Olmamaları.....
E.Maliyet.....
19. **Kurumunuzun Kredi Riski Yönetiminde Karşılaştığı En Önemli İşsel Sorunu İşaretleyiniz.**
A. Güçlü Kurumsal Yönetişim Eksikliği
B.Kredi Risk Yönetimi Kültürü Oluşturulamaması ve Bunun Yazılı Hale Getirilememesi
C.Kredi Riski Yönetim Kültürünün Üst Yönetim ve Bankanın Tüm Birimlerince Benimsenmemesi
D. Riske Göre Fiyatlamamın Yapılamaması ve Sorunlu Kredilerin Artması
E. Öz sermaye Yetersizliği
F. Bilişim Teknolojilerindeki Yetersizlik
G. Kredilendirme Sürecindeki Verilerin Etkin Olarak Toplanamama ve Yönetilememesi
H. İç Kontrol ve Denetim Yetersizliği
20. **Kurumunuzun Kredi Riski Yönetiminde Karşılaştığı En Önemli Dışsal Sorunu İşaretleyiniz.**
A. Global Dünyada Yaşanan Yasal ve Ekonomik Gelişmeler
B. Kayıt Dışılık
C. Mevzuattan Kaynaklanan Sorunlar
D. Ekonomik İstikrarsızlık
E. Bankalar Arası Rekabet
21. **İş birimleri ve faaliyet kolları bazında gruplanan süreçlerin taşıdığı operasyonel riskler, oluşma nedenleri, kayıp tutarları, kayıp türleri ve olaylar bazında belirlenmekte midir? Belirlenen riskler değişen koşullar nedeniyle (riskin giderilmesi, yeni ürün eklenmesi vb.) güncellenmekte midir?**
A.Evet B.Hayır C.Çalışmalar Sürüyor
22. **Banka bünyesindeki risk nosyonunun tüm personel tarafından benimsenmesi için çalışmalar mevcut mudur?**
A.Evet B.Hayır C.Çalışmalar Sürüyor
23. **Bankanızın Basel II uyum sürecini yönetmek üzere kişi ve birimler ve/veya komiteler belirlenmiş midir?**
A.Evet B.Hayır C.Planlanma Aşamasında
24. **Bankanızın Basel II ye uyum sürecine yönelik strateji ve politikalar belirlenmiş midir?**
A.Evet B.Hayır C.Planlanma Aşamasında

25. **Basel II uygulama sürecinde karşılaştığınız en önemli engeller/kısıtlar/sorunlar nedir?**
A. Bütçe B. PD ile ilgili veri C. LGD ve EAD ile ilgili veri
D. Teknoloji E. Nitelikli ihtisas personeli F. Basel II'nin anlaşılabilmesi
G. Diğer (Belirtiniz)
26. **Bankanızın kredi riski için Basel II ile getirilen yasal sermaye yükümlülüğü hesaplama yöntemlerinden öncelikle hangi yaklaşımları kullanma kapasitesinin olacağını düşünüyorsunuz?**
A. Basitleştirilmiş Standart Yaklaşım (SSA)
B. Standart Yaklaşım (SA)
C. Temel İçsel Derecelendirmeye Dayalı Yaklaşım (F-IRB)
D. İleri İçsel Derecelendirmeye Dayalı Yaklaşım (A-IRB)
27. **Bankanız Basel-II uygulanmaya başlandığında kredi riski için yasal sermaye hesaplanmasına hangi yöntemle başlamayı planlamaktadır?**
A. Basitleştirilmiş Standart Yaklaşım (SSA)
B. Standart Yaklaşım (SA)
C. Temel İçsel Derecelendirmeye Dayalı Yaklaşım (F-IRB)
D. İleri İçsel Derecelendirmeye Dayalı Yaklaşım (A-IRB)
28. **Bankanız kredi riski için başlamayı planladığı yöntemin gerektirdiği kriterler konusunda gerekli tüm teknik bilgiye sahip midir?**
A. Evet B. Hayır
29. **Bankanız standart yaklaşımlarla başlamayı planlıyor ise ileri yöntemlere geçme konusunda bir planı var mıdır?**
A. Evet B. Hayır
30. **Bir önceki soruya cevabınız evet ise, ne kadar bir süre içerisinde ileri yöntemlere geçilmesi beklenmektedir?**
A. 1-3 yıl B. 4-6 yıl C. 6-8 yıl D. 8-10 yıl E. 10 yıldan fazla
31. **Bankanızın kullanmayı planladığı derecelendirme modeli hangi özelliğe sahiptir?**
A. İstatistik tabanlı B. Yargısal tabanlı (judgmental) C. Hibrit (istatistik + yargısal)
32. **Bankanız Basel-II'nin uygulanmaya başlandığında operasyonel risk için yasal sermaye hesaplanmasına hangi yöntemle başlamayı planlamaktadır?**
A. Temel Gösterge Yaklaşımı (BIA)
B. Standart Yaklaşım (SA)
C. Alternatif Standart Yaklaşım (ASA)
D. İleri Ölçüm Yaklaşımları (AMA)
33. **Bankanız operasyonel risk için başlamayı planladığı yöntemin gerektirdiği kriterler konusunda gerekli tüm teknik bilgiye sahip midir?**
A. Evet B. Hayır
34. **Bankanız basit ve standart yaklaşımlarla başlamayı planlıyor ise ileri yöntemlere geçme konusunda bir planı var mıdır?**
A. Evet B. Hayır
35. **Bir önceki soruya cevabınız evet ise, ne kadar bir süre içerisinde ileri yöntemlere geçilmesi beklenmektedir?**
A. 1-3 yıl B. 4-6 yıl C. 6-8 yıl D. 8-10 yıl E. 10 yıldan fazla

36. Standart yöntemleri kullanabilmek için bankanızın bilgi ve veri sistemleri alt yapısı yeterli midir?
A.Evet B.Hayır
37. Temel işkolları bazında sınıflandırma yapılmış ve her bir iş kolundan gerekli gösterge verisi elde edilebilmekte midir?
A.Evet B.Hayır
38. Bir önceki soruya cevabınız evet ise bankanız operasyonel risk ölçümünde ve yasal sermaye tahsisinde ileri ölçüm yöntemlerinden hangisini kullanmayı planlamaktadır?
A. Kayıp Dağılımları Yaklaşımları (LDA)
B.Skor Kart Yaklaşımları (SCA)
C.Yapay Sinir Ağları (Neural Networks)
D. Diğer (lütfen belirtiniz)
39. Bankanızda piyasa risklerinin ölçümünde içsel modeller kullanılmakta mıdır?
A.Evet B.Hayır
40. Bankanızda piyasa risklerinin ölçümünde kullanılan içsel modeller hangi yöntemlere dayanmaktadır?
A.Tarihi Simülasyon B.Varyans-Kovaryans C.Monte Carlo Simülasyonu
41. Otuz dokuzuncu soruya cevabınız Evet ise, içsel modeller günlük faaliyetlerin bir parçası olarak finansal kararların alımı, limitlerin belirlenmesi vb amaçlarla kullanılmakta mıdır?
A.Evet B.Hayır
42. Otuz dokuzuncu soruya cevabınız Evet ise, içsel modelin yasal sermaye yükümlülüğünün hesaplanmasında kullanılması planlanmakta mıdır? Kullanıma ne zaman geçilmesi planlanmaktadır?
A. 1 yıldan az B. 1-2 yıl C. 2-3 yıl D. 3-4 yıl E.4 yıldan uzun
43. Otuz dokuzuncu soruya cevabınız Evet ise, bankanız içsel modeller ve bunların kullanımı konusunda gerekli tüm teknik bilgiye sahip midir?
A.Evet B.Hayır
44. Basel 2 nin kurumunuzun sermaye düzeyine etkisini hakkındaki tahmininiz nedir?
A. 20% üzeri arttıracak B.10%-20% arttıracak C.10% dan az arttıracak
D. Değişmez
E. 10% dan az azalacak F.10%-20% azalacak G.20% üzeri azalacak

Appendix 6: Survey Form on Smes in Samsun

1. İşletmenizin Faaliyet Türü nedir?

2. İşletme adına araştırmaya katılan yetkilinin görevi nedir?

- a. İşletme sahibi
- b. Şirket ortağı
- c. Şirket müdürü
- d. Finansman Müdürü

3. İşletmenizi Kim Yönetiyor?

- a. İşletme sahipleri
- b. Ortaklardan Birisi
- c. Uzman Finans Yöneticisi

4. İşletmenizin Kurucusu Kimdir?

- a. Büyük Babam
- b. Babam
- c. Ağabeyim
- d. Ben Kendim
- e. Küçük Kardeşim

5. İşletmeniz kaç yıldır sektördedir?

.....YIL

6. Aile üyelerinizin işletme sahiplik oranı yazar mısınız?

%.....

7. İşletmenizin kuruluş sermayesinde en ağırlıklı kalem hangisidir?

- a. Öz sermaye
- b. Akraba ve yakınlardan borçlanma
- c. Banka kredisi
- d. Yatırım kredisi
- e. Ticari kredi
- f. Halka açılma
- g. Teşvik kredileri

8. Kuruluşunuzun statüsü nedir?

- a. Şahıs Firması
- b. Limited Şirket
- c. Anonim Şirket
- d. Kollektif Şirket
- e. Komandit Şirket
- f. Kooperatif

9. Yöneticilerinizin Genel Eğitim Düzeyi

- a. İlköğretim
- b. Lise
- c. Üniversite
- d. Lisans Üstü Eğitim

10. İşletmede Çalışan Sayısı

.....

11. İşletmenizin yönetici sağlama politikasını öneme göre sıralar mısınız?*

- a. Aileden fakat eğitilmiş.....
 - b. Profesyonel yönetici önceliklidir.....
 - c. Mutlaka aileden olmalı
 - d. Belirgin bir politikamız yoktur
 - e. Diğer
- *en önemli 1, en önemsiz 5 (1 den 5 e doğru)

12. Hangi pazarlara hitap ediyorsunuz?

- a. İl düzeyinde
- b. Bölge düzeyinde
- c. Ulus düzeyinde
- d. Uluslar arası düzeyde

13. İhracat yapıyor musunuz?

- a. Evet (14.soruya geç)
- b. Hayır

14. Üretiminizde ihracatın payı yüzde kaçtır?

%.....

15. Yıllık Cironuz ne kadardır?

.....TL

16. Kaynak Temininde Sıkıntı Yaşıyor musunuz?

- a. Evet (soru 17 e bkz.)
- b. Hayır

17. Evet ise; Kaynak Sıkıntısının Aşılma Yöntemi olarak en fazla başvurduğunuz yöntem hangisidir?

- a.Ortaklardan Borç Alarak
- b.Öz kaynakları Artırarak
- c.Bankalardan Kredi Alarak
- d.Borçları Erteleyerek
- e. Yakınlardan Borç
- f.Yeni Ortak alımı
- g. Leasing
- h. Faktöring

18. İşletmenizde finansman kaynağı olarak kredi kullanıyor musunuz?

- a. Evet (soru 19 a bknz.)
- b.Hayır

19. Cevabınız evet ise, işletmenizde ne tür kredi kullanımı söz konusudur?

- a.Ticari banka kredileri
- b.Katılım bankası kredileri
- c.Yatırım ve kalkınma bankası kredileri
- d.Yurtdışı finans kurumlarından sağlanan krediler
- e.Teşvik kredileri
- f. Diğer.....

20. Kredi ilişkisinde bulunduğunuz banka sayı kaçtır?

- a. 0
- b.1
- c.2
- d.3
- e.4
- f. 5 ve üzeri

21. Bir defada kullandığınız en yüksek kredi tutarı ne kadardır?

.....TL

22. Yıllık tüm bankalardan kullandığınız kredi tutarı ne kadardır?

.....TL

23. Banka kredisi tercih etmiyorsanız en önemli nedeni işaretler misiniz?

- a.İşlemlerin uzun sürmesi
- b.Bankaların çok bilgi istemesi
- c. Faiz konusundaki duyarlılık
- d.Yüksek faiz oranları
- e.Geri ödeme süresinin kısa olması
- f. Ödemede yaşanan güçlükler

24. Bankacılık İşlemlerinizi En çok kullandığınız işlem hangisidir?

- a.Para transferi
- b.Kredi işlemleri
- c.Doğrudan tahsilât sistemi
- d.Üye işyeri hizmetleri
- e.Fatura/vergi ödemeleri
- f.Maaş ödemeleri
- g.Sigorta
- h.Factoring
- ı.Leasing
- i.Yatırım İşlemleri
- j.Çek/senet tahsilatı
- k.Diğer

25.Basel II'den haberdar mısınız?

- a.Evet(soru 26 a bknz)
- b. Hayır

26. Nereden haberdar oldunuz?

- a.Sanayi ve Ticaret Odaları
- b.internet
- c.bankalar
- d.KOSGEB
- e. Danışmanlık şirketleri
- f. Üniversite
- g. Diğer:.....

27. Basel II Kriterleri ile ilgili Bilginiz Var mı?

- a.Evet (soru 28 e bknz)
- b.Hayır (soru 29 a bknz)

28. Cevabınız evet ise, işletmeniz Basel II' ye yönelik nasıl bir hazırlıkta bulunmaktadır?

- a.Sermaye yapısını güçlendirmek
- b.Finans yöntemleri konusunda uzman kişileri istihdam etmek
- c.Uluslararası standartlara göre mali tablo hazırlanması
- d.Kredi yerine faktoring ,leasing gibi yöntemlere yönelmek

29. Cevabınız Hayır ise Nedeni Nedir?

- a.Basel II hakkında bilgilendirmenin yetersiz olması
- b.Basel II uygulamasının daha yeni olması
- c.Basel II hakkında bilgiye gerek duyulmaması
- d.Diğer.....

30.Basel II Kriterlerinden Faaliyet Gösterilen Sektörün Etkilenmesi konusunda görüşünüz nedir?

- a.Kesinlikle olumlu etkiler
- b.Genel olarak olumlu etkiler
- c.Kısmen Olumlu etkiler
- d.Olumsuz etkiler
- e.Kesinlikle bir etkisi olmaz

31. Basel 2 konusunda daha önce eğitim veya danışmanlık hizmetleri aldınız mı?

- a.Evet
- b. Hayır

32. Basel 2 nin kredi maliyetlerine etkisi nasıl olacaktır?

- a. Bilgim yok
- b.azaltacak
- c.arttıracak
- d.değişmeyecek

33.Derecelendirmenin kredi maliyetlerine etkisi nasıl olacaktır?

- a. Bilgim yok
- b.azaltacak
- c.arttıracak
- d.değişmeyecek

34. Teminatların kredi alımında etkisi nasıl olacaktır?

- a. Bilgim yok
- b.azaltacak
- c.arttıracak
- d.değişmeyecek

35. Teminatların kredi maliyetlerine etkisi nasıl olacaktır?

- a. Bilgim yok
- b.azaltacak
- c.arttıracak
- d.değişmeyecek

36. İşletmenizin banka kredileri için verdiği teminatları önem sırasına göre numaralandırır mısınız?

- a.Nakit, Mevduat ve Mevduat Sertifikası
- b.Gerçek Müşteri Çek ve Senedi
- c.Yatırım Fonları
- d.Gayrimenkul ipoteği
- e.Şahsi Kefalet
- f.Teminat Kefalet Mektubu
- g. Kredi Garanti Fonu
- h.Taşıt Rehini

37. Basel II kriterleri sonrasında teminat yönünden sorun yaşayacak mısınız?

- a.Kesinlikle evet
- b.Evet
- c.Kararsızım
- d.Hayır
- e.Kesinlikle hayır

38. İşletmenizin mali tablolarının dış denetime tabi olması gerekli midir?

- a.Evet gereklidir (soru 38 e bknz)
- b.Hayır, gerekli değildir
- c.Bilgimiz yok

39.İşletmenizin mali tablolarının denetiminin gerekliliğini önem sırası ile numaralandırır mısınız?

- a. Yasal Zorunluluk
- b.Kredi Alabilmek
- c.Riskleri Kontrol Edebilmek
- d.Ortaklara Hesap Verebilmek
- e.Az Vergi Ödemek

40.Risk derecelendirme notunuz var mı?

- a.Evet
- b.Hayır
- c.Yeni Başvuru Yaptık

41. Mali tablolarınız uluslararası muhasebe standartlarına uyumlu mu?

a.Evet b.Hayır c.Fikrim Yok

42. Cevabınız Hayır ise hangi süre diliminde uyumlulaştırmayı düşünüyorsunuz?

a.Şu an planlamadık.

b. 1 Yıla kadar

c.1-2

d.3-5

e.Diğer:.....

43. Borç ve alacaklarınızın vade uyumu var mıdır?

a. Evet b. Hayır

44. Borç ve alacaklarınızın miktar uyumu var mıdır?

a. Evet b. Hayır

45. Borç ve alacaklarınızın para birimi uyumu var mıdır?

a. Evet b. Hayır

46. Türev ürünlerini kullanıyor musunuz?

a. Evet b. Hayır c. Bilgim yok

47. Hangi risklere maruz kaldığınızı düşünüyorsunuz?

a.Kur riski

b.Faiz riski

c.Operasyonel risk

d.Hammadde fiyatlarının artması riski

e.Ürünün satılamaması riski

48.Bu riskler için önlem aldınız mı?

a.Evet b.Hayır

49.Risk yönetimi araçlarını tanıyor musunuz?

a.Evet b.Hayır

50. Future, forward, opsiyon gibi vadeli işlemler hakkında bilginiz var mı?

a.Evet b.Hayır

51.Portföyünüzde türev ürün var mı?

a.Evet b.Hayır

52.Eğer Risk yönetimi yapmıyorsanız yapmama sebebiniz nedir?

a.Risk yönetimi araçlarını tanımıyorum

b.Uzman insan kaynağım yok

c.Gerek duymuyorum

d. Diğer:.....

53. Beklenmedik durumlar için bir senaryonuz var mı?

a.Evet b.Hayır

54. Faaliyetlerinizin Tamamı Kayıt Altında mıdır?

a. Evet b. Hayır c. Kısmen

55. Bankalarda Borçlanma Sürecinde Sıkıntı Yaşıyor musunuz?

a.Evet (soru 56 a bknz.) b.Hayır

56. Borçlanma sürecinde yaşamış olduğunuz sıkıntılar nelerdir?

a.Banka teminatları

b.Kredi faiz oranları

c.Kredi masraf tutarları

d.Bankaların tutum ve tavırları

e.İstenen teminat türleri

f.İşletmenin yönetsel ve kurumsal yapısı

g.Yetersiz öz kaynak yapısı

h.Borç almaktan çekinme

i.Yetersiz mali tablolar

j.Mali tabloların şeffaf olmaması

k.Aşırı borç yükü

l. Aşırı bürokratik işlemler

57. Faaliyetlerinizde sıkıntı yaşadığınız alanları önem derecesine göre belirtiniz.(1,2,3..)*en önemli 1

- a.Finans.....b. Pazarlama.....
C. Üretim..... d. Ar-Ge.....
e.Yönetim.... f.İnsan Kaynakları....
G. Diğer:.....

58. İşletmenizde ayrı bir finansman bölümü var mı?

- a.Evet b.Hayır

59. İşletmenizin finansman konusunda en sık yaşadığı sorun hangisidir?

- a.Tahsilat sıkıntısı
b.Kredi faiz oranlarının yüksekliği
c.Kredilerin sınırlılığı
d.İşletme sermayesinin yetersizliği
e.Teminat
f.Sermaye piyasaları konusunda yeterli bilgiye sahip olamama

60. İşletmenizin toplam varlıklarının % kaçını öz kaynaklarla finanse edilmiştir?

%.....

61. İşletmeniz faaliyetlerini yürütürken nakit sıkıntısına düştüğü oluyor mu?

- a.Evet (soru 62 e bkznz) b.Hayır

62.İşletmenizin nakit sıkıntısına düşmesindeki en önemli etken hangisidir?

- a. Alacakların tahsilinde yaşanan sorunlar
b. Kontrol altında tutulamayan harcamalar.
c. Düzenli ve etkin finansal planlama ve bütçeleme yapılamaması
d.Yanlış stok politikası izlenmesi
e.İşletmenin satın alma gücünün azalması
f.Yeni yatırım ihtiyacının doğması

63. İşletmenizin faaliyetlerini öz kaynaklarınızı kullanarak mı yürütüyorsunuz?

- a. Evet b. Hayır

64. Öz kaynak Dışında Yatırımların Finansmanı

- a.Kısa Vadeli Banka Kredileri
b.Orta Vadeli Banka Kredileri
c. Uzun Vadeli Banka Kredileri
d.Uluslar Arası Piyasalardan Sağlanan Krediler
e. Leasing

65. Kurumsallaşma sizin için ne ifade ediyor?

- a.Gerekli değil, yönetici istediği için yapılır
b.Örgütler sürekliliklerini kurumsallaşarak sürdürür
c.Kurumsallaşma olmasa da olur
d.Kurumsallaşma işletmenin düzenini bozar

66. İşletmenizde Kurumsallaşma çalışmaları var mıdır?

- a. Evet b.Hayır

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