Risk and Efficiency in Credit Concession: A Case Study in Portugal

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The relationship between banks and customers has contributed to several theories in banking economics. The quality of the credit is crucial for banks. Banks classify the risk through quantitative and qualitative indicators. Quantitative indicators are much used by banks, but qualitative indicators are also considered in credit risk evaluation. Taken together, they contribute to increase efficiency and decrease doubtful credit. Several issues arise in order to understand if risk evaluation affects the efficiency of the banking sector or if it affects the bank customer relationship. We wish to analyse some quantitative and qualitative indicators used by the Portuguese banking system. Despite the reputation of a client being a very important qualitative indicator, it is not enough to determine a classification of low risk.

Key Words: credit, banks, bankruptcy, risk
JEL *Classification:* E51, G21, G32, G33

Introduction

The relationship between banks and firms occupies an important place in the economic and financial literature. On the other side, the relationship between banks and households has not been the subject of so many studies, and several times it has been covered by the same studies of the firms. More recently, and because indebtedness of the households is a concern by the government authorities, some research in this area has been developed, studying the reasons for and consequences of debt in the families. Moreover, there is an important part of the credit for micro enterprises, confused with the credit to households, either by the kind of credit or by the guarantees required.

The household customer is defined in this study as families whose credit is used in their private spending. This is more specific than in

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much literature about the subject, which covers companies and citizens, and standardize the term 'private' to refer to what is non-public. For the nature of the credit granted, this concept has been sub-divided into credit to housing, consumer credit and credit for other purposes. In the credit to firms, often the subdivision is made by the temporality of credit, being the long-term concept primarily intended for investment and the short/medium term for the current operations of the business of the firm.

To differentiate household customers from other customers is important in banking activity, because their behaviour differs from the firms'. The banks themselves take different attitudes to these two kinds of customers. Moreover, in industrialised countries, the total amount of credit granted to individual customers is not less important than that granted to firms, particularly for long term loans. Considering the dichotomy between credit to businesses and credit to individuals, and according to statistics of credit granted by the Portuguese Association of Banks (Associaçao Portuguesa de Bancos 1994; 2006), credit to firms in nominal values tripled between 1993 and 2005, while the credit to households is eight times more in the same period. While in 1993 the ratio 'credit to firms/credit to households' was 2.29, in 2005 the ratio stood at 0.97, and the credit granted to the households has exceeded the credit granted to firms after 1999.

One of the problems arising from the growth of credit to individuals has been the over-indebtedness of the households. The involvement of citizens in demand for credit has resulted, on one side, in the decision of each individual for credit and the consequent offer of banking products to this segment of the market and, on the other side, by the general conditions of the economy. Although the Portuguese economy has shown signs of over-indebtedness, indicators of doubtful credit had not increased significantly in recent years until 2007, which led us to assume a high degree of efficiency in the credit risk evaluation. In 2008, as a consequence of the financial crisis, doubtful credit increased in both segments of the market.

This article reviews the criteria for granting credit to firms and households and analyses differences of each one. We evaluate the efficiency of banks in the assessment of credit and determine the importance of qualitative and quantitative indicators.

The paper is structured as follows: the next section reviews the economic principles of the role of the intermediation in the contracts be-

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tween banks and firms or between banks and households. The third section is dedicated to empirical analysis of the indicators of risk of credit. The fourth section concludes the paper.

Literature review

THE ROLE OF BANK INTERMEDIATION

Several theories of intermediation have developed the relationship between banks and firms in an environment of asymmetric information. Banks impose several incentives in order to solve problems of moral hazard (Allegret and Baudry 1996). According to Stiglitz (1985), the principles of the theory of intermediation are based on the inability of financial intermediaries to obtain the necessary information in a climate of uncertainty and the inability of banks to control effectively the risk taken by the borrowers. Gorton and Kahn (1993) show the interest of the financial intermediary to take credible procedures, considering a package of incentives in the contract.

According to Allegret and Baudry, three structures can be observed in the relationship between banks and firms: (1) market relationship (2) hierarchical relationship, and (3) relationship of quasi-integration. The market relationship (1) is characterized by a greater flexibility in the relationship and a lack of control by the bank on the quality of information provided by the firm. In the market, the loyalty observed in the relationship between banks and firms does not seem very important. The bank diversifies its portfolio of clients and the firm diversifies its sources of funding. In this case, the firm can get into greater difficulty when starting its activity with investments that have a certain degree of risk. Bad credit penalties are required by the market itself. It is essential that the bank establish statistical tests over data provided by the firms whose results can justify the restriction of credit. From the opposite side, there is the hierarchical structure (2). In this case the bank has ability to carry out audits over the firm. Financing structure is marked by the dependence of the firm on the bank. By diversifying banking products and services offered to the firms, the bank can monitor more closely the activities of the firm. Financial intermediaries occupy the central part of the system. The firm, under this structure, maintains a privileged relationship in the long term with a bank (the principle of authority). On the other side, the bank obtains the right of interference in the management of the firm. Banks, in this case, take control in the management of important sectors of the firm: they can monitor and collect information about the firm,

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as lenders as well as shareholders. The exchange of information between them is very strong. Finally, the structure of quasi-integration (3) corresponds to the usual customer relationships with the banks. This structure is a combination of the two other principles, particularly about the need to create incentives and provide attitudes of confidence. For the firm, the importance of this structure is justified by the durability of the relationship. Consequently, the relationship is not based on a pricing system as the market structure indicates, or by a kind of administrative authority, as in the hierarchical structure model. The support of this kind of relationship is based on the fact that information is expensive and because of that it should be shared by all the players. The information is the basis of the relationship and its potential efficiency. Firms can have a relationship with several banks, but only one has the role of the main bank. If the firm wants to change bank, this attitude will be considered as a sign of alarm for the bank.

Considering research on consumer credit, the life cycle model of Ando and Modigliani (1963) should be mentioned. According to this model, consumers choose a path of optimal consumption for their lives. Thus, younger consumers borrow more, expecting to re-pay debt with future revenues. On the other side, middle-aged consumers prefer to save for their retirement needs. Therefore, the level of consumption is chosen, based on the expected total income for life without being limited by the time at which the income is expected to be available. Note that present resources of a family are the result of income from the past and do not reflect the potential future income of the family. This means that, in a perfect world, there are no over-indebted consumers. It is assumed that the permanent income of the consumer depends on their age, current income (or in cases where there is no data about their income or debt, the consumption value can be used as a proxy for income or debt), size of the household and possibly the education level.

THE VALUE OF CONFIDENCE IN THE RELATIONSHIP BETWEEN BANKS, FIRMS AND HOUSEHOLDS

According to Gambetta (1988), confidence is defined as a level of subjective probability where an agent evaluates the action to be produced by another agent, in a context where his own action is also evaluated by the other. Confidence solves complex problems resulting from the relationship and reduces, to some extent, the climate of uncertainty where the relationship is developed. Uncertainty dominates some procedures in the contracts because the markets are imperfect considering the in-

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formation shared by the players. The contracts are incomplete because it is not possible to consider all the states of nature underlying the completion of the contract at the time of the negotiation. The confidence is born from the relationship established by the agents. But what gives confidence? The geographical proximity of contractors increases the feeling of belonging to the same community, which may contribute to the resolution of the contract. The banks that maintain a close and long-term relationship with customers are supposed to have a particular attitude to these customers. For instance, confidence between players supports an attitude for helping, in temporary difficulties the payment of debts. If a client faces temporary financial problems and the bank refuses help to overcome client difficulties, this attitude will destroy the trust and benefit assessment of the long term relationship. According to Allegret and Baudry (1996), a firm that does not repay its own debt when it falls in temporary difficulties can receive some support from the bank. However, the bank expects that the firm undertake efforts to resolve their difficulties.

The relationship between banks and customers has registered significant changes in recent years. Technological development has facilitated access to information and contributed to increase the flow of capital between countries. At the same time, this flow of capital accelerates the participation of banks in credit. The spread of financial markets and the intervention of foreign investors in domestic markets have contributed to increase the role of banks in the management of these movements. In response to the growth of financial markets in the world, banks have developed several services, providing analysis and advice, providing new banking products, managing investment portfolios, providing credits for investment in stock market, etc. Moreover, one of the most important consequences is the intensification of bank competition, expressed by a reduction of its financial margins. Consequently, the banks have diversified financial instruments, as with new saving products and with new credit products.

THE QUALITY OF THE CREDIT

A problem of the relationship between banks and clients, with firms as well households, is the quantity and quality of information required by the banks to be provided by their customers. Information is shared among economic agents and that obligation is usually formalized in the contract. There are asymmetries of information in the relationship between customers and banks. According to Diamond (1989), it is neces-

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sary to ensure the transmission of information. When a customer requires a loan, he or she communicates information to the bank. However, the loan is always a repayment to be made in the future, which makes it difficult to fully ensure the completion of the loan in advance. The bank may face a situation of moral hazard and the probability of non-reimbursement increases. However, with the information obtained, the bank gets an advantage that will allow the bank to examine conditions for future loans. The quality of the information submitted by the customer is essential. Therefore, the information is usually formalized by an increase of guarantees provided by the client and the evidence of audits performed regularly gives more confidence to credit.

The quality of credit is also crucial for banks. Some of the problems faced by banks are connected with financing of high risk projects. Canals (1997) classifies the difficulties registered by the banks into two groups: cyclical reasons (economic recession, high loans ratio etc) and structural reasons (low financial intermediation, globalisation of markets and financial innovation). The analysis of risk and control of the credit are thus fundamental for banks.

Despite the supervision of banks, loans are always risky. Competition between banks has led banks to take more aggressive strategies that increases risk in their credit portfolios. On the other side, the existence of asymmetries of information has led the banks to increase administrative costs of supervision. Sometimes, clients have the advantage of being able to hide internal information. Several studies examine the conditions of an optimal contract. Eber (1996) discusses the conditions of a contract in a long-term relationship with the firm. Mojon (1996) considers the optimal contract, at the time the credit is requested, through the interest rate negotiated with the bank. Stiglitz and Weiss (1981) analyze the optimal contract agreement with the existence of collateral. Diamond (1991) based his analysis on the ability of the banks to supervise the activity of the firm. Pollin and Vaubourg (1996) analyse repeated contracts, which are signed between the firm and the bank.

Empirical studies show that there is an optimal ratio for doubtful credit, which should not exceed 3% of total credit (Sousa 1992). However, doubtful credit cannot be totally eliminated because a full analysis of the credit is too expensive. However, should investment banks accept a higher proportion of doubtful credit? Investment banks have fewer possibilities to diversify their credit portfolio and, consequently, this can increase diversifiable risk.

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In the credit market, there are borrowers with a very low risk profile, a second group with a medium risk profile and a third group with a high risk profile. Banks know only an estimate of the proportion of customers in each group. The first group, probably doesn't need a high level of monitoring. The third group, on the other hand, has nothing to lose with an ex post revelation of their situation. Thus, the monitoring is now perhaps more effective in the second group of customers. The existence of doubtful credit in all groups of risk should occur because banks do not know ex ante the group in which the customer should be classified. Moreover, should the banks get benefits in decreased monitoring in order to face a very competitive market? Is the rapid expansion of credit, which has occurred in the last ten years, the result of decreasing procedures in credit risk evaluation?

ASSESSMENT OF CREDIT AND RISK

Some empirical and theoretical studies about the risk of credit can be resumed in the use of two kinds of tools. One is more targeted for quantitative analysis, as in the study by Rosenwald (1998), and the other for descriptive analysis, basing the analysis on qualitative indicators, as per Milewicz (1991). That distinction still persists in more recent studies. Some authors, such as Mihai (2003), Cossin and Pirotte (2001) developed their mathematical models following distributions of probabilities and relatively complex mathematical formulae to determine the risk. They conclude that property values are the best indicators to determine the risk. Other authors, such as Mallick, Chakraborty, Cresenta (2002), claim that past behaviour, reputation and the importance of recognized persons, associated with personal wealth are determinants in the bank-customer relationship. When a bank decides to limit the credit, risk perceived becomes more important than calculated risk. However, the existing literature seems more abundant with regard to the study of credit to firms than to private customers.

The increase of credit in Portugal has been a study for many authors, such as Japelli and Pagano (2000), Blanchard and Giavazzi (2002), Spiegel (2004), and Brzoza-Brzezina (2004).

Blanchard and Giavazzi (2002), describe the large increase in credit in Portugal as a 'natural' result of the growing international integration, with a more free flux of capital from rich countries to poorer ones. The increase in confidence in the Portuguese economy after the entry of Portugal in to the European Union resulted in more foreign investment in

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Portugal. Increases in the amount of credit were also a result of the dynamic of the Portuguese economy and a consequence of decreasing interest rates and inflation.

Some recent empirical studies suggest that the marginal propensity towards consumption (MPC) is in decline in many industrialized countries. Considering the standard model of representative consumer, there are two factors apparently not correlated, which, according to Bishop and Park (2004), are closely linked. The trend of the decline of recent MPC coincides with the reduction of restrictions on credit. At first glance, this should not happen. Curiously, there is a consumption decrease when debt grows, especially derived by the use of credit cards. The explanation is the decrease of income. The current proliferation of credit cards makes current consumers less responsible than the previous generation about marginal propensity to save. Nowadays, there is a greater facility to borrow, and because of that, consumers are better prepared to face some temporary crises in their income or face occasional increases in household expenditure.

Empirical research

METHODOLOGY

The methodology is based on the achievement of two surveys to banks, one on the assessment of credit to firms and a second on the assessment of credit to household customers. These two surveys were made by the authors at two different times. In this paper, we wish to make a joint reflection on the problem of risk in the assessment of credit to firms and households. The methodology of the survey and collected data is identical in both researches.

In the survey to the banks, about the methodology to determine credit's risk to the enterprises, 27 banks responded out of a total of 52 banks registered in the Portuguese Association of Banks. From the 27 banks that responded, 13 were universal banks, 10 investment banks, and 4 were foreign banks operating in Portugal. In the second survey, on the methodology to determine credit risk to household customers, there were only 20% of the banks that participated in the survey. Note, however, that investment banks were not included in this second survey.

QUALITATIVE AND QUANTITATIVE INDICATORS

Banks use quantitative and qualitative indicators to evaluate credit for firms as well as for household customers. The first ones show the per-

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formance of the firm or the financial strength of the household, and the second indicators normally reflect the quality of management, the reputation of the customer.

The importance of qualitative indicators is founded on the assumption that signs of past or present financial soundness may not be sufficient to ensure future payments. In this case, the reputation of the customer becomes important and reflects the conditions of credit in the contract.

The main quantitative indicators used by banks in the assessment of credit risk for firms are: sales; cash-flow generated by the firm; cash-flows obtained by the business, financial charges, salaries and social charges; financial autonomy; capacity for repayment of loans; debt to the public sector; debt to other banks; existing mortgages.

The main qualitative indicators are economic and social ones, such as the location of the business, if the firm is already classified as a privileged client; market reputation for goods or services sold by the firm; labour policies; seniority of employees, labour conditions; past commitments and firm's strategy; credibility of future commitments; redistribution of profits strategy; innovation; ability to innovate equipment or procedures, etc.

For credit to households, quantitative indicators considered in the survey are: household revenue; historical bank balance sheet of the customer; customer wealth in general; patrimony; mortgages; savings accounts and insurance; failure of payment to other banks; taxes default; past loans; collateral warranties; potential charges with commitments For qualitative indicators: reputation and credibility of the customer; opinion of the account manager of the bank; honesty; occupation; employment conditions; education; age; reputation and financial capacity to face difficulties; marital status; number of members of the household, etc.

We are interested to analyse the banks that give importance to qualitative indicators in order to understand the importance of these indicators in the credit evaluation. In a first attempt to understand the importance of risk indicators in credit analysis, we have interviewed managers of three banks, which have explained the methodology applied by the banks to evaluate credit risk. The first perception was that quantitative indicators have more importance in the credit risk analysis than qualitative indicators. For the classification of banks into universal and investment banks we have followed the Portuguese Banking Law that transpose sthe

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TABLE 1 Banks classified by the importance given to quantitative indicators (%)

Group 1 (more than 80% of the evaluation of quantitative indicators)	22
Group 2 (from 60 to 80% of the evaluation of quantitative indicators)	52
Group 3 (more than 40% of the evaluation of qualitative indicators)	26

TABLE 2 Distribution of banks in accordance with the activity and the weight given to quantitative indicators

Banks	Groups 1 + 2 (%) ($Q \geq 60\%$)	Group 3 (%) ($Q \leq 60\%$)	Total Banks
Public banks	100	0	2
Private banks	71	29	21
• universal banks	63	37	11
• investment banks	80	20	10
Foreign banks	75	25	4
• universal banks	100	0	1
• investment banks	66	34	3

NOTES *Q* – percentage of quantitative indicators given to credit risk evaluation.

EEC Directive 92/30/EEC into the Portuguese banking regulation. For foreign banks we have considered the banks that have representative offices in Portugal.

Thus, given that information and data on the assessment of credit to firms, the banks were classified into three main groups:

- *Group 1:* this group gives high importance to the quantitative indicators in the analysis of credit risk. These banks allocate more than 80% of the weight to quantitative indicators and less than 20% to qualitative indicators.
- *Group 2:* this group gives more importance to quantitative indicators, but less than the previous ones. The banks included in this group score between 60% and 80% for quantitative indicators.
- *Group 3:* this group gives more importance to the qualitative indicators in the analysis of credit risk. The banks included in this group score over 40% of qualitative indicators.

In accordance with the results of the survey, the percentages, given to the evaluation of credit risk to households were 54% for quantitative indicators, while for qualitative indicators they were about 46%. Quantitative indicators continue to gain a stronger weight in the evaluation of

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credit risk of the households. The most referred are: the total amount of past credit, average balances of customer accounts, and household revenue. Larger banks favour the quantitative indicators, giving a weighting of 75%. Smaller Banks have a more equitable balance between quantitative and qualitative indicators.

In accordance with the importance of credit given to individual customers, mortgage credit is the most important, followed by credit for consumption and credit applied to other property such as cars. Also important is the credit applied to small investments to support participation in financial markets or support participation in small business. Reasons for that kind of credit are: mortgage credit, because of the collateral and the loyalty of the customer; credit for investment to support business, considering the wealth of the customers.

DEGREE OF USE OF QUANTITATIVE INDICATORS IN THE ANALYSIS OF CREDIT RISK

Credit to firms

The quantitative indicator most used by the banks is the indebtedness level of the firm and its financial autonomy. Meanwhile, quantitative indicators that differentiate most the importance given by the banks are: volume sales; total mortgages; expenses on human resources; solvency of the firm and cash-flow generated by the business.

The qualitative indicators most used by the banks are: good management of the firm (an indicator often used by 63% of the banks that answered the questionnaire); capacity of the managers (often used by 52% of the banks); conditions of trade (often used by 13% of the banks) and the introduction of new technologies in the firm (used by 37% of the banks);

The following qualitative indicators mostly differentiate its use by the banks: human resources of the firm (often used by 7% of the banks but never used by 37% of the banks), the opinion of the manager's account about the firm (used most by 37% of banks and little or never used by 19%).

Table 3 considers the banks that most use quantitative indicators (>80%) compared with the banks that have a moderate use of these indicators (<60%) when they analyse firms with a very low or low risk level.

Table 4 considers the banks that use most quantitative indicators (>80%) compared with the banks that have a moderate use of these

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TABLE 3 Banks' behaviour to very low and low risk level firms classified by the use of quantitative indicators and by the intensity of use of the referred indicators

Bank's behaviour	Risk level									
	Very low (%)					Low (%)				
	1	2	3	4	5	1	2	3	4	5
A. *No monitoring of the firm*										
Q_1 – quantitative (>80%)			50	50			16	50	33	
Q_2 – quantitative (<60%)		14	14	71			14	43	43	
B. *Risk prime* (+ or –)										
Q_1 – quantitative (>80%)			33	33	33		67	33		
Q_2 – quantitative (<60%)			43	14	43		50	50		
C. *Bank's participation in financial needs of the firm*										
Q_1 – quantitative (>80%)				100				100		
Q_2 – quantitative (<60%)				100				71	29	
D. *Guarantees* (+ or –)										
Q_1 – quantitative (>80%)				100				83	17	
Q_2 – quantitative (<60%)			43	57				86	14	

NOTES Use of the referred indicators: 1 – never used, 2 – seldom used, 3 – used, 4 – often used, 5 – always used.

TABLE 4 Banks' behaviour to high and very high risk level firms, classified by the use of quantitative indicators and by the intensity of use of the referred indicators

Bank's behaviour	Risk level									
	High (%)					Very high (%)				
	1	2	3	4	5	1	2	3	4	5
C. *Reduce the participation of the bank in credit and other operations*										
Q_1 – quantitative (>80%)				17	83					100
Q_2 – qualitative (<60%)				86	14			29	14	57
D. *Guarantees* (+)										
Q_1 – quantitative (>80%)				17	83					100
Q_2 – quantitative (<60%)				86	14			29	14	57
E. *Credit rationing*										
Q_1 – quantitative (>80%)				33	67					100
Q_2 – quantitative (<60%)		29		57	14		29			71
F. *Interfere in the management of the firm*										
Q_1 – quantitative (>80%)	67		17		17	67		17		17
Q_2 – quantitative (<60%)			57	29	14		29	57		14

indicators (<60%) when they analyse firms with a very high or high risk level.

Table 5 considers the banks that use the most quantitative indicators

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TABLE 5 Banks' behaviour to doubtful credit firms, classified by the use of quantitative indicators and by the intensity of use of the referred indicators

Bank's behaviour (%)		Banks	
		$Q \geq 80\%$	$Q < 60\%$
A. Solved by court	1		
	2		
	3	50	43
	4	33	43
	5	17	
	NR		14
B. Re-evaluate patrimony	1		
	2		
	3	33	29
	4	67	14
	5		42
	NR		14
C. Force monitoring	1		
	2		
	3		
	4	67	14
	5	33	71
	NR		14
D. Contact other banks	1		
	2	67	
	3		14
	4	33	43
	5		29
	NR		14
E. Re-organize the firm with participation of the bank	1		
	2	17	
	3	50	57
	4	33	
	5		29
	NR		14
F. Renegotiate debt	1		
	2		
	3		
	4	67	14
	5	33	72
	NR		14
G. Transform debt into negotiable asset	1	17	
	2	67	86
	3	17	
	4		
	5		
	NR		14

($Q > 80\%$) compared with the banks that have a moderate use of these indicators ($Q < 60\%$) when they analyse doubtful credit.

The most referenced indicator is: 'increase the guarantees' for high risk firms (see table 4, row D). If the class of risk increases, the answers go from 'often used' to 'always used.' Only for firms classified with very low risk is the reduction of the guarantees used more, namely for banks that use preferably quantitative indicators.

Considering now the reduction of interest rate prime (see table 3, row B), there are differences in the attitude of banks towards very low risk firms from those classified with other levels of risk This percentage dropped from 66% (often used or always used) considering very low risk firms, to 33% for low risk firms, considering banks that give high per-

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centage to quantitative indicators (>80%). For banks that give moderate percentage to quantitative indicators (>60%) this percentage is not so significant (from 57% to 50 % considering often used plus always used indicators).

The restriction of credit for higher risk firms (see table 4, row E) is considered by most banks: 100% and 71% (in accordance with more than 80% weight given to quantitative indicators or less than 60%) indicated 'always used' for very high risk firms, decreasing to 67% and 14% for high risk firms.

Financing very low risk firms (see table 3, row C) is chosen by all the banks. Some differences are from very used to used indicators, when considering very low risk firms to low risk firms. There is, however, strong caution of banks in financing businesses. Banks wish to reduce credit to firms with very high risk and even for firms with high risk. However, there are differences of attitude by banks that use more quantitative indicators than those that use less than 60%.

We also observed the relationship between the risk and the need to supervise the firm (see table 3, row A). Reducing the supervision is not clear, even for firms classified as very low risk: nearly half of the responses indicate that the banks do not attenuate the supervision of firms classified as very low risk.

Finally, the willingness of banks to interfere in the management of firms, in case of danger of bankruptcy (see table 5, row E) is not followed by most of the banks that give more than 80% weight to quantitative indicators, but is considered for some banks that give less than 60% of weight to quantitative indicators. All the banks prefer to renegotiate debt in case of bankruptcy risk than to interfere in the management of the firm.

Finally, we analyse the association between risk level and reputation, if reputation is really important in the rating risk of the firm.

We also observed that obtaining a good reputation is a sign of the bank's readiness to consider the firm as low or very low risk (see below table 6, row B). As soon as the risk level increases, less important is reputation in the evaluation. The banks that value less the quantitative indicators (<60%) are those that associate more the reputation of the firm with very low risk.

One main benefit of this sign is the proposal of new products, a higher protection if the firm faces difficulties or a more favourable interest rate for 44% of the banks (see table 7). In conclusion, having a good repu-

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TABLE 6 Banks' behaviour to the reputation of the firm, classified by the use of quantitative indicators and by the intensity of use of the referred indicators

Bank's behaviour face to reputation of the firm (%)		Banks		Bank's behaviour face to reputation of the firm (%)		Banks	
		Q ≥ 80%	Q < 60%			Q ≥ 80%	Q < 60%
A. Reputation is when firm obtains very low risk rating	1			D. Reputation is when firm obtains very low, low, medium risk or one time risk rating	1		
	2				2	83	29
	3	17			3	17	57
	4	67	43		4		
	5	17	43		5		
	NR		14		NR		14
B. Reputation is when firm obtains very low or low risk rating	1			E. Reputation is when firm obtains very low, low, medium risk, one time or many times risk rating	1	33	
	2				2	33	71
	3	17			3	33	14
	4	50	86		4		
	5	33			5		
	NR		14		NR		14
C. Reputation is when firm obtains very low, low or medium risk rating	1			F. Risk and reputation are independent	1	84	71
	2				2	17	
	3	83	71		3		14
	4	17	14		4		
	5				5		
	NR		14		NR		14

TABLE 7 Attitude of the banks to the reputation of the firms by the intensity of use of the referred indicators

Attitude	(1)	(2)
Increase relationship with the firm	81	
Protection in case of temporary difficulties	52	
Favourable interest rate	44	11
Less guarantees	30	11
Less administrative requirements		81

NOTES Column headings are as follows: (1) often used + always used (%), (2) never used + seldom used (%).

tation is important for negotiating credit but not enough to reduce the level of bank guarantees in the contract.

Credit to Household Customers

In the evaluation of credit risk to households, the most used indicators to evaluate credit risk are the credit file of the customer and his present and

TABLE 8 Use of quantitative credit risk indicators by the banks to evaluate household customers, by the intensity of use of the referred indicators (%)

Quantitative credit risk indicators	(1)	(2)	(3)	(4)	(5)
1. Customer account (average balance)				25	75
2. Permanent salary and other revenues				33	67
3. Patrimony*			22	56	22
4. Mortgages		12		44	44
5. Saving accounts and insurances	11	11	33	33	11
6. Failure payments with other banks					100
7. Tax debts	11		11	22	56
8. Amount of the loan				11	89
9. Purposes of the loan				56	44

NOTES Column headings are as follows: (1) never used, (2) seldom used, (3) used, (4) often used, (5) always used. * Houses, firms, shares, and other kind of wealth.

expected revenue. Failure of past obligations of repayment are heavily penalized. The loan is confronted with other indicators related with the customer's wealth and reputation.

The most important quantitative factors in the assessment of credit risk are, in order of importance: Failure with other banks; customer account; stable income; debts to tax authorities:

The most important qualitative indicators in the assessment of credit risk are, in order of importance: permanent employment; reputation and credibility of the client:

Profession and age are equally important though less than the previous indicators. The relationship of the account manager with the client is more or less considered in the evaluation. Marital status and the number of elements of the household are also relatively indicated by some banks.

Consumption level and a more favourable economic conjuncture are the main factors referred by the banks to justify the increase of credit to households.

On other side, favourable interest rates and household revenue are the most mentioned indicators for high demand of credit.

Banks favour credit to households despite the increase of intrinsic risk. Banks have the opinion that the benefits are higher than the risk of credit to households.

For banks, despite some credit risk to households, they have favoured consumption credit and other credit products destined to households.

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TABLE 9 Use of qualitative credit risk indicators by the banks to evaluate household customers, by the intensity of use of the referred indicators (%)

Quantitative credit risk indicators	(1)	(2)	(3)	(4)	(5)
1. Reputation and credibility of the client			22	33	45
2. Relationship of the account manager*	11	22	22	45	
3. Moral integrity and honesty of the borrower			12	44	44
4. Profession of the client			33	45	22
5. Permanent employment				55	45
6. Academic studies of the client	12	22	55	11	
7. Age			44	44	12
8. Reputation and wealth of other members**		13	12	50	25
9. Marital status		11	44	22	22
10. Number of members of the household	11	11	33	22	22

NOTES Column headings are as follows: (1) never used, (2) seldom used, (3) used, (4) often used, (5) always used. * With the client. ** Of the household.

TABLE 10 Factors that contribute to the credit to households, by the intensity of importance of the referred indicators (%)

Factors	(1)	(2)	(3)	(4)
1. Financial liquidity of the banks		50	13	37
2. Competition in banking industry	11	11	44	33
3. Consumption level		11	33	56
4. Favourable economic conjuncture			66	34
5. Economic growth			89	11
6. Government incentives for credit	12	50	38	

NOTES Column headings are as follows: (1) not important, (2) little important, (3) important, (4) very important.

For credit to firms as well to credit to households, banks give more importance to quantitative indicators. However, as a consequence of banking competition, banks have offered new credit products to households and give more weight to some qualitative indicators. They recognize that because of this strategy, intrinsic risk has increased but bank efficiency has not been reduced because of increased risk.

Conclusion

This study explains the indicators considered by banks to analyse the credit risk. Controlling those indicators, they contribute to better effi-

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TABLE 11 Factors that contribute to household demand for credit, by the intensity of importance of the referred indicators 8%)

Factors	(1)	(2)	(3)	(4)
1. Increased wages			89	11
2. Lower interest rates				100
3. Better conditions of credit to younger households	11	33	33	22
4. Offer of credit products		11	78	11
5. Good economical conditions		33	56	11
6. Government incentives to credit	22	45	33	
7. Consumer behaviour		13	75	13

NOTES Column headings are as follows: (1) not important, (2) little important, (3) important, (4) very important.

TABLE 12 Banks' attitude for the demand of credit by household customers

Statement	Answer (%)
1. More credit products have increased household customers, including those that have no possibilities in accordance with previous credit conditions	T 67, F 33
2. Increased demand for credit has led banks to reduce conditions of credit evaluation.	T 22, F 78
3. Increased credits to households have contributed to increasing banking risk	T 55, F 45
4. Despite an increase in intrinsic risk, bank efficiency is not reduced	T 89, F 11

NOTES T – true, F – false.

ciency in the Portuguese banking system. The credit market has registered a strong expansion in the Portuguese economy, where the assessment of credit to households has obtained, in recent years, figures never seen before. Banks use quantitative indicators as well qualitative indicators in the analysis of the credit risk. Banks give more importance to quantitative indicators in the credit evaluation, mainly in credit to firms. In the evaluation of credit to households, qualitative indicators have relatively more weighting in the analysis of assessment of credit. However, even in this segment larger banks prefer quantitative indicators, while smaller ones give more importance to qualitative indicators. The importance of quantitative and qualitative indicators is related with the existence of asymmetries of information. However, asymmetries of information are impossible to totally remove and some qualitative indicators

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gain importance in credit risk evaluation, such as the good reputation for the firm as well for the household. Reputation is not a different value for firms and for households. Despite the fact that for firms, banks consider the kind of business important, for both it is important to signal respect for past compromises. Ethical integrity is important for the managers as well for the head of the household. Moreover, some quantitative indicators are independent from those qualitative ones. For example, the failure of payment of debt with other banks, which is considered a quantitative indicator, also reveals the behaviour and/or reputation of the client.

The intensification of banking competition has led the banks to lower the interest rate and provide more banking products. This situation makes us presuppose that doubtful credit was increasing. However, considering the values of doubtful credit ratios, these have relatively low values (more or less three percent of total credit). Banking seems to be competitive and efficient in creating more products and controlling the risk. However, the economy has expanded until 2007. In a more stagnated economy probably the excess of credit to households would reveal its consequences and credit evaluation should restrain credit. On the other hand, most of the information provided by the banks does not reveal the a real situation of its strategies and its consequences.

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