The financial information in the credit market for micro and small businesses, in underdeveloped regions

La información financiera en el mercado del crédito para micro y pequeñas empresas en una región subdesarrollada

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Abstract

This research analyzed the role that financial information plays in the access to external financial resources for micro and small manufacturing businesses (MiSBs) in Tabasco, Mexico. There of it was implemented an inquiry aimed to this type of businesses as borrowers of funds. The chi-square test led us to the conclusion that the lack of information has propitiated that the financing for the MiSBs had been mainly from informal sources. The loans mixtures obtained have not been sufficient to realise the MiSBs investment projects, this credit rationing from the bank system, has been one of the main obstacles that MiSBs have had to modernize themselves and to become more competitive. This paper is the first part of a major research upon the credit market of MiSBs in Tabasco, Mexico, which also involves the analysis of the sources of loans in this market.

Keywords: credit market, micro/small businesses.

Resumen

Esta investigación analiza el papel que la información financiera juega en el acceso a recursos financieros externos para las micro y pequeñas empresas manufactureras (MIPYMES) en Tabasco, Mexico. Para lo cual se levantó una encuesta dirigida a este tipo de negocios como demandantes de fondos. La aplicación de la prueba de la Ji cuadrada nos llevó a la conclusión de que la carencia de información ha propiciado que el financiamiento de las MIPYMES haya sido principalmente de fuentes informales. Las mezclas de financiamiento obtenidas no han sido suficientes para realizar los proyectos de inversión de las MIPYMES, este racionamiento del crédito bancario ha sido uno de los principales obstáculos que han tenido para modernizarse y volverse mas competitivas. Este ensayo es la primera parte de una investigación mayor sobre el mercado del crédito de las MIPYMES en Tabasco, Mexico, que incluye también el análisis de la oferta de fondos en este mercado.

Palabras clave: mercado del crédito, micro y pequeños negocios.

1. Introduction

It is well known that the micro and small businesses (MiSBs) play a very important role as far as the number of establishments they represent, the employments they generate and its contribution to the gross do-mestic product (GDP) all over the world, importance that increases as the size of the economy grows (World Bank, 2003: 29-30).

Latin America and Mexico reply the situation described above, with the aggravation that the MiSBs sector, suffers from serious deficiencies. Those are: techno-logical delay, disadvantages in the access to inputs markets and final consumers, little use of modern technologies for management, commercialization and quality control deficiencies, difficulties in the access to institutional loans, significant lack of relevant financial information, and precarious and marginal integration to productive chains.

Ruiz Duran, C. **(**2002a; 11, 13) found in the Mexican economy, that the manufacturing micro-enterprise only generates an average of 3,775 US dollars per month by occupied man; however, the large company generates 21,469 dollars mon-thly, 5.7 times more. The exporting effort that has required the current growth model in Mexico has been realised mainly by medium-sized and large companies of the region during the past three decades. On the other hand, participation of the micro and the small businesses in the total exports amount has been below 10 percent.

The World Bank (2001), the Inter-American Development Bank (2005) and the National Institute of Statistic, Geography and Informatics of Mexico, (INEGI: 2003) have realised researches in this sector of businesses. All of them conclude that one of the obstacles more frequently faced in theirs development is the access to bank financing, which in some regions of Mexico like Tabasco, have become more serious from the mid ´90 up to the moment when this research was realised.

One possible explanation for this obstacle is the asymmetry of financial information between the formal actors in the financing process, let say the credit formal-sources and the MiSBs. Thereof the central theme of this paper was to analyze the roll that relevant information plays, if any, in the access to loans for the industrial MiSBs in an underdeveloped region of Mexico.

The low value added by man occupied, that in average generate the majority of the MiSBs in Mexico, has a consequence on theirs dynamics of growth (Ruiz Duran, 2002b: 23-24). They do not generate a sufficient margin of savings to reinvest and so they are not in possibility to acquire modern techniques that facilitate them to become more efficient, competitive and to grow, thus remaining in the same level of stagnation, their existence is so threatened. So far the MiSBs have been constituted the productive base of the poverty (Ruiz Duran, 1995:24-25), thereby the requirement of external financing to break that vicious circle. Up to 2004 in Tabasco, more than 98 percent of the 44, 243 businesses registered in the INEGI's economic census, were MiSBs (Table 1).

2. Theoretical framing

George Stigler (1961: 69) was one of the forerunner economists to stand out that economic information is not a free good in the market as the classical school on microeconom-

ics supposed. Moreover, the information is a limited good, it is difficult to grasp sometimes, and it costs time and money to obtain it.

Stigler set up almost half century ago, that even though it is clear that the information is a valuable resource, in economics it had been taken for granted that it was a free commodity: the best technology was assumed to be well known, the consumer preferences were also well known, and so on. He established that some important aspects of the economy organization, acquire a new meaning when they are consider from the point of view of the cost of the information search.

The price of a good or service (including the financial services) varies widely and frequently, even though they were homogenous in quality; dispersion of prices that we could consider as a manifestation of the ignorance (lack of information) of the participants in the market. If the dispersion of the sale price of the good or service is large, (in our case the interest rate of the different sources, from the moneylenders up to *tandas[1]*) it would be worthwhile to search several options, (different banks and financial Government programs) before making the purchase (to contract the loan). The awaited savings would tend to be higher. The same is applied when the relative amount of the loan increases in proportion to the business budget.

For MiSBs loans demanders, the alternative cost of looking for the information on financial services would be equal to the working hours that would dedicate to this search. Other direct costs should be added such as expenses in transportation and the amount of sales that the entrepreneur would lose during the time that he would be visiting the banks officers or lobbing the governmental programs.

Table 1. Size distribution of businesses in the state of Tabasco, Mexico						
Size	**Micro**	**Small**	**Medium**	**Large**		
Sector/Employments	**Up to 10**	**From 11 to 50**	**From 51 to 250**	**From 251 up**	**Total**	**Percent distribution**
Farm Industries	653	4	2	2	661	1.49%
Manufacturing industries	2828	18	10	4	2860	6.46%
Apparel industries	41 8	3	2	0	423	0.96%
Construction firms	502	3	2	1	508	1.15%
Commerce firms	22563	1287	330	44	24224	54.75%
Hotels and restaurants	4234	61	19	15	4329	9.78%
Transportation and comunicattion businesses	421	6	2	1	430	0.97%
Service businesses	10570	152	48	38	10808	24.43%
Total	42189	1534	415	105	44243	
Percent distribution	95.36%	3.47%	0.94%	0.24%		

Source: INEGI 2004, Economics census.

1. "Tandas": Is a sort of rotating credit association among a group of ten or eleven well acquainted persons (friends, familiars, etc.), where each one save periodically, in a common purse, a fixed amount of money, which in turn is granted to each one of the group according to a roll list previously scheduled.

Other authors went further on the analysis of the roll of financial market information, adding that it is of difficult interpretation for the users. The grasping of information affects in a significant way the good quality and better price of the product obtained.

Chang and Hanna (1994: 207-227), suggested that in the actual complex financial market, the cost of information search could be much greater for the money borrowers than for the buyers of common goods. The financial technical terms are difficult to understand for many applicants. Moreover the costs of financial services could not be completely disclosed until the application for a loan is made.

Stiglitz J. and Weiss A. (1981: 393-402), demonstrated mathematically, that in order to reduce the probability of losses from "the bad" loans, it can be optimal for bankers to ration the volume of loans instead of raising the interest rate, as it would be indicated by the logic of the perfect competition market.

Joseph Stiglitz (2001) established that the financial information asymmetry, negatively affects the efficiency of the credit markets originating adverse selection and moral hazard problems that lead to credit rationing from the bank intermediaries.

Joseph Stiglitz and his numerous co-authors, repeatedly have established that the economic models can lead to erroneous conclusions if they ignore the information asymmetries. The common statement of theirs essays is that under the perspective of the asymmetric information, many markets take an appearance completely different, just as the conclusions about the appropriate forms of regulations of the economy from the public sector. Opposite to classic microeconomics theory, they conclude that markets tend to inefficient equilibria.

3. Methodology

3.1. Development of Hypothesis

Based on the literature overviewed and to focus attention on the role that relevant information plays out in the financing to this type of businesses, we proposed the following working hypothesis based upon the asymmetric information theory: "For traditional manufacturing MiSBs in Tabasco, the frequency of access to loans from a type of financial source depends on the frequency of good information that the businesses know of the loans conditions from that source. The low degree of good information known has propitiated that the MiSBs have financed themselves with inadequate loans mixtures."

The research questions established were:

1. Which ones have been the main financial sources of the MiSBs of manufacturing activities in Tabasco in the lapse of analysis?

2. How is the degree of information that manufacturing MiSBs of Tabasco know on the loans conditions (rates, repayment terms, amounts, requirements) that offer the different financial sources which are available in theirs markets places?

3. Has the knowledge of good information on the loans conditions of manufacturing MiSBs of Tabasco significantly influenced in the type of loans granted?

4. Are the loans mixtures obtained by these MiSBs suitable as far as sufficiency, opportunity and cost?

5. Is the financing granted by the banks to those MiSBs suitable as far as sufficiency, opportunity and cost?

6. What kind of actions could be taken, from the point of view of the information flow, to make more suitable (accessible, opportune and sufficient) the formal loans to the MiSBs of manufacturing activities in Tabasco?

3.2. Statistical procedure

In order to test the working hypothesis and to answer the research questions mentioned, it was drafted a representative sample of mature MiSBs (four years old or more) of the Manufacturing sector of the State of Tabasco, Mexico, to be analyse focusing attention on those economic classes that had maintained larger presence within this sector, as far as number of establishments and employment generation regards (according to INEGI's 1999 economic census). In spite that the survey was carried out in early 2007, we took the 1999 economic census as sample frame, instead of the 2004 census given the strong mortality rate of MiSBs during the first four years of operation. Therefore the businesses interviewed in 2007, were those from 1999, that had passed the threshold of the high mortality rate, and consequently the findings, results and conclusions could have a better degree of structural validity.

The sample was selected through stratified systematic random sampling; the strata were conformed by each one of the seven economic classes that were analyzed: Chocolate factories, Carpentry workshops, Blacksmith workshops, Ice cream factories, Bread and Cakes factories, Cheese factories and Apparel workshops.

We tested the data-collecting instrument on a pilot sample and found that the proportions for the key issue were p=.75 for MiSBs financed only from non bank loans and q=.25 for those MiSBs which do had obtained bank loans. We applied the variance proportions founded, in the formula used to quantify the sample size.

The size classification criterion for the MiSBs was that of the number of employments generated; Micro-enterprises were considered those that generate up to 10 employments and small enterprises those which generate from 11 to 50 employments.

Table 2. Number of interviews with managers and/or owners of MiSBs in the state of Tabasco

Economic Class	Number of establishments	Percent in the selected set	Theoretical Affixation	Non-response increase	Final Result of the Survey
Total manufacturing establishments	4,153[a]				
Subtotal of selected classes	2,322[b]	100.00%	131	158	133
Blacksmith workshops	697[b]	30.00%	40	42	35
Carpentry workshops	671[b]	29.00%	39	40	33
Bread and cakes factories	321[b]	14.00%	18	19	14
Clothes workshops	437[b]	19.00%	25	26	22
Chocolate factories[c]	54[b]	2.00%	2	11	9
Cheese factories	26[b]	1.00%	1	8	8
Ice cream factories	116[b]	5.00%	6	12	12

Source: own development with data from:
a. INEGI 1999 Economic census without subsector 35: petrochemicals and derivatives.
b. Updated according to 2002 directories of CANACO; CANACINTRA and related studies.
c. All the chocolate factories formally established (11) were taken into the sample in order to make an analysis in depth and, therefore, the fixation of the sample between the strata was modified to assign a greater number of surveys to the Chocolate Factories stratum.

An index of financial eligibility based upon the criteria of the most important banks of the place was applied to each one of the 133 MiSBs of the sample, to determine if the MiSBs met the requirements to be subject of loans or not, and a set of eligible ones was founded.

The suitability of the financial mixtures obtained was evaluated from the point of view of sufficiency, timing and alternative costs. The financial sources for MiSBs of the industrial sector of Tabasco were grouped in seven categories due to their similar characteristics: 1.-Suppliers, 2.-"Tandas", 3.-Relatives, 4.-Moneylenders and Pawnshops, 5.-Bank Intermediaries (IFB), 6.-Government Programs, 7.-Partners and Clients; and they have been ranked according to the frequency of loans granted to the MiSBs.

The outstanding characteristics of the loans granted considered were: interest rate, loans amounts, repayment terms, and guaranty proportion to the loan, lapses of delivery of the resources, proceedings, proceedings costs, and additional requirements to access the loan.

To calculate the size and composition of the sample we used the following formula (Rojas Soriano, 2000: 304).

$n = Z^2 * q / E^2 p /(1+1/ N[Z^2q / E^2 p -1])= 133$
Where:
- Z: 96 percent confidence interval.
- E: 10 percent.
- N: Is the 1999 economic census population of traditional manufacturing MiSBs selected = 2322.
- p: MiSBs proportion that had been financed only by non bank sources.
- q: MiSBs proportion that had received bank loans.

The statistical test selected was the Chi- square (Mendez I. 2001, pp. 131-134). The total sample size was affixed among the seven strati of the sample as shown as follows (Table 2).

4. Results
4.1 Priority of the financial sources for the manufacturing MiSBS in Tabasco

In this research we found for the State of Tabasco México, that the financial sources which most frequently have granted loans to manufacturing MiSBs in the lapse of analysis have been mainly of informal type: Suppliers, "tandas" and relatives, then moneylenders, friends, partners and clients, in that order of priority (Table 3). Only marginally, the MiSBs of the sample have obtained formal financing from the Bank Intermediaries and from the Government Programs.

Table 3. Observed frequencies of well known conditions of loans[a]

Financial sources	Totals	Financed	Not financed
"Tandas"	82	42	40
Suppliers	57	51	6
Relatives	40	39	1
Moneylenders and Pawnshops	78	22	56
Bank intermediaries	31	17	14
Government programs	38	7	31
Friends, partners and clients	22	22	0
Totals	348	200	148
Percent	100%	57.50%	42.50%

a. The number of MiSBs financed, and not financed, sums more than 133 because some businesses received loans from more than one source.

Source: own research.

4.2. Degree of knowledge of relevant information on the financial sources

One of the conditionings of the situation described above is that the sources whose conditions of loans are better known by the MiSBs are informal. At the first place we found the "tandas" (well known by 82 out of 133 MiSBs), then the moneylenders (well known by 78 out of 133 MiSBs), thirdly

the suppliers (well known by 57 out of 133), and finally the relatives (well known by 40 out of 133) and Friends, Partners and Clients (well known by 38 out of 133).

The formal sources are less known as far as their loans conditions refer and follow in decreasing importance in the list: Government programs (well known by 38 of the 133 MiSBs), and finally Bank Intermediaries (well known by 31 of the 133).

4.3. Chi-Square test results

Given that we want to demonstrate the relationship between good information and the access to loans from a source of credit, we established the null Statistical Hypothesis as: "**Ho**: The frequency of access to loans from a type of financial source is independent of the frequency of good information known by the businesses on the loan conditions from that source".

In addition, the alternative statistical hypothesis was: "**Ha:** The frequency of access to loans from a type of financial source depends on the frequency of good information that the businesses know on the loans conditions from that source."

The contingency table developed is shown as Table 3 with seven different groups of financial sources as rows. The number of MiSBs that well know the loans conditions of each source was divided in two columns. One column for the MiSBs that well know the loans conditions from each source and have received loans from that source (200 cases) and, another column, those that well know the loans conditions of each source but have not been financed by it (148 cases).

The chi-square-test with α = 0,05 and 6 degrees of freedom resulted in a J^2 of 118.827 greater than the one from the probability distribution table (12.59) so the null Hypothesis was rejected for the entire sample.

The same results were reached for each one of the stratus of the sample (Table 4).

Table 4. Chi square test for each stratus of the sample

Financial sources	Numb of establishment	A	df	Ji^2c	Ji^2t	Null hyphotesis
Chocolate factories	9	0.05	6	22.19	12.59	Rejected
Carpentry workshops	33	0.05	6	22.633	12.59	Rejected
Blacksmith workshops	35	0.05	6	23.628	12.59	Rejected
Ice cream factories	12	0.05	6	18.037	12.59	Rejected
Bread and cakes factories	14	0.05	6	17.225	12.59	Rejected
Cheese factories	8	0.05	5	11.377	11.07	Rejected
Clothes workshops	22	0.05	6	19.947	12.59	Rejected

Source: own research.

4.4. The suitability of the loans mixtures obtained

Seventy five percent of the MiSBs of the sample had lagged investment projects, that is why it is inferred that the mixtures of loans obtained have not been adequate to realise the projects, even though more than one third of the sample was classified as credit bank subject (Table 5); the majority of the external resources that have been obtained by the MiSBs has been for working capital, to purchase materials and inputs or to solve treasure shortage.

Concerning the timing of the loans, those from informal sources (this is suppliers, relatives, friends and moneylenders except for "tandas"), were considered in general terms opportune from the point of view of the businessmen. On the other hand loans from the formal sources like Bank Intermediaries and Government Programs were considered inadequate because the delays. This feature turned out to be its greater deficiency. The "tandas" and the banks were considered as inopportune in 70 percent of the cases (Table 6).

In the aspect of costs, the loans from the informal sources that most frequently have financed the MiSBs, were considered also cheap such as suppliers, "tandas", and relatives.

Table 5. Financial eligibility

MiSBs	Number of MiSBs in the stratum	Tax payment registration	Annual net earnings > US $3,800	3 or more years in the business	2 or more years in the same address	Age of the manager below 70	Real state owner	Adequate indebtedness	Credit Bank subject	With lagged investment projects
Chocolate factories	9	9	8	9	9	9	9	4	4	7
Carpentry workshops	33	17	12	31	28	32	32	27	8	24
Blacksmith workshops	35	23	18	34	32	33	26	25	12	25
Ice cream factories	12	11	8	11	12	11	10	6	3	10
Bread and cakes factories	14	14	13	12	11	13	10	9	6	11
Cheese factories	8	7	7	8	8	8	7	5	5	8
Clothes workshops	22	12	8	21	21	18	18	14	4	15
Total	133	93	74	126	121	124	112	90	42	100

Source: own research, based on the criteria of three major commercial banks in the State.

Table 6. Loans features

Financial Sources	Features		
	S	O	C
Suppliers	94	96	92
"Tandas"	76	31	100
Relatives	87	95	87
Moneylenders	68	100	5
Friend	80	100	53
Banks	80	30	80
Government programs	75	0	100
Savings and Loans	100	80	60
Partners	100	100	100
Pawnshops	50	100	0
Other sources			
Clients	100	100	100
Credit cards	100	100	67

Symbolism:
S = Percent of MiSBs that considered the obtained loans as sufficient.
O = Percent of MiSBs that considered the obtained loans as opportune.
C = Percent of MiSBs that considered suitable the cost of the obtained loans.

Source: own research.

The few cases financed by banks and the government programs were also considered cheap by most of the businessmen. Opposite to it, an informal source, the moneylenders, was considered very opportune in all the cases, but it turned out to be the most expensive one.

4.5. On bank financing

Only seven percent of the MiSBs had been financed by Banks in spite of that twenty seven percent of the businesses of the entire sample were evaluated as bank loans subjects, and also had lagged investment projects, (Table 7).

Another source from banks that could be used, considered by the micro and small businesses as very adequate from the point of view of the opportunity and sufficiency were the credit cards, although we found that very few MiSBs have leaned in them.

5. Conclusions

5.1. upon the imperfection of borrowers' financial information

The imperfection of the information (insufficiency or obsolescence) upon the Banks loans and the Government Loans Programs has propitiated that the MiSBs had financed themselves mainly from informal sources, as it is supported by the chi-square test applied to the entire sample and to each of its stratus.

Where the loans have flowed more frequently, it was in the cases where the asymmetry of relevant information between both actors of the process was smaller: the case of suppliers. Suppliers know better the credit quality of each of theirs MiSBs customers from daily contact.

The lack of information is also generalized to the government programs specially designed to financially support this sector, therefore they have financed very few MiSBs. A good number of MiSBs could be in possibility to pay higher interest rates as long as the resources were available just in time and in sufficient amounts, as it was found in some cases financed by moneylenders.

5.2. How to adequate the loans mixtures

From this analysis we can conclude that the more convenient way to deliver a good financing to this type of MiSBs would be through Suppliers. It is the most important source as far as the number of MiSBs that have gotten loans from them, the business man consider these loans as sufficient because they grant 100 percent of the need. They are opportune because their high speed of answer, and the reasonable level of cost. In addition, for a Supplier it is convenient to finance his clients because so they facilitate the sale of theirs own merchandise since the loans are in raw materials and inputs, not in cash.

Friends clients and partners, although were considered like suitable options in the little number of cases they have financed, they cannot be considered as steady sources of external resources because theirs structural characteristics.

Therefore, an ideal source of financing would be one that would have the penetration and acceptance of the suppliers, the speed of answer of the moneylenders and the cost of the government programs. A source, which in addition would take into account the sales cycles of each class of businesses, to fit the amortization tables in such a way that, at the low sales season the MiSBs would be charged only with the interests of the loans, and the principal amortization to be charged only in the months of higher sales.

5.3. A different point of view upon moneylenders

As the moneylenders are an option of fast financing, they can serve as "bridge source" in order to solve treasury shortages and for unforeseen expenses of the MiSBs, these emergency loans

Table 7. MiSBs bank credit subjects with lagged investment projects

	Chocolate Factories	Carpentry Work Shops	Blacksmith Workshops	Ice Cream Factories	Bread and Cakes Factories	Cheese Factories	Clothes Work Shops	Totals
MiSBs Probable Bank Loan Subjects	4	8	12	3	6	5	4	42
Lagged Investment Projects.	3	6	11	3	5	5	3	36
Insufficient loans mixtures	75%	75%	92%	100%	83%	100%	75%	85.71%

Source: own research.

could be complemented with the organization of a "tanda" as a second step financing strategy, toward a long run loan from the Government programs, or from another institutional credit source. The financing from moneylenders is expensive and requests guarantees in high proportions, but it was found in these research that as far as the moneylender personally knows the business man the guarantee that demands is smaller and sometimes just the word of the loan demander is enough collateral.

5.4. A way to diminish bank credit rationing

It would be advisable to redesign the advertising campaigns of the banks financial programs, and of the government supported programs, under the scheme of direct-touch, personal information, "arriving at the factory" through the "promotor financiero" because the personal contact is the scheme that seems to work better in this businesses sub-sector, as it is possible to be inferred from the financing from suppliers.

The commercial banks could act as second floor banks, financing alternative sources of loans like: the suppliers, the micro financial intermediaries, and even the moneylenders. The interest rates would be lower than those of the programs that banks have for the MiSBs, since those borrowers of loans do have real estate guarantees and the administration costs of the loans would be smaller because the higher amounts that these alternative sources could demand.

The promotion of complementary guarantees official programs, and specific collaterals, for this businesses sub sector, would lower the banks high risk perception upon the loans granted to MiSBs and probably it would reduce the adverse selection process that is so generated.

5.5. The "promotor financiero"

The scheme of the "promotor financiero" can be implemented through the senior students of the Universities as a community service, working alone with de Commercial Banks and Government Programs, going to the address of the businesses and giving the information directly to the businessmen at the right place and the right moment.

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