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The relationship between banks and SMBs: credit rationing

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Abstract: The importance of small and medium business (SMBs) isn't worth justification, they reduce unemployment through creating jobs, they contribute into the dynamization of the national economy and their emergence maybe interpreted by a healthy businesses' ecosystem of the country. Optimization their financing decisions takes a core role in this emergence. Although their development is tribute of many factors which in between the funding.

Contempt their numerical dominance of the Moroccan economic fabric, the contribution of SMBs to the country's real growth remains below expectations, presenting low indicators despite the numerous measures taken by the consecutive governments through the last decades. No significant evolution had been witnessed. The current statistical system is unable to provide a clear picture of the behavior of SMBs, but it is possible to identify the main guidelines for detecting weaknesses in these companies, which form the core of our economy. SMBs lack technical and financial resources, and their human capital often lacks management, training and skills. This often translates into underperformance and a lack of competitiveness in cut-throat competition with large companies. SMBs' weaknesses may also be due to red tape, late payments in public procurement and unfavorable taxation. Financing issues are also very important, and are often cited as one of the main challenges facing SMB development in Morocco. These challenges make it very difficult for SMBs to develop and evolve, pushing them to focus on survival rather than innovation, unlike in developed countries.

Banks are the first interlocutor in many cases when a financial need is expressed either for domestic finance or companies funding. Especially for SMBs that in many cases address banks due to the lack of opportunities or the non-sufficient information got on the multiple funding options. This makes banks by far the main funding option for SMBs when seeking for external funds. Nonetheless, the banks don't answer to all the funding requests they get from SMBs and for the most they always tend to ration the credits or loans they are asked for. Within this work we try to explain bank credit rationing and the forms and interaction of this rationing.

Keywords: Credit rationing ; financial constraints ; managerial and organizational variables ; prudential and accounting constraints ; bank-SMB relations.

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1. Introduction

In all economies small and medium-sized businesses (SMBs) are the first to invoke when discussing was to evolve or to economic growth, irrespective of the quality of the economic fabric in both advanced industrialized countries and emerging and developing economies. They are also synonymous with economic dynamism and flexibility.
They play a particularly important role in bringing innovative techniques and products to market.
On the other hand, their growth and profitability profile is much more irregular and fluctuating than that of larger companies, and their survival rate is lower than that of the latter. What's more, they are at a particular disadvantage when it comes to finding financing.
SMBs encounter difficulties when trying to access financing, which may be due to :

- ✓ The incompatibility of financial products and services,
- ✓ Regulatory rigidities,
- ✓ Shortcomings in the legal framework,
- ✓ A lack of information on the part of both the bank and the company.

Around the world, conventional banks are the primary source of financing for SMBs, so access to bank credit is an essential prerequisite for the development of this sector.
However, banks may shy away from financing certain types of SMB, particularly start-ups and very young companies, which often lack sufficient guarantees, or companies whose activities may offer excellent prospects of profitability, but also carry a substantial risk of loss.
Credit rationing is one of the most common forms of market inefficiency, for example: companies proposing profitable investment projects are refused bank loans, even at high interest rates. As a result, access to bank credit is further restricted.
The problem of rationing can be explained by information asymmetries between lenders and borrowers. Banks decide to ration the quantity of credit they grant, because an action on the interest rate influences the borrower's risk. Indeed, high rates attract riskier borrowers (adverse selection) and encourage them to increase the risk of their projects (moral hazard). This rationing is a consequence of banks' lack of information on borrowers' risks (relationship financing).
This information is both costly to collect and indispensable, so banks set an average interest rate and ration borrowers who appear to be the riskiest. The price adjustment mechanism that balances supply and demand may therefore not occur on the bank credit market. In this work, we are particularly interested in small and medium-sized businesses (SMBs), for which access to credit appears to be more difficult.
There's no denying the vital role played by SMBs in wealth and job creation. Nevertheless, their contribution remains far below the potential that this category of companies can offer.
The development of the capital market can create certain financial advantages for large companies, economic groups and public businesses, but the financial market remains less accessible for SMBs.
Since they can't easily tap into the capital market, SMBs prefer bank financing channels. According to a 2010 United Nations report, total bank credit to the private sector amounted to 468 billion euros, of which some 300 billion (two-thirds) went to businesses.
According to Bank Al-Maghreb's (BAM) Banking Supervision Department, SMBs accounted for just 18% of these loans in 2008[1]. In other words, more than 90% of all loans to businesses only account for 18%. Hence the observation that it's always the SMBs that are overlooked at bank counters.
Through this work we try to explain and answer the problematic question:

Why does banks rationalize the loans accorded to SMBs ?

[1] CDVM, "SMB financing in Morocco", May 2011

Dividing this work, to two main parts. In the first section, we will attempt to comment on the theoretical analysis of our subject by defining the concept of "banking rationing strategy", its determinants and its measures. The second section analyzes the various forms of bank credit rationing applied to SMBs.

2. Bank credit rationing

As mentioned above, credit rationing occurs when the quantity demanded exceeds the quantity offered on the credit market, and the interest rate does not rise to the equilibrium rate. In the theoretical corpus, it has frequently been suggested that this state of affairs is a consequence of certain temporary imbalances or state intervention.
In a first section, our study will focus on bank credit rationing, attempting to explain this phenomenon from the point of view of several authors and by presenting various foreign studies and those carried out in Morocco. A second section will be devoted to determining the main causes of rationing, as well as its measurement.

2.1 Review of previous studies

Several authors have defined credit rationing, but here we will limit ourselves to the definition given by STIGLITZ and WEISS (1981)[2] : "Credit rationing occurs when the borrower is willing to agree to the loan terms established by the lender even though the lender has sufficient resources and the loan is nevertheless refused".
In this way, they propose explanations for the phenomena of credit rationing linked to problems of information asymmetries, rather than to temporary imbalances or government intervention. They develop a model of credit rationing in equilibrium, showing that credit rationing is linked to two phenomena:

- ✓ The opposing selection
- ✓ Moral hazard.

Moreover, in a broader sense, the balance of rationing uses the analysis of credit rationing as the interest rate is kept at its long-term level. The analysis by Stiglitz and Weiss shows that there is no price discrimination on the credit market due to asymmetric information; the reasoning is that the interest rate scares off the least risky and safest borrowers (adverse selection bias); then, a high interest rate encourages borrowers to undertake riskier projects (moral hazard).

2.1.1 Overview of previous studies on rationing

While extensions of the Stieglitz and Weiss model[3] show why credit rationing can occur even for risk-neutral borrowers, and that the number of discouraged borrowers increases under certain circumstances, some argue that credit rationing does not exist. Bester (1985)[4] , for example, argues that credit rationing disappears with collateral requirements. Other research shows how and why credit rationing is negligible or can be eliminated through technology (Parker, 2002[5]). Still others argue that credit rationing is explained by factors such as the over-optimistic behavior of entrepreneurs and the preferences involved in financing decision-making.
Since there is disagreement about the existence of credit rationing in theory, we need to look at the results of empirical studies. Some analyses have attempted to show the importance of the phenomenon

[2] Stiglitz, Joseph E. and Andrew Weiss, "Credit rationing in markets with imperfect information", American Economic Review, Vol. 71, 1981, 393-410.
[3] OP. cited
[4] Bester, H. (1985). Screening vs. rationing in credit markets with imperfect information. The American Economic Review, 75(4), 850-855.
[5] Parker, S. C. (2002). Do banks ration credit to new enterprises? And should governments intervene? Scottish Journal of Political Economy, 49(2), 162-195.

of credit rationing, and the factors that determine it. For example, in the trade credit market, researchers have studied the existence and extent of credit rationing. Berger and Udell (1992)[6] also examine the extent of credit rationing in the US economy.
Both authors have found evidence of credit rationing. Several studies find evidence of credit rationing in consumer credit markets, small business credit markets (Blumberg and Letterie, 2007[7]), and credit markets in developing countries.
We note that the prevailing view in these studies is that credit rationing does indeed exist for small businesses, whose owners are confronted with information problems arising from its asymmetry.

2.1.2 Review of previous studies in Morocco

In 1999, Joumady[8] showed that economic liberalization had reduced credit constraints on companies. On the one hand, he shows that this liberalization has lifted exogenous constraints (rate caps, credit selectivity, etc.) and, on the other, that it has helped to reduce information asymmetry on the capital market. His empirical study focuses on Moroccan manufacturing companies in the formal sector.
Other studies on credit rationing in Morocco have focused on the financing of urban micro-businesses. In 1998, for example, based on a survey of 647 microbusinesses (MEs), Mourji[9] showed that only 4.1% of these businesses had received credit to finance the creation of their activities. She also shows that the majority of MEs (91%) finance themselves with their own funds, as informal credit offers such as pawnbrokers are often too costly. However, in an article published in 200, Bellemare shows that these microbusinesses prefer to finance themselves with their own funds or by taking out loans from family members, for the simple reason that the cost of accessing these forms of borrowing is lower than that of bank credit, since there is no interest or collateral. So, just because a business is not financed by bank credit, this does not mean that bank credit is being rationed.
In 82.5% of cases, the credit application is refused by the bank due to a lack of collateral. For this reason, 33.46% of micro-businesses do not take any steps to obtain credit.

2.2 Causes, detection and measures of rationing

There are many causes of banking rationing, so we'll just mention a few. In this way, we'll know how to detect and measure rationing.

2.2.1 The various causes of rationing

The causes of rationing are numerous, among which we can mention :

- ✓ Increased competition in the credit market,
- ✓ Financial crises,
- ✓ Economic recessions,
- ✓ Application of the Basel II recommendations concerning the calculation of scores for credit decisions and capital ratios.

The Basel Committee's aim is to reduce risk in the credit market, but the application of scores when making decisions under the Basel II guidelines changes the way the credit market operates, leading to

[6] Berger A. and Udell G.F., 1992, "Some evidence on the empirical significance of credit rationing", Journal of Political Economy 100 (5), pp. 1047-1077.
[7] Blumberg B. and Letterie W., 2007, "Business starters and credit rationing", Small Business Economics, forthcoming.
[8] O.Joumady ; 1999 ; Revue Région et Développement : " libéralisation financière, rationnement du crédit et investissement des entreprises marocaines ".
[9] F.Mourji; 1998, "le développement des micro entreprises en question".

credit rationing (Slijkerman, Smant and De Vries, 2004)[10]. Banks will try to minimize the risk incurred, agreeing only to grant credit to the least risky borrowers and rationing other borrowers. In addition, under the Basel II requirement for capital reserves to be commensurate with the risk incurred, these banks adopt a rationing strategy to avoid wasting available capital.

Financial crises and/or periods of underinvestment are other causes of rationing. Indeed, market imperfections limit the availability of credit to SMBs (Beck and Demirguc-Kunt, 2006)[11] In such circumstances, the granting of credit may be affected by the prudence of banks or by the general level of risk. During a financial crisis, banks become more cautious about granting loans because of potential solvency problems and the fact that the overall level of risk on the market is increasing. New borrowers who are usually below the rationing limit will find themselves in the risky category and will be rationed. During periods of economic recession, rationing is more widespread, credit applications are increasingly rejected and the probability of obtaining credit declines. Borrowers do not have the power to grant themselves credit (Zazzara, 2008)[12]. It therefore makes sense to understand the credit decision-making process.

2.2.2 Breaking down the credit decision

When making the decision to grant credit, the banker must break down his decision into two stages:

- ✓ Decide whether or not to give credit
- ✓ Decide how much to grant (Craig and Hardee, 2007)[13].

2.2.2.1 The award decision

When we talk about credit decisions, we usually think only of the final decision to grant credit. Some authors focus on information problems, as borrower opacity and asymmetric information are the determinants of this decision. Rationing stems from imperfect ex-ante information on the default risk of potential borrowers (Godlewski, 2004)[14].

Credit is seen as an inseparable whole, which is why banks are categorical and inflexible when it comes to this decision: they either accept or refuse to grant credit (Lobez, 2006)[15].

2.2.2.2 Deciding on the amount granted

The credit amount can be taken into account in one of two ways:

- ✓ The bank can integrate the calculation of the cost of processing information into its decision-making process, so the larger the loan amount, the less the costs influence decision-making. For

[10] Slijkerman J. F., Smant D. and De Vries C. G, 2004, "Credit Rationing Effects of Credit Value-at-Risk", Tinbergen Institute Discussion Paper Erasmus University Rotterdam and Tinbergen Institute, March 12,

[11] Beck T. and Demirguc-Kunt A., 2006, "Small and medium-sized enterprises: access to finance as a growth constraint", Journal of Banking and Finance, 30, November, p. 2931-2943.

[12] Zazzara C., 2008, "Determinants of Credit Rationing for Manufacturing Firms Any Potential Effects from Basel 2?" Journal of Entrepreneurial Finance and Business Ventures

[13] Craig S. G. and Hardee P., 2007, "The impact of bank consolidation on small business credit availability", Journal of Banking and Finance 31 pp. 1237-1263.

[14] Godlewski C., 2004, "The role of the nature of information in banking intermediation", Finance 0409029, EconWPA.

[15] Lobez F. and Vilanova L., 2006, "Microéconomie bancaire", Presses Universitaires de France.

example: lending 100 Euros 1000 times does not generate the same costs for the bank as lending 1000 Euros 100 times (Lobez, 2006)[16].

This consideration of costs has also been addressed by other authors, such as Berger and Frame (2005)[17], who point out that the growth in the availability of credit for SMBs is due much more to the reduction in the costs of using scores than to the reduction in opacity. Smaller credits tend to have higher prices than larger ones to cover the costs of processing the decision.

The second explanation for the influence of the amount of credit in decision-making may result from the application of the Basel II accords. Under these agreements, banks must set the amount of capital to be granted at the start of the year, in order to comply with regulatory capital reserve ratios (Slijkerman, Smant and De Vries, 2004)[18]. As a result, they are forced to ration loans that exceed their forecasts. The application of score-based models under the new Basel II Accord is changing the credit transaction. Large companies tend to be more rationed under these new arrangements, as they will generally request larger amounts that weigh more heavily on the regulatory capital required (Ziane, 2004)[19].

2.2.3 Detecting and measuring rationing

When SMBs find themselves rationed, they more often than not resort to other, more costly means of financing, so this criterion can be used to detect rationing, but not always. We therefore need to know how to measure the extent of rationing, which is not easy.

2.2.3.1 Ration detection

The existence of rationing is linked to the refusal to grant credit. We distinguish two types of rationing:

- ✓ Rationing of all credit
- ✓ Partial rationing.

The latter occurs when the bank agrees in principle to grant credit, but refuses to give the full amount.

To detect rationing, we turn our attention to the borrowers themselves. A firm is considered to be rationed if it has been refused credit for all or part of the amount requested (Scott, 2006,)[20], or if it has turned to another financial institution to obtain credit at prices higher than those charged by the banks. In other words, we can interpret recourse to a more expensive source of financing as the result of rationing the main source of financing.

2.2.3.2 Rationing measurement

A few authors have attempted to present indices of rationing measures, although banks are generally not interested in the numbers of rationed borrowers or the amount of credit requested (Keeton, 1997).

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[16] Op. cit.

[17] Berger A.N, Frame. W.S, Miller. N.H (2005), "Credit Scoring and the Availability, Price, and Risk of Small Business Credit", Journal of Money, Credit and Banking, Volume 37, Number 2, April, p. 191- 222.

[18] Op. cit.

[19] Ziane Y., 2004, "Structure financière, relations bancaires et financement interentreprises des PME françaises", PhD thesis in Management Sciences, Université Paris X- Nanterre, France.

[20] Scott J., 2006, "Loan officer turnover and credit availability for small firms", Journal of Small Business Management, vol. 44, p. 544-562.

Companies rationed by the banks find themselves obliged to seek financing from other financial institutions.

We propose here to measure rationing in two ways:

- ✓ A rationing measure for firms (the number of times a firm has been rationed and the amount of credit refused)
- ✓ A rationing measure for banks (the rationing rate for loan applications).

For firms, counting rationing is easy. Based on the definition of rationing presented earlier, it's simply a matter of counting the number of times a firm has resorted to a more expensive source of financing to find the number of times it has been rationed. (Bodt, Lobez and Statnik, 2005)[21].

For banks, measurement is more complex, as they are not interested in rationed applications, and therefore do not hold data on them. Some authors have tried to find ratios to measure this rationing: Lobez (1988)[22] has taken up a measure which assumes that rationing can be measured by a difference between aggregate supply and aggregate demand for credit, but since banks are not interested in the total volume of demand, the measurement of total demand is not observable.

The same authors presented another measure in the form of a ratio: the H ratio.

The numerator of this ratio represents the difference between the volume of loans granted to borrowers threatened by rationing and the total volume of loans granted. The result is divided by the total volume of loans granted. For this ratio, we have assumed that borrowers are divided exclusively into two categories: the non-risky and those threatened by rationing.

As this measure has evolved, the authors have proposed another ratio: the H1 ratio, represented by the division of the supply of credit granted to the threatened by the sum of the supply of credit granted to the threatened and the supply of credit granted to the non-threatened.

To conclude, we have attempted to reveal the different interpretations of bank rationing, and from these different analyses we can say that the origin of an equilibrium credit rationing situation was only really brought to light in the early 1980s by Stiglitz and Weiss (1981)[23].

Joumady's study[24] showed that economic liberalization has contributed to a reduction in information asymmetries, while Mourji's study[25] on medium businesses revealed that a credit application refused by a bank is due to a lack of collateral, hence the existence of bank credit rationing.

In conclusion, rationing is a solution adopted by banks to cope with excessive risk-taking and to avoid under-rewarding these loans. It can be considered either a choice or a constraint, depending on the cause that generated it. We also found that credit rationing is just as difficult to assess.

[21] De Bodt E., Lobez F. and Statnik J., 2005, "Credit rationing, customer relationship and the number of bank: An empirical analysis", European Financial Management, vol. 11, p. 195 - 228.
[22] Lobez F., 1988, "Le rationnement du crédit : une synthèse", finance, vol. 9, N°2.
[23] Op.cit.
[24] Op.cit.
[25] Op.cit.

In order to clarify it further, we will try to explore the diverse types of loans rationing to SMBs in the following parts of the article.

3. Forms and interaction of rationing

In view of the difficulties encountered by SMBs in obtaining credit, due to banks' lack of knowledge of their operations, we need to identify the various forms of rationing practised with regard to these firms, manely:

- ✓ Rationing is the result of a bank's strategy in the face of risk, containing preventive rationing considered as a key to the stability of the banking system (Ziane Y, 2003)[26] ,
- ✓ And the rationing imposed by capital or the measures proposed by the Basel II committee is influencing the freedom to grant credit.

The structure of this section is very simple:

- ✓ In the first paragraph, we will highlight the various types of rationing practiced by banks with regard to SMBs,

In a second section, we'll look at how SMBs and banks react to this rationing.

3.1 The different types of rationing

Rationing may be a reflex on the part of banks to adapt to environmental requirements. Regulations and changing economies symbolize the most significant variables likely to duplicate each other on the level of rationing.

Based on the two main variables: We can differentiate the management of their customer portfolios and the banks' risk attitudes as follows.

- ✓ Risk-based rationing
  - Preventive rationing
  - Rationing based on capital
- ✓ Rationing based on customer portfolio management
  - Rationing by number
    - Rationing of a specific borrower
    - Rationing an entire risk class
  - Quantity rationing

3.1.1 Risk-based rationing

Rationing can be accentuated by a shortage of bank capital, but it can also be the result of risk-averse behavior on the part of borrowers (Biais B. and Gollier C., 1997,)[27].

[26] Ziane Y., 2003, "Number of bank and credit relationships empirical results from French small business data", European Review of Economics and Finance, vol. 2, p. 32-48.

[27] Biais B., Gollier C. (1997), "Trade credit and credit rationing", *Review of financial studies*, Vol.10, 903-937.

3.1.1.1 Preventive rationing

When banks realize that they have run significant risks, they take preventive action by taking the initiative to react and reassure the latter by aligning themselves with the general level of the market by ceasing to grant loans. This type of rationing is known as preventive rationing.

This rationing is rooted in economic recessions and financial crises, as they unleash the risk of debtor insolvency. Banks rebel to avoid and control the snowball effect of credit defaults piling up.

In an imperfect market the volume of credit available to a borrower is less than that available to the same borrower in a perfect market (Sharpe S. and Nguyen H., 1995)[28].

In a perfect market, banks lend to companies willing to pay at least the marginal cost of credit.

On the other hand, in imperfect markets, small banks have more loans because large banks have the ability to distort market imperfections and avoid the additional costs associated with reducing information asymmetry. Assigning a rating in response to an increased probability of default is a rational decision and essential to the stability of the banking system (Ziane Y., 2003,)[29].

To complete this type of distribution study, we introduce the effect of time in credit management.

Borrower regulation may be temporary or permanent: if it is temporary, it is short-lived; if not, it is long-term. After applying for the first standardized credit, the company may establish a relationship enabling it to take out subsequent credits, in which case rationing can be said to have been temporary (Carling K. and Lundberg S., 2005)[30].

3.1.1.2 Rationing constrained by capital

Some banks may choose the alternative of preventive rationing out of concern for risk, while others will take advantage of it to earn more by taking on more risk. This behavior can lead to the fragility of the banking system, and even the least risky banks can be affected.

The Basel II committee has proposed new measures to reduce this behavior. It has encouraged banks to put a proportion of their capital into reserves, in line with the risk incurred. This requirement has weighed heavily on the freedom to grant credit, since, in theory, banks must stop lending if they exhaust their available funds.

The reduction in credit supply is imposed on the banks to satisfy the capital requirement. This forced rationing does not depend on the banks' prudential strategy, and results in arbitrary, non-strategic rationing. For example, banks may ration good borrowers because they can no longer grant loans, while other, riskier borrowers are granted loans because they applied earlier.

[28] Sharpe S. and Nguyen H., 1995, "Capital market imperfection and the incentive to lease", Journal of Financial Economics, vol. 39, p. 271-294.

[29] Op.cit.

[30] Carling K. and Lundberg S., 2005, "Asymmetric information and distance: an empirical assessment of geographical credit rationing", Journal of Economics and Business, vol.57, p.39 59.

However, the rationing of credit-worthy borrowers can be detrimental to the general level of economic activity (Biais B. and Gollier C., 1997,)[31].

3.1.2 Rationing based on customer portfolio management

This distinction is based on the banks' management of their customer databases. We have rationing by number and rationing by quantity: the result of breaking down the credit decision.

As we saw earlier, a credit decision can be broken down into two stages: the first allows us to decide whether to grant credit, and the second allows us to set the amount to be granted according to the borrower's situation. On the basis of this decomposition of rationing, we consider rationing by number and rationing by quantity.

3.1.2.1 Rationing on numbers

Rationing on numbers means refusing to grant credit to borrowers deemed risky or unprofitable. But in this case, we make no distinction between total or partial rationing: credit must be totally granted or totally rationed. This type of rationing is an immediate reaction to the opacity of borrowers.

It can generate macroeconomic risks if banks are unable to distinguish between risky and non-risky borrowers. In this case, rationing good borrowers can lead to a period of under-investment.

It makes even more sense to differentiate between rationing specific customers or entire risk classes. Rationing may concern an individual in a group, or an entire risk group (Lobez, 1988)[32].

3.1.2.1.1 Rationing a specific borrower

A specific firm may be rationed, while other borrowers identical to it benefit from bank financing. Rationing a specific borrower is a way of certifying that this customer represents a higher risk than that accepted by the banks.

To judge whether customers are being rationed on an individual basis, we need to be reassured that the bank has not reached unacceptable risk thresholds or budgetary constraints, and that the borrower does not belong to a risk class deemed threatening by the bank.

This type of rationing is referred to as Type A rationing. Well-determined firms may be rationed in the short term, yet they can take advantage of credit after establishing a credit relationship with their banks, showing that they are not dependent on their risk class (Levenson and Williard, 2000)[33].

3.1.2.1.2 Rationing an entire risk class

The most cautious banks will try to set a risk limit that must not be exceeded. This barrier stands in the way of all firms belonging to a risk class higher than the limit set by the bank, and prevents them from obtaining the credit they have applied for. This is known as "red-lining" or type B rationing. Firms in

[31] Op. cit.
[32] Op. cit.
[33] Levenson. A. R, Williard. K (2000), "Do Firms Get the Financing They Want? Measuring Credit Rationing Experienced by Small Business in the U.S", Small Business Economics, Volume 14, Issue 2.

this category are considered the least profitable and/or riskiest, which is why the most rationed firms are the smallest.

Credit refusal is negatively related to firm size, suggesting that rationing is less important for larger firms (Levenson and Williard, 2000)[34]. However, the riskiest and largest firms are more exposed to rationing, since under Basel II, capital losses in the event of default are significant.

3.1.2.2 Quantity rationing

Banks fearing the loss of their customer base adopt quantity rationing.

This type of rationing is essentially characterized by the fact that banks may grant all the loans requested by their customers, but only give part of the amounts requested to some of them. With this strategy, banks try to satisfy all their customers.

As a result, we can say that a bank can ration both the amount of loans and the number of borrowers. This coexistence is the result of complementarity between these two forms of rationing.

3.2 Consequences and reactions of SMBs and banks to rationing

Banks and other traditional sources of credit may decide that SMBs represent a higher risk than larger companies, and respond by charging a higher interest rate. SMBs then find it more difficult to borrow than larger companies, and may even be unable to borrow at all because the cost of credit is too high.

If these entrepreneurs can't access financing through traditional channels, they may not launch their businesses or they may close them down, which would be a potential loss for the economy. But the other danger is that they may turn away from official mechanisms altogether and operate in the informal economy, dodging taxes and regulations in the process, which is a brake on economic growth and job creation.

Banks are indirectly affected by these problems. To solve this rationing problem,banks need to reduce information asymmetry by distinguishing between different types of borrower.

3.2.1 SMB reactions to rationing

SMBs will act to circumvent rationing and find a new source of financing. They may approach different banks (De Bodt et al, 2005)[35]. SMBs considered opaque must seek financing from different banks. This search can provide SMBs with an escape route from any strategy of domination by the lending bank (Berger et al, 2002)[36].

3.2.2 Bank reactions to dodge rationing

Credit rationing is the result of asymmetric information and the bank's refusal to assume a risk that is not remunerated by the interest rates charged. Indeed, banks that do not accept under-remuneration for

[34] Op. cit.
[35] Op.cit.
[36] Berger A. and Udell G. F., 2002, "Small Business Credit Availability and Relationship Lending: The Importance of Bank Organisational Structure", Forthcoming, Economic Journal.

the risk incurred, decline loan applications. Rationing out borrowers who deserve credit can lead to economic problems, as these borrowers find it difficult to make their investments.

Reducing information asymmetry can be achieved by establishing a lasting relationship between banks and their customers. This relationship enables banks to better monitor the situation of their customers, thus avoiding any "*adverse*" selection.

To reduce rationing, banks identify borrowers through contract menus, resulting in self-selection (Bester, 1985)[37] and/or offsetting losses on loan interest rates with service-generated income (Park, Brandt and Giles, 2003)[38].

3.2.2.1 Identifying borrowers through contracts

We examine whether the best strategy is to lend to the best borrowers at a lower interest rate or to lend to the worst borrowers at a higher interest rate (Park, Brandt and Giles, 2003)[39].

This identification involves presenting different credit options to customers. These options are different types of contract, based essentially on the progressive replacement of the value of the collateral by the interest the customer is willing to pay. The combination of these two variables enables the banker to evaluate the borrower's participation in the project and the assessed risk.

Simultaneous measures of interest and guarantees enable banks to identify potential borrowers and offer them suitable contracts, which tends to alienate rationing from the market (Lobez, 1988; Bester, 1985)[40].

These contracts are called incentive contracts in the sense that the least risky borrowers are encouraged to choose a contract with a low interest rate and a fairly high value guarantee, while the riskiest borrowers are encouraged to choose contracts with the most expensive interest rates but lower guarantees.

However, this solution still depends on the bank's ability to segregate borrowers. Without this distinction, the implementation of this strategy is ineffective, and the different types of contract no longer prevent regulation (Chan and Thakor, 1987[41] ; Lobez, 1988[42]). However, banks sometimes find it difficult to strike a balance between a clientele dominated by banks that benefit from "soft" information and a clientele of higher quality but benefiting from other sources of financing (Ariccia and Marquez, 2004)[43].

[37] Op.cit.
[38] Park A., Brandt L. and Giles J., 2003, "Competition under credit rationing: theory and evidence from rural China" Journal of Development Economics, 71, pp. 463- 495
[39] Op.cit.
[40] Op.cit.
[41] Chan Y. and Thakor A., 1987, "Collateral and competitive equilibria with moral hazard and private information", Journal of Finance 42(2), pp. 345-363.
[42] Op.cit.
[43] Dell'Ariccia. G. and Marquez. R., 2004, "Information and bank credit allocation", Journal of Financial Economics, 72, pp. 185-214.

3.2.2.2 Services offered

Increasingly competitive interest rates on the credit market are forcing banks to look for other solutions to maintain operations while being protected against risk undercompensation. The solution to this problem can be seen as a service offering whose remuneration is essentially based on commissions and fees that are independent of loan interest. Banks can compensate for lost interest income with revenues from related activities, such as credit advisory services (Allen and Peristiani, 2007)[44].

Underpayment of loans can encourage the creation of advisory services. The provision of services is an important factor in lowering the interest rate, as the bank accepts a lower return on its lending operations in return for the realization that the provision of services increases in return. In general, under-compensation of risks enables the development of several other services in addition to advisory services. However, developing such services requires a number of changes.

Deregulation of the banking sector has enabled banks to offer new services to profitable SMBs whose loans are considered unprofitable. In this way, banks are able to compensate for unreasonable risks with non-interest income from these new activities.

Banks are migrating from traditional intermediation and brokerage activities to new ones. They see credit as additional income rather than compensation for risk (De Young and Roland, 2001)[45].

To sum it all, we have presented preventive rationing and forced rationing. These two categories are distinguished by the banks' reaction to risk amplification. The most cautious banks adopt preventive rationing to control risk-taking, while those who prefer to earn more by taking on more risk are faced with the regulatory ratio. The decomposition of the credit decision has enabled us to differentiate between quantity rationing and number rationing.

We have also outlined alternatives to rationing to solve the problem of excessive risk-taking not remunerated by interest rates.

4. Conclusion

Few studies have addressed this definition of credit rationing. In most cases, credit rationing is erroneously associated with any difficulty in accessing credit caused by the rising cost of debt, a high level of collateral required by the financier, or rigid contractual clauses.

When a borrower refuses a credit offer because the contractual clauses do not suit him, this is not a situation of equilibrium rationing as defined by Stigliz and Weiss (1981)[46]. It is when the bank refuses to lend despite the borrower's good creditworthiness that we can speak of credit rationing.

[44] Allen L. and Peristiani S., 2007, "Loan under pricing and the provision of merger advisory services", Journal of Banking and Finance N° 31, p. 3539-3562

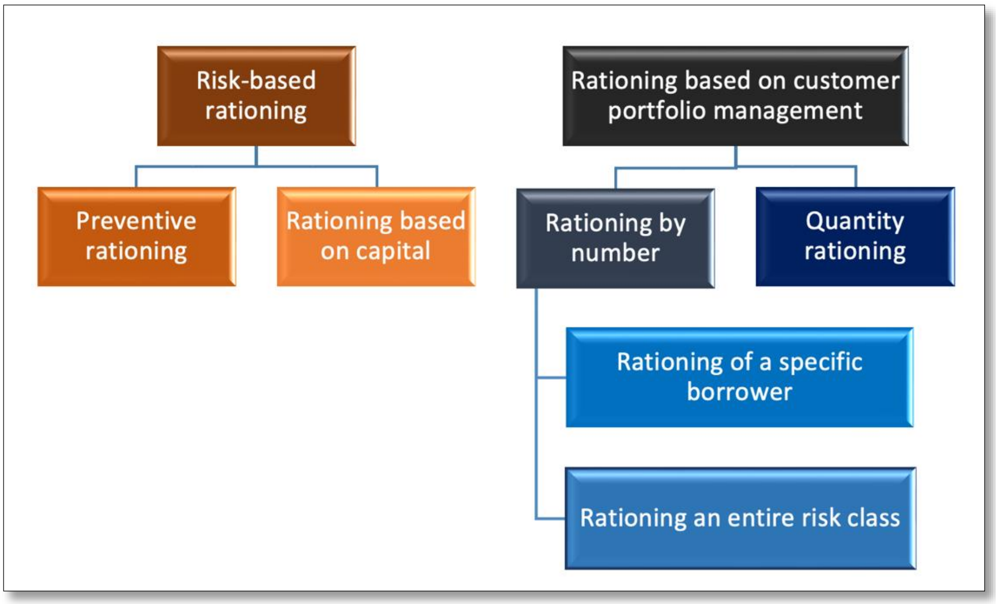
[45] De Young R. and Roland K., 2001 "Product mix and earnings volatility at commercial banks: Evidence from

[46] Op.cit.

On the whole, the few studies that we consider to be robust suggest that there are relatively strong SMB rationing constraints in Morocco, even if it is difficult to determine their origins and extent with any certainty.

Despite this, we have tried in our research to combine the various studies on bank credit rationing for SMBs carried out in Morocco and in other countries.

To sum up, we have identified the different types of rationing that an SMB can suffer, and which can be represented as follows:



Source : Compiled by us

Figure 1. Types of rationing.

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