International Small Business Series 6

Michael Koch

Commercial Loans for Small Manufacturers in Latinamerica

- Empirical Evidence
on Formal Sector Credit Markets
in Colombia, Ecuador and Peru -

edited by:
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CONTENTS

1. Introduction

This paper addresses the issue of commercial loans as a resource of external finance for small manufacturing enterprises (SME) in developing economies. It represents part of the outcome of Ph.D.-related field research in Southamerica conducted by the author between November 1988 and April 1989. This research has been supported by the German Academic Exchange Service (Deutscher Akademischer Austauschdienst, DAAD, Bonn) and the German National Study Grant Foundation (Studienstiftung des deutsches Volkes, Bonn).

The importance of adequate external finance to the growth of small firms has been stressed by a large number of authors in the development literature.[1] Lack of access to commercial loans is often considered as the primary binding growth constraint to small units often operating within the informal sector of developing economies. Commercial banks and financial corporations in these countries tend to show a large degree of risk aversion when dealing with small-scale credit customers, thus leaving the field of small business loans mainly to informal financial intermediaries which are charging substantially higher rates of interest.

There are four important market-immanent explanations to such creditary discrimination of small productive units on formal financial markets:[2]

- *Banks' administrative costs of loan business*, including a fixed cost component (costs of personnel and of supplies for credit provision, credit disbursement, and the liquidation of loans) and a variable cost portion related to creditary risk reduction (costs of checking creditworthiness and of approving and monitoring loans). Due to the existence of significant economies of scale the percentage share of variable administrative costs will decline with rising loan volume, implying a sharp increase of the total administrative cost percentage with diminishing loan amounts. Assuming a positive correlation between loan volume and firm size, it follows that small enterprises are seen as customers of high costs and therefore of little attractiveness to financial institutions.
- *Banks' risk costs of loan business*, which include the uncertain amount of uncovered loss due to non-repayment of loans after exploiting given collateral.[3] Observers in developing countries frequently see defaults on loans due to willful breaching of credit contracts by small-scale entrepreneurs. Mostly inefficient legal systems and the generally low value of collateral provided by small firms reduce borrowers' expected costs of non-repayment

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1 For an overview of selected papers see KOCH, KÖNIG, MAY (1990)

2 See KOCH (1990), Chapter 3

3 The cost reflecting risk premium to be charged on new loans generally exceeds the expected loss ratio on a bank's loan portfolio: Given a loan volume of US$ 1,000, an average default ratio of 10 %, and administrative and capital costs of 15 %, the total loss due to non-repayment equals US$ 115 or (1,000 + 150) x 10 %. Therefore, the risk premium on "good" customers in this example amounts to: 115 / (1,000 x 90 %) = 12.78 %.

and provide further incentive to defaulting on loans. This, in turn, deteriorates banks' willingness to deal with small-scale customers.

- *Small firms' non-interest costs of obtaining loans*, which consist in payments for loan-related commissions, compulsory credit insurance, and other monetary expenses as well as non-monetary time costs. Because of the fact that such costs are more or less fixed within a certain range of loan volumes, demanders of rather small loans suffer under a comparatively higher financial burden when applying for external capital.
- *Conservative, risk averse loan policy on behalf of banks*, which might look upon the value of collateral provided as a decisive criterion for approving loans. Such a policy according to the so-called "British Banking School" will put small enterprises at a disadvantage against larger firms when competing for loans.

In addition to these "natural" reasons for creditary discrimination of small firms, there are exogenous influences due to governmental intervention into financial markets. Examples are legally fixed interest rate ceilings below equilibrium levels and promotional discount arrangements for loans to small-scale enterprises, designed to improve the prospects of small and informal firms to receive rather affordable loans. In practice, however, low ceilings on interest rates tend to be counterproductive since they prevent financial intermediaries from charging cost-reflecting rates of interest, thus giving incentive to concentrate credit capital on low-cost high-volume loans. In case of legal targets imposed on banks' shares of loan portfolio allocated to small-scale firms, credit intermediaries will still follow a policy of selecting the largest admissible enterprises within the given size bracket.

The following chapters provide some detailed empirical evidence on how formal sector credit markets work in three Latinamerican economies. Chapter 2 deals with small manufacturing enterprises as players on the demand side of the market. Capital availability and structure will be under investigation along with the financial burden of non-interest costs when applying for loans from financial institutions. The second chapter concludes with econometric aspects of explaining a firm's ex post- creditworthiness through a number of company-specific indicators such as profits and factor productivites. In the third chapter, banks' decisions concerning the allocation of their credit capital are at focus. This includes a thorough look at loan portfolio structures and involves a rigorous examination of expected profitability for loans of different sizes. Towards the end of chapter 3, an Adaptive Conjoint Analysis will be applied to reveal cardinal ex ante- patterns of preference within the process of loan assessment and approval in commercial banks. Finally, the concluding chapter offers recommendations for policy makers working on the financial promotion of small enterprises in developing countries.

2. Demand for Credit by Small Manufacturers

The survey conducted among small-scale enterprises includes 50 urban SMEs in both Bogotá and Quito, and 46 small manufacturing firms in Lima. They are spread among nine primary branches of industry according to the actual numerical distribution of manufacturing firms in the three capitals.[4] Firms have been considered and selected as SMEs if they employ less than 50 workers including family members. Of all 146 firms, 55 % lie within the 5 to 15 employees-bracket, another 19 % have less than 5 workers. The value of total capital does not exceed US$ 250,000 for 87 % of SMEs in the sample, and in 92 % of the cases sales in 1988 fell short of US$ 150,000.

Table 1

Size Structure of SMEs in the Survey

Criterion of Size	Colombia	Ecuador	Peru	Average
Number of employees (Mean)	12.4	10.1	14.5	12.3
Total company capital (Median in US$[1])	61,714	35,769	95,000	51,714
Annual sales volume in 1988 (Median in US$[1,2])	42,857	15,384	22,500	28,571

[1] underlying exchange rates: 1 US$ = 350 Colombian Pesos = 520 Ecuadorian Sucres = 1,500 Peruvian Intis.
[2] prices as of march 1989
Source: KOCH (1990b), table 4-1

Table 1 shows the size structure of SMEs in the survey. Manufacturing firms in Quito are smallest, followed by firms in Bogotá and Lima. Sales of Peruvian SMEs, however, are below the Colombian average due to recessionary influences in Peru during the late 1980s.

2.1. Availability and structure of outside capital

The components of a manufacturing firm's working capital include finished products and raw material on stock plus short term credit given to customers minus liabilities against suppliers of inputs. It turns out that in the Peruvian

[4] Most important branches are textiles and clothing (27 % of all firms in the sample), food and agriculture (20 %), machinery and transport equipment (19 %), paper and printing (10 %), and chemicals (10 %). The classification of manufacturing industries is in accord with the U.N. International Standard Industrial Classification of All Economic Activities (ISIC).

sample the stock of working capital amounts to 18.6 % of annual sales in 1988, exceeding by far the corresponding values for SMEs in the Colombian (9.9 %) and Ecuadorian surveys (3.0 %). This is mainly due to the above-mentioned recession in Peru bringing about low demand for SMEs' products. Consequently, the volume of outside working capital with small manufacturers in Lima averages a low 4.4 % of total raw material consumption in 1988, compared to mean values of 17.3 % in Quito and even 61.9 % in Bogotá: Given the high speed of monetary devaluation and the uncertainty of future economic trends Peruvian suppliers of inputs are not willing to provide loans in local currency. The smallest manufacturing firms in Lima with less than 15 employees seem to suffer most under the limited availability of outside working capital.[5]

Abstracting from the distinction between working and fixed capital, there are three major areas of interest when analysing the degree of access of small firms to external finance: What is the share of outside capital compared with total company capital, what are the various sources of finance within borrowed capital, and how does the importance of different capital sources vary with changing firm size?

Table 2

Importance of External Capital According to Firm Size

(average shares of external capital in % of total company capital of the respective size class)

Country Sample	Company Size Classes[1]					all
	I	II	III	IV	V	firms
Colombia	13.30	13.87	10.63	8.62	4.10	9.26
Ecuador	19.68	18.01	8.58	11.72	10.71	12.50
Peru	5.59	1.52	2.26	4.42	5.62	3.34
Average	12.55	11.11	7.20	8.37	6.38	8.81

[1] Company size classes are constructed out of three size-related criteria: number of employees, total sales in 1988, and total capital stock at the time of the survey; class I stands for the smallest firms in the sample.
Note: Liabilities are given as of the date of the survey
Source: KOCH (1990), table 4-5

The relevance of outside capital as a source of finance to SMEs varies significantly between the three country samples (see table 2). In Colombia's stable financial system with comparatively low annual inflation rates below 30 % in the last five years, small firms are able to generate around 9 % of their total capital out of external sources. Similar observations apply for Ecuador, although

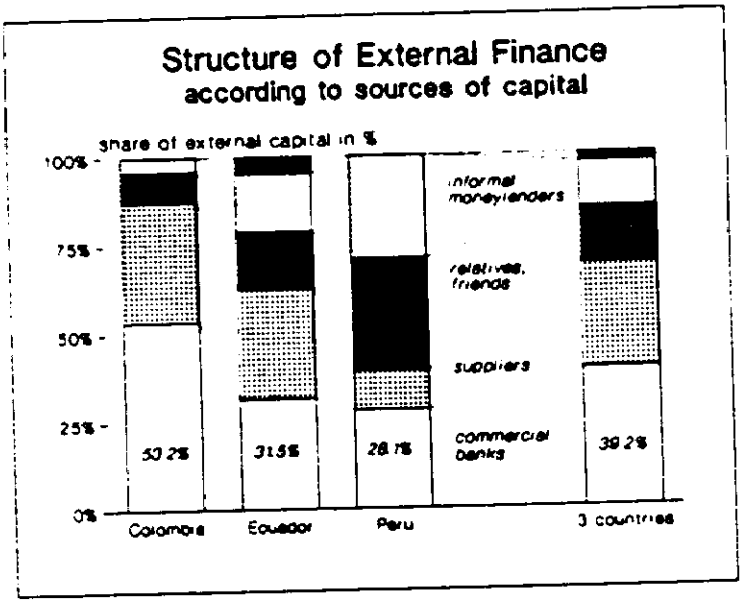
[5] The respective percentage of outside working capital in terms of 1988 annual raw material consumption equals only 0.9 % compared to 4.5 % for larger Peruvian SMEs with 15 employees and above.

rising rates of currency devaluation above nominal loan interest rates start to generate a rising surplus demand for credit funds. A different picture must be drawn of Peruvian SMEs since on average only 3.3 % of total capital is financed from outside the enterprise. Facing monthly inflation rates of 40 % and over financial intermediaries in Lima demonstrate little willingness to provide medium and long-term financing for small industrial units: Shares of external capital are lowest for Peruvian firms in the second smallest size class and rise with increasing firm size. This contrasts sharply with the usual trends prevailing at Bogotá and Quito which show rising respective outside capital shares with decreasing firm size.

Four sources of finance for borrowed capital have been identified with the SMEs in the survey:

(1) commercial banks and financial corporations including governmental development banks and promotional corporations,
(2) informal moneylenders,
(3) suppliers of raw material and intermediate inputs, and
(4) relatives and friends charging no interest on loans.

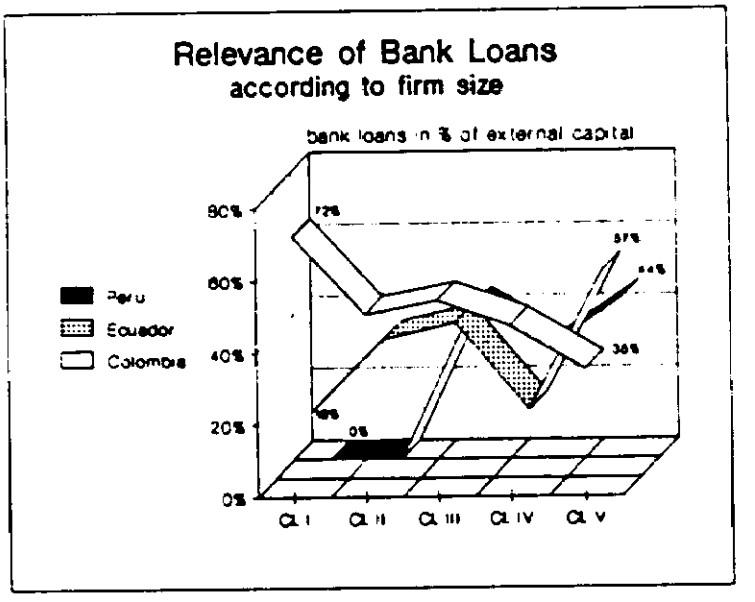
Graph 1



Within the Colombian group of small firms, bank loans are the most important source of external finance accounting for more than 50 % of total outside capital (see graph 1). The opposite is true for the Peruvian sample, where SMEs have to rely heavily on non-bank alternatives in order to satisfy their capital needs. Firms in Quito are placed between these two extremes with suppliers of raw material and intermediate inputs as the primary source of borrowed capital. Again, these results give a clear reflection of how operational a country's monetary and banking systems is in the light of inflationary and recessionary tendencies.

According to the hypothesis of creditary discrimination of small firms, there should be significant changes in the relative importance of these capital sources with varying firm size. Graph 2 shows the values of the share of bank loans in % of total outside capital for five different firm size classes.[6] Data on SMEs in Quito and Lima support the above-mentioned hypothesis: The two subgroups of the smallest Peruvian manufacturers do not have any access to loans from commercial banks whereas firms in the largest size class draw 44 % of external capital out of formal banking sources; the corresponding percentages for the smallest and largest size classes in Ecuador are 18 % and 57 %, respectively.

Graph 2



The picture is different, however, in the case of Colombian SMEs where bank loan shares of total external capital decrease from a high 72 % within the smallest company size group to a low 35 % for the largest enterprises in the respective sample. This development is due to a strong selection bias since most of small Colombian firms with up to 15 employees have been drawn from members of Bogotá-based Fundación Social, a non-profit institution that provides a broad range of specialized vocational training courses and consulting services to small-scale enterprises. These services include valuable assistance to SMEs when applying for commercial loans with certain banks that participate in the institution's promotional credit program.

Low shares of bank loans in the case of small enterprises in Quito and Lima could of course result from the fact that entrepreneurs lack the knowledge of existing lines of commercial or promotional credit. Firm owners might also refrain from applying for bank loans because they consider that they would not be eligible for such loans, or that the related interest costs could be too much a burden on the firm. Survey results, however, do not support these explanations

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6 Company size classes are constructed according to the methodology in table 2.

of low bank loan shares: More than half of Ecuadorian smallest manufacturing firms (size groups I and II) and virtually all of Peruvian smallest firms did apply for commercial bank loans between January 1984 and December 1988. Loan approval ratios were in turn rather low with average percentages of 43 % for the smallest Ecuadorian firms, and 68 % in the case of the second smallest group of Peruvian enterprises. In 1988, respective loan approval quotas in Lima even dropped below 30 %. Therefore, unsufficient supply rather than lack of demand must be looked upon as the underlying reason for small firms' low endowment with commercial loans from the formal banking sector, and this supports the initial hypothesis of a creditary discrimination of small firms on formal financial markets.

Authors on small enterprise finance in developing countries frequently stress that commercial banks were especially reluctant when dealing with newly established small firms. Due to a chronic lack of collateral on behalf of the new entrepreneurs, loans with the purpose of setting up a small-scale company are said to be practically unavailable from formal sector sources. Instead, smallest firms had to rely on informal moneylenders and family members providing necessary financial support.

These observations cannot be backed by the data gathered in the three latinamerican countries. Checking the results of the survey given in table 3, the primary source of initial capital are personal savings of the entrepreneur or his/her family, accounting for 40 % to 60 % of set-up finance. Adding non-interest loans from relatives or friends and revenue out of the sale of a previous enterprise, only about a fourth of initial financial needs had to be covered by interest-bearing loans from outside the company. Within this fraction of external loans, however, the share of commercial bank finance does not diminish significantly with decreasing firm size. There is even a tendency for broader access to commercial bank loans by smallest firms in the Ecuadorian sample.[7]

Summing up, small manufacturing enterprises in the Colombian and Ecuadorian samples are better equipped with outside capital than their Peruvian counterparts. This is primarily due to low monetary stability and recessionary tendencies in Peru by the time of the survey. In accordance with observations in the literature, shares of commercial loans from banks tend to fall with decreasing firm size. Such creditary discrimination of the very small enterprises does not occur, however, at Bogotá-based firms because of a selection bias in the respective sample. Furthermore, there is no specific evidence on the existence of an equivalent form of creditary discrimination at the time of setting up a small enterprise in any of the three countries.

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[7] In the case of Ecuador and Peru, this rather positive picture on start-up finance for small firms through bank loans is partially due to past governmental programs providing low-cost capital for small industries while offering sufficiently large interest margins to participating commercial banks.

Table 3

Financing of Initial Capital According to Firm Size

(average capital shares in % of initial capital of the respective size class)

Country Sample, Source of Initial Capital	Number of Employees[1] 1 - 2	3 - 4	5 - 6	> 6	all firms
Colombia					
relatives and friends	20.8	37.2	37.7	55.0	32.5
informal moneylenders	1.6	3.6	6.9	0.0	3.4
commercial banks	2.6	0.0	9.2	0.0	3.4
sale of previous own firm	0.0	5.0	9.2	12.5	4.8
suppliers of fixed capital	0.0	0.7	1.6	0.0	0.6
suppliers of raw material	10.0	10.3	5.4	0.0	8.1
personal savings	65.0	43.2	30.0	32.5	47.2
total	100.0	100.0	100.0	100.0	100.0
Ecuador					
relatives and friends	24.7	36.4	43.3	45.0	35.0
informal moneylenders	2.9	7.2	0.0	5.5	3.2
commercial banks	13.5	18.2	10.0	4.0	12.2
sale of previous own firm	1.2	0.5	0.0	0.0	0.5
suppliers of fixed capital	0.5	2.7	0.0	0.0	0.8
suppliers of raw material	8.6	2.7	12.8	2.0	6.7
personal savings	48.6	32.3	33.9	43.5	41.6
total	100.0	100.0	100.0	100.0	100.0
Peru					
relatives and friends	10.0	15.8	5.6	12.5	11.5
informal moneylenders	5.0	0.0	2.3	0.0	2.0
commercial banks	15.0	8.3	5.6	21.7	12.4
sale of previous own firm	0.0	8.9	0.0	15.0	6.1
suppliers of fixed capital	4.2	0.0	8.9	5.0	2.7
suppliers of raw material	8.3	3.9	2.2	0.0	4.6
personal savings	57.5	63.1	75.4	45.8	60.7
total	100.0	100.0	100.0	100.0	100.0

[1] at the time of setting up the firm

Note: Initial capital is defined as the sum of initial fixed capital plus the value of working capital necessary for operation during the first month of business.

Source: KOCH (1990), table A-34

2.2. Costs of obtaining external finance

A decisive factor whether or not to apply for a commercial loan are the related costs of applying for and obtaining the desired external finance. Apart from interest payments there are non-interest costs involved which are commonly considered to be fixed in absolute terms for a broad range of micro- and small-scale enterprises, thus explaining in part the cost-related disadvantage of small firms when seeking for rather low volumes of outside capital.

Table 4

Non-Interest Costs of Obtaining Bank Loans

(medians in % of average loan volume in the respective loan size class)

Country Sample, Loan Size Classes	Non-Interest Costs				
	commission	insurance	documents	transportation	bribes
Colombia					
col.Pesos < 1 Mill.	not av.	0.40%	0.15%	0.07%	not av.
col.Pesos 1 - 1.5 Mill	not av.	not av.	0.10%	0.05%	not av.
col.Pesos > 1.5 Mill.	not av.	0.00%	0.10%	0.03%	not av.
Ecuador					
ecu.Sucres < 1 Mill.	6.00%	0.00%	0.40%	0.00%	0.00%
ecu.Sucres 1 - 3 Mill.	3.50%	0.00%	0.20%	0.03%	0.00%
ecu.Sucres > 3 Mill.	2.25%	2.25%	0.16%	0.10%	0.00%
Peru					
per.Intis < 0.5 Mill.	3.50%	11.67%	1.00%	0.33%	0.25%
per.Intis 0.5 - 5 Mill.	3.00%	3.75%	1.00%	0.50%	0.00%
per.Intis > 5 Mill.	0.70%	3.73%	0.25%	0.00%	0.00%

Source: KOCH (1990), table A-39

Two subgroups of non-interest costs can be isolated: First, monetary costs involving actual payments, and second, non-monetary time-related opportunity costs. The former include components like bank commissions, compulsory credit insurance, expenses for obtaining required documents and certificates, costs of public transportation to and from the bank office, and other miscellaneous payments such as bribes. Time costs of obtaining commercial loans are hours spent on negotiations with bank staff, days of gathering information on loan availability and loan costs at different banks, and days of waiting for loan disbursement after applying.

It proved to be a difficult task collecting reliable data on these non-interest costs since the last time of applying for commercial loans was often years ago in the past and no respective records had been kept. In addition, high rates of inflation in Peru made it very hard to calculate in a reliable way the monetary cost component at the time of loan application, such that percentages of these costs in terms of the original nominal loan volume had to be estimated in part. Taking into account these restrictions, the data in table 4 provide evidence that non-interest monetary costs are in general higher for small loan volumes. The same is true of non-monetary time costs since hours and days given in table 5 tend to rise less than proportionally to average loan volume, resulting in larger time costs per loan unit in the case of smaller loans. It is therefore more costly for very small enterprises to obtain external finance from commercial banks than it is for firms applying for larger amounts of outside capital. Hence, one possible reason of a market-immanent creditary discrimination of SMEs proves to be existent.

Table 5

Time Costs of Obtaining Bank Loans

Country Sample, Loan Size Classes	negotiations with bank (hours)	information gathering prior to applying (days)	waiting for disbursement (days)
Colombia			
col.Pesos < 1 Mill.	5.8	2.6	23.0
col.Pesos 1 - 1.5 Mill	6.1	2.7	28.3
col.Pesos > 1.5 Mill.	6.6	3.7	26.3
Ecuador			
ecu.Sucres < 1 Mill.	36.6	7.7	47.5
ecu.Sucres 1 - 3 Mill.	25.3	4.0	60.0
ecu.Sucres > 3 Mill.	82.4	12.5	45.0
Peru			
per.Intis < 0.5 Mill.	78.3	5.3	26.0
per.Intis 0.5 - 5 Mill.	75.9	8.5	40.5
per.Intis > 5 Mill.	88.6	22.7	67.5

Source: KOCH (1990), table A-40

2.3. Creditworthiness as a function of company-specific characteristics

An interesting topic after analysing SMEs' capital availability is the examination of firm-specific characteristics that might determine a firm's chances of

obtaining bank loans. If it were possible to identify a certain range of indicators that characterize small firms successful in applying for commercial finance, this could have significant impact on the way how small-scale enterprises in developing countries should be promoted in the future. Looking at the demand side of the credit market, such an analysis is necessarily an ex post- evaluation reflecting small firms' experiences with commercial banks in the past. An ex ante- test of SMEs' creditworthiness from a supplier's point of view will be offered in the third chapter.

Precise recording of creditworthiness would require to gather detailed data on the frequency and the success of loan applications for each firm in the sample over a range of several years. Since information of that quality and detail was not available for most of the firms interviewed, creditworthiness is approximated by the actual bank loan shares of total or external capital. This procedure, however, limits the value of the following conclusions since it does not allow to distinguish between creditworthy firms not applying for bank loans from those enterprises that have poor credit rating and are unsuccessful in obtaining commercial loans.

The following indicators of firm performance and general characteristics have been included into a regression explaining bank loan shares: profit, factor productivities, firm size (number of employees, volume of fixed and total capital), scholastic education and professional experience of the entrepreneur, firm age, and utilization of installed capacity as an indicator of market position. It turned out that firm profits did not have significant explanatory power in any of the country-specific regressions. The surprising conclusion could be that suppliers of credit do not regard firm profits as an important factor when deciding on loan applications. More likely, banks will often not be in a position to thoroughly check an applicant's profits since trustworthy bookkeeping records are typically not available. Therefore, they probably have to rely on more obvious indicators when judging on a small firm's creditworthiness.

Table 6 shows that in the case of Colombian SMEs total capital productivity proves to be such a key indicator positively correlated with bank loan shares. The same is true for firm size when expressed as the volume of fixed or total capital stock. Advanced levels of an entrepreneur's scholastic education and previous professional experience gained in parents' enterprise are also powerful explanatory variables of bank loan availability. Although one might consider higher firm age to exert a positive influence on credit rating assigned by banks, interestingly enough, older firms in the samples from Colombia and Peru tend to be worse equipped with commercial loans. A possible explanation is that according to the opinion of several banks, manufacturing firms which after many years of operation still remain on a very small scale of activity have to be considered as worse risks compared to relatively young and dynamic small enterprises with promising growth potentials.

Table 6

Explaining Ex Post- Creditworthiness

(best-fitting OLS-regressions, dependent variable: bank loan shares)

Explanatory Variable	Colombia[1]	Ecuador[2]	Peru[1]
constant	0.5570 (2.012)	-51.3088 (16.294)[d]	0.8178 (0.868)
age of firm (years)	-0.4810 (0.144)[d]		-0.0848 (0.051)[b]
number of employees			0.0643 (0.055)
fixed capital stock (in Mill. of local currency)	0.0250 (0.017)[a]		
total capital stock (in Mill. of local currency)		0.4405 (0.091)[d]	
highest educational level: secondary school (dummy var.)	4.6205 (1.474)[d]	10.2876 (9.779)	
professional experience: not existent (dummy var.)		-17.6176 (7.392)[c]	
professional experience: parents' firm (dummy var.)			2.5130 (1.411)[b]
productivity of total capital[3]	15.8795 (3.875)[d]		
marginal productivity of fixed capital[4]	-0.0569 (0.046)		
capacity utilization (hours)		8.0725 (2.556)[d]	
sample size	50	49	44
corrected R-square	0.474	0.516	0.113
F-test	9.848	11.243	2.822

[1] dependent variable: bank loan share in % of total capital
[2] dependent variable: bank loan share in % of external capital
[3] productivity of total capital = value added in 1988 / total capital stock at the time of the survey
[4] marginal productivity of fixed capital = additional value added per year / volume of necessary additional investment in fixed capital
Note: Values in brackets are standard errors. Footnotes a, b, c, and d stand for levels of significance of 85 %, 90 %, 95 %, and 99 %, respectively.
Source: KOCH (1990), table 4-6

The last indicator included as an explanatory variable for creditworthiness deals with the position of small firms in product markets. In the Ecuadorian sample, the degree of capacity utilization does explain loan availability with a very high level of significance. This supports the underlying assumption that an extensive utilization of installed equipment reflects good product standing and strong market demand and is going to improve the prospects of obtaining external finance.

Concluding this section, the key characteristics of small firms which ex post are successful in mobilizing loans from formal financial institutions can be summed up as follows: Manufacturing companies with more than just a marginal amount of own capital, with above-average values of capital productivities and a good utilization degree of installed capacity, and with entrepreneurs that have had at least a secondary education and have gained some professional experience, will have good chances for obtaining loans from banks and financial corporations of the formal financial sector. A missing business history due to a short period of operation does not necessarily have a negative impact on credit rating as long as some collateral is available and entrepreneurial competence is visible.

One might argue that creditworthiness expressed in terms of bank loan shares should not only be looked upon as a result of key indicators like productivites or profit, but that the opposite direction of influence could also be true: reasonable endowment of commercial credit will enable enterprises to install technically adequate equipment and produce more productively and in a more profitable way. This hypothesis, however, cannot be supported by any of the regressions that have been run accordingly.

3. Supply of Loans by Commercial Banks

The second focus of the empirical research conducted in Southamerica was on commercial banks and financial corporations providing loans to small-scale customers. A total of 104 financial institutions were asked for cooperation with 48 of them providing data of sufficient accuracy for further analysis. Among them are 18 commercial banks and 10 financial corporations in Colombia, 10 banks and one financial corporation in Peru, and 9 banks based in Ecuador. 28 institutions are privately-owned with the majority of shares held by nationals of the respective country, another 10 are under control of foreign shareholders. There are also 7 governmental banks and development corporations together with 3 commercial peruvians banks that have been brought under governmental supervision ("bancos asociados"). The size of institutions ranges from tiny financial corporations with 23 employees and only one office up to large commercial banks with over 9,000 employees and 300 branches.

Table 7

Maximum Loan Interest Rates within the Banking Sector

(yearly nominal, effective, and real rates of interest)

Country, Lines of Credit	nominal rate	effective rate	real rate[a]
Colombia[b]			
commercial loans			
- maximum interest rate	43.45[c]	51.06	17.92
- dto. plus interest on arrears	55.45[c]	68.08	31.21
(average market interest rate	35.87[c]	40.99	10.06)
credit funds of central bank			
- FFI, FIP, FCE, FCSF	27.26[c]	30.17	1.62
	to 33.63[c]	to 38.11	to 7.81
- PROEXPO	21.43[c]	23.21	-3.82
	to 27.02[c]	to 29.88	to 1.39
Ecuador[d]			
commercial loans			
- highest market interest rate	48.00[e]	66.75	-12.65
credit funds of central bank			
- FOPINAR	32.00[e]	39.59	-26.88
- rediscountable loans	28.00[e]	33.68	-29.97
- Fondos Financieros, BNF	23.00[e]	26.73	-33.61
Peru[f]			
commercial loans			
- highest market interest rate	30.00[g]	2,229.81	-33.70
(parallel market interest rate	36.00[g]	3,903.75	13.94)
credit fund COFIDE			
- PROPEM	95.31[h]	1,355.12	-58.59
- other lines of credit	95.31[h]	1,355.12	-58.59
	to 107.27[h]	to 1,745.63	to -47.48

[a] Real rates of interest equal the difference between the effective yearly interest rate and the rate of inflation, deflationed by the yearly rate of monetary devaluation: real interest rate = (effective rate - inflation rate) / (1 + inflation rate). Yearly rates of inflation were taken as follows: Colombia 28.1 % (average of 1988), Ecuador 90.9 % (february 1989), and Peru 3,414.0 % (march 1989).

[b] as of November 30, 1988

[c] yearly nominal interest rate with post-period, quarterly capitalization of interest

[d] as of February 27, 1989

[e] yearly nominal interest rate with pre-period, quarterly capitalization of interest

[f] as of March 10, 1989

[g] monthly nominal interest rate with post-period, monthly capitalization of interest

[h] quarterly nominal interest rate with post-period, quarterly capitalization of interest

Source: KOCH (1990), table 5-1

An examination of the behavior of commercial banks requires a detailed look at the economic and legal framework prevailing in each of the three latinamerican countries under consideration. Banks' loan allocation policy and the profitability of loan business in general depend to a great deal on the degrees of freedom assigned to the private banking sector by local monetary and fiscal authorities. Due to limited space, only a brief summary of some important ceilings on loan interest rates when dealing with small-scale loan customers is given in table 7.[8]

3.1. Customer target groups and loan portfolio structure

Five indicators have been selected in order to characterize banks' credit structure and their orientation towards certain demand segments of local credit markets. These are average loan volume, collateral requirements, structure of maturities, the SME-loan portfolio (volume, maturities), and the willingness of assigning credit to newly created enterprises. Explanatory variables of these indicators of credit structure are a bank's size, the nature of bank shareholders (private nationals, foreigners, or government), and the prevailing legal norms.

A key decision of doing banking business is the selection of a specific degree of participation in private customer retail banking. Providing consumer credit and private loans on a large scale will result in low average loan volumes without necessarily giving information on the willingness to assign larger loans for commercial purposes. This explains why large banks in the Colombian sample show low average loan volumes of US$ 5,657 compared to a high average of US$ 57,000 for foreign-owned banks with a very selected clientele of medium and large enterprises. Similar tendencies apply for banks in the Ecuadorian and Peruvian samples. Country-specific averages of loan volumes, however, differ clearly with a high average of US$ 54,657 in Colombia compared to US$ 11,173 in Ecuador and a very low average of US$ 2,887 in Peru. This is due to rising rates of inflation in Ecuador and hyperinflation in Peru, devaluating the real value of loans in national currency.

Potential small-scale customers frequently lack the necessary collateral to apply for commercial loans. A look at collateral requirements of banks in the survey reveals that smaller financial institutions follow a less conservative policy in the sense that they set higher maximum loan volumes up to which loans can still be given without mortgages or equivalent real guarantees. The opposite proves to be true for large commercial banks with high numbers of credit customers and low average loan volumes: These banks have to employ standardized procedures of loan evaluation and set up rather strict requirements concerning collateral in

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[8] For a more complete overview on financial systems, governmental interventions into credit markets, and official financial assistance initiatives in favour of small-scale enterprises within the three respective countries see KOCH (1990), Chapter 5.1.

order to make up for the unavoidable lack of detailed knowledge of every single credit customer.

Macroeconomic reality has a clear impact on the structure of average maturities in the three country samples. There is strong pessimism and high uncertainty among Peruvian bankers when looking at future economic perspectives, virtually eliminating their willingness to provide any long or medium term finance. Thus, on average 86.0 % of loans in Peru have maturities below 12 months, another 13.1 % of them below 3 years.[9] The respective figures in Ecuador are 70.8 % for maturities up to one year and 17.4 % for maturities between 1 and 3 years, resulting in 11.8 % of long term loans with more than 3 years of maturity. More optimistic, however, are economic outlooks and macroeconomic expectations in Colombia, where banks are willing to assign 25.6 % of loans with a maturity of 1 to 3 years and another 17.1 % with over 3 years of maturity. Differentiating according to different kinds of financial institutions there is evidence that public banks are less reluctant financing medium and long term loans than private and especially foreign banks.

Oberservations in the literature stress that formal banking systems in developing economies provide only little finance and short maturities to small-scale enterprises. Banks in the empiricial survey in part follow such a policy. In the three country samples average loan volume in favor of small firms equals between 10 % and 16 % of total loan volume, reflecting governmentally set target values. Some banks, however, make use of legal alternatives to these small-scale loan targets by investing funds into low-yielding governmental bonds instead. Especially private-national banks in Colombia (SME portfolio share of 3.84 %) and foreign banks in Ecuador and Peru (SME shares of 3.74 % and 7.88 %, respectively) try to maintain low levels of total credit volume given to small-scale customers.[10]

A conservative loan policy with regard to SME credit customers can also be assigned to large financial institutions. The opposite is true for smaller banks which seem to benefit from a rather intense contact with each of their commercial customers, allowing them to identify promising projects among small-scale applicants.[11] With regard to SME-loan maturities the empirical data suggest that at the time of the survey there were practically no Peru-based banks willing to approve SME-loans with more than 3 months maturity. While in

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9 Percentages are given in % of total loan volume.

10 Small manufacturing enterprises in the bank survey have been defined according to national legislation or according to definitions widely used by banks in the same country: Total company capital should not exceed col.Pesos 150 Mill. (equivalent to US$ 428,571 at an exchange rate of 350 col.Pesos/US$), ecuad.Sucres 50 Mill. (US$ 96,154 at a rate of 520 ecuad.Sucres/US$), and per.Intis 150 Mill. (US$ 100,000 at a rate of 1,500 per.Intis/US$).

11 The corresponding SME-loan portfolio shares in Colombia lie for small/ medium/ large banks at 17.0 %/ 6.3 %/ 6.9 %, respectively; in Ecuador and Peru SME-loan portfolio shares for small/ large banks amount to 24.3 %/ 4.5 % and 13.9 %/ 11.9 %, respectively.

Colombia and Ecuador maturities of SME-loans correspond widely with the overall maturity structure, small firms in Peru suffer even more under monetary instability and inflation than their larger loan-seeking commercial counterparts.

Finally, asked about their readiness to assign loans in favor of newly created firms all Peruvian banks in the sample rejected any such consideration due to pessimistic expectations about the economic future of the country. There is also very conservative behavior among Colombian and Ecuadorian banks with only one public institution in Bogotá and another private bank in Quito admitting to give such loans, however at a rather small scale (0.5 % and 0.4 % of the respective total loan volume). Setting up a new small enterprise with financial assistance of one of the commercial banks in the survey therefore seems to be an unrealistic intention.

3.2. Profitability as a determinant of loan allocation

Within the group of market-immanent explanations to SMEs' loan-related disadvantage on formal credit markets mentioned earlier in this paper, two of them are closely related to profitability aspects of loan business: banks' administrative costs, and banks' risk costs. Low profitability in terms of unsatisfactory net interest margins is widely seen as the major reason of banks' reluctance when dealing with small-scale customers. Poor interest margins may follow either from low interest earnings caused by legal ceilings on loan interest rates, or from high costs of giving low-volume loans to SMEs, or both. Together with interest costs of capital, administrative costs and risk costs form the three decisive components summing up to total costs of loan business.

Table 8 gives sources of capital and average *capital costs* of each source for banks in the survey. About a third of financial resources stem from zero-cost current account deposits, and it is assumed that on average 25 % of the respective volume can be used for the purpose of giving loans. Weighting each cost by the share of the respective capital source leads to the results presented in table 9. Actual average yearly interest costs of capital, expressed as real interest rates, turn out to be very low in Colombia (2.01 %) and reach even negative levels in the case of Ecuador and Peru (-34.49 % and -58.17 %, respectively) due to high rates of inflation in the latter two countries. A comparison of these costs with the range of real interest rates charged on loans (see table 7) reveals rather high real gross interest margins of financial intermediation in all of the three countries.[12]

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[12] Maximum real gross margins equal 15.91 % in Colombia (17.92 % - 2.01 %), 21.84 % in Ecuador (-12.65 - (-34.49)), and 24.47 % in Peru (-33.70 - (-58.17)).

Table 8

Sources of Capital and Average Capital Costs with Commercial Banks

(average shares of sources in % of total resources; yearly interest costs of capital)

Country Sample, Financial Institutions	Sources of Capital: current accounts	savings accounts	term deposits	central-bank	other sources	sum
Colombia						
sources of capital	*22.0*	*6.5*	*41.6*	*13.7*	*16.2*	*100.0*
banks	33.0	9.8	38.2	6.6	12.4	100.0
- private-national	42.8	12.4	33.8	5.5	5.5	100.0
- private-foreign	29.1	8.5	41.6	7.2	13.6	100.0
- public	33.7	10.2	36.4	6.3	13.4	100.0
financial corporations	0.0	0.0	48.3	28.0	23.7	100.0
costs of capital						
A. interest cost (effective)	0.00	21.83	32.49	29.89		
B. minimum reserve requ.	56.00	30.00	22.00			
C. effective cost of capital	0.00	31.19	41.65	29.89		
D. real cost of capital	-21.94	2.41	10.58	1.40		
Ecuador (banks)						
sources of capital	*32.2*	*15.1*	*3.8*	*14.7*	*34.2*	*100.0*
- private-national banks	27.2	25.1	6.3	21.7	19.7	100.0
- private-foreign banks	39.7	0.0	0.0	4.2	56.1	100.0
costs of capital						
A. interest cost (effective)	0.00	41.12	45.83	17.20		
B. minimum reserve requ.	29.00	5.00	5.00			
C. effective cost of capital	0.00	43.28	48.24	17.20		
D. real cost of capital	-47.62	-24.95	-22.35	-38.61		
Peru (banks)						
sources of capital	*35.2*	*15.7*	*14.0*	*3.6*	*31.5*	*100.0*
- private-national banks	26.6	15.2	13.3	2.8	42.1	100.0
- private-foreign banks	45.5	0.2	2.5	7.7	44.1	100.0
- public banks	38.8	24.0	20.4	2.3	14.5	100.0
costs of capital						
A. interest cost (effective)	0.00	650.8	1043.7	483.1		
B. minimum reserve requ.	64.00	64.00	64.00			
C. effective cost of capital	0.00	1807.6	2899.2	483.1		
D. real cost of capital	-97.15	-45.71	-14.65	-83.41		

Note: Effective and real costs of capital are calculated net of minimum reserve requirements; interest earnings on minimum reserve deposits with central banks are neglected.
Source: KOCH (1990), table A-48

Table 9

Actual Capital Costs within the Commercial Loan Business

(average yearly interest costs of capital, weighted by sources of capital)

Country Sample, Financial Institutions	interest rate I[1]	interest rate II[2]	interest rate III[3]	interest rate IV[4]
Colombia	**22.41**	**25.32**	**30.67**	**2.01**
banks	*18.28*	*21.86*	*29.89*	*1.40*
- private-national	15.56	18.63	29.17	0.84
- private-foreign	20.46	23.22	30.49	1.87
- public	17.00	21.57	29.53	1.12
financial corporations	*30.67*	*32.24*	*32.24*	*3.23*
Ecuador (banks)	**17.87**	**18.29**	**25.05**	**-34.49**
- private-national	16.92	17.61	22.28	-35.95
- private-foreign	19.31	19.82	29.21	-32.32
Peru (banks)	**483.67**	**975.79**	**1369.83**	**-58.17**
- private-national	446.55	837.16	1054.15	-67.16
- private-foreign	482.11	953.11	1337.78	-59.08
- public	520.79	1114.43	1685.50	-49.19

[1] interest rate I = effective interest cost payable on deposits
[2] interest rate II = effective capital cost net of minimum reserve requirements
[3] interest rate III = dto. assuming that only 25 % of current account deposits can be used for loans
[4] interest rate IV = dto. expressed in terms of real capital cost
Source: KOCH (1990b), table A-49

Administrative costs percentages are generally believed to decline with rising loan volumes due to economies of scale when checking applicants' creditworthiness and approving and monitoring loans. Consequently, high levels of administrative costs per loan unit in the case of low loan volumes will cause a creditary discrimination of small-scale customers. The data collected among Colombian banks and financial corporations clearly support these observations and conclusions (see table 10).[13] Accordingly, total absolute administrative costs rise less than proportionally to loan volume, such that cost percentages fall from 70.94 % in the case of very small loans to values below 1 % for large loans above col.Pesos 100 Million.[14]

[13] Banks in the samples from Ecuador and Peru could not provide data of sufficient detail in order to calculate variable and fixed administrative costs of loan business.

[14] Expenses that are related to legal action and to enforcing payments in the case of late payments and bad loans can be neglected as part of variable administrative costs. Such

Table 10

Administrative Costs of Loan Business

(average costs in Colombia in col.Pesos and in % of loan volume)

Loan Volume (col.Pesos)	Absolute Administrative Costs			in % of
	fixed portion	variable portion	sum	loan volume
200,000	114,457	27,420	141,877	70.94 %
500,000	114,457	30,300	144,757	28.95 %
1.0 Million	114,457	62,583	177,040	17.70 %
5.0 Million	114,457	86,600	201,057	4.02 %
20 Million	114,457	253,275	367,732	1.84 %
100 Million	114,457	719,212	833,669	0.83 %
500 Million	114,457	3,722,670	3,837,127	0.77 %

Note: Fixed administrative costs include costs of personnel and supplies for loan provision, loan disbursement, and loan liquidation; variable administrative costs are related to creditary risk reduction (costs of checking creditworthiness and of approving and monitoring loans).
Source: KOCH (1990b), table 5-4

Risk costs of giving loans to SMEs are equally considered to be higher in the case of low-volume loans and small-scale customers. For most of banks and financial corporations in the three country samples, however, the opposite is true (see table 11): Average ratios of arrears within SME loan portfolios are generally lower than overall arrear ratios of the commercial loan business. In Colombia, the same also holds for actual losses due to bad loans after unsuccessful legal enforcement (ratios of 0.66 % for SME loans compared to an average of 0.88 % for all loans). Only nationally-owned private Ecuadorian banks seem to suffer larger losses on loans to small-scale enterprises (loss ratio of 4.15 %) than on other commercial loans. Nevertheless, all of these figures related to risk costs lie well below internationally observed loss ratios on SME loans of 10 % to 20 % of the respective SME loan portfolios.

After having collected separate data on the three cost components of loan business, *total costs* depending on loan volume can be calculated for each country sample, including all banks and excluding financial corporations for reasons of comparability. Assumed are constant costs of capital within each country sample (Colombia: 1.40 %, Ecuador: -34.49 %, and Peru: -58.17 %, see table 9). The structure of administrative costs found in the Colombian sample will be applied in the Ecuadorian and Peruvian samples as well. Furthermore, risk costs are set at constant loss ratios of 1.31 % in Colombia and 3.15 % in Peru according to loss ratios found in the respective country samples (see table 11). Increasing loss ratios with decreasing loan volumes in Ecuador will be

expenses average around 8 % of loan volume with the average probability of legally enforcing bad loans being below 0.40. Taking into account bad loan rations of 3 % to 15 %, it follows that multiplying administrative expenses on bad loans with enforcement probabilities and bad loan ratios will yield effective expenses below 0.5 %.

reflected through assuming risk-related loss ratios of 4.5 % for smallest loans and gradually decreasing ratios down to 0.5 % for very large loans.[15]

Table 11

Risk Costs of Loan Business

(average ratios in % of loan volume)

Country Sample, Financial Institutions	All Commercial Loans arrears	losses	SME Loans Only arrears	losses
Colombia	**3,30 %**	**0,88 %**	**2,79 %**	**0,66 %**
banks	*4,49 %*	*1,31 %*	*5,13 %*	*1,32 %*
- private-national	2,53 %	0,42 %	6,73 %	2,66 %
- private-foreign	2,93 %	1,04 %	3,40 %	0,83 %
- public	7,10 %	2,33 %	5,80 %	1,36 %
financial corporations	*1,52 %*	*0,30 %*	*0,45 %*	*0,00 %*
Ecuador (banks)	**15,48 %**	**1,57 %**	**8,85 %**	**4,15 %**
- private-national	18,49 %	2,20 %	10,50 %	4,75 %
- private-foreign	7,97 %	0,00 %	1,91 %	0,00 %
Peru	**5,91 %**	**not av.**	**1,66 %**	**not av.**
banks	*6,47 %*	*3,15 %*	*2,07 %*	*not av.*
- private-national	12,92 %	8,58 %	0,00 %	not av.
- private-foreign	0,75 %	0,07 %	0,00 %	not av.
- public	2,87 %	0,63 %	8,30 %	0,00 %
financial corporations	*0,35 %*	*not av.*	*0,00 %*	*not av.*

Note: Arrears are bad loans with more than 90 days of late payment of interest and principal; losses represent remaining financial burden after legal enforcement of payment.
Source: KOCH (1990), table A-52

The result of calculating total costs is given in table 12. The sum of costs decreases significantly with rising loan volume, providing strong evidence for the existence of cost-related reluctance on behalf of commercial banks when dealing with low-volume loans and small-scale credit customers. In order to motivate

[15] Note that effective risk costs in table 12 differ from loss ratios since cost reflecting risk premiums have to cover non-repayed portions of capital costs and administrative costs as well. In the case of larger loan volumes in Ecuador and Peru, negative values of real capital costs outweigh positive administrative costs, such that the negative sum of both costs causes effective risk costs to be lower than nominal loss ratios. See footnote 3 for the calculation of cost reflecting risk premiums.

banks to increase the share of small commercial loans within loan portfolios, some kind of cost subsidy for small loans could provide successful incentives.

Concluding this chapter on profitability, *net interest margins* of loan business in the three countries are analysed based on the range of interest rates prevailing in national financial markets at the time of the survey (see table 7). It turns out that even if highest loan interest rates are charged, loan volumes up to 0.5 Mill. in the respective national currency will on average yield negative net returns to banks in all of the three country samples (see table 12 and graph 3). Assuming even lower interest rates applying for loans to the SME-sector, positive net interest margins cannot be achieved at any loan volume. Again, there are very obvious incentives for banks to avoid high-cost low-volume loans when interest rates are set below cost-reflecting levels.

Typically, promotional loans in favor of SMEs are not financed through deposits collected by commercial banks, since funds are mostly provided by central banks or other development finance agencies. In these cases, commercial banks receive a certain cost margin generally ranging from 1 % to 6 % in real terms in the case of the three latinamerican countries. A look at the structure of administrative and risk costs in table 12 shows, however, that only at loan volumes above 5 Mill. in the respective national currency the sum of both costs will equal less than 6 %. Therefore, even official promotional loan programs in favor of small-scale enterprises comprise an element of creditary discrimination against very small firms applying for loans below cost-covering volumes.

3.3. Patterns of preference within the decision taking process

The fourth and last reason for a market-immanent discrimination of small-scale enterprises mentioned above relates to what is called a conservative, risk averse loan policy on behalf of commercial banks. Banks' focus on collateral as the primary criterion for approving loan applications is believed to put SMEs at a disadvantage against larger-scale commercial credit customers. In order to shed light at patterns of preference within the process of loan assessment and approval, an Adaptive Conjoint Analysis has been applied to a total of 53 financial intermediaries, among them 17 banks and 7 financial corporations in Colombia, 17 banks in Ecuador, and another 12 banks in Peru.

Contrary to ordinary analysis of preference, the Adaptive Conjoint Analysis is able to confront potential buyers of a product with individually designed combinations of several attributes of that same product. Through the assessment of different bundles of attributes with their positive and negative levels it is possible to estimate cardinal utility values that approximate the structure of preference of individuals in question.

Table 12

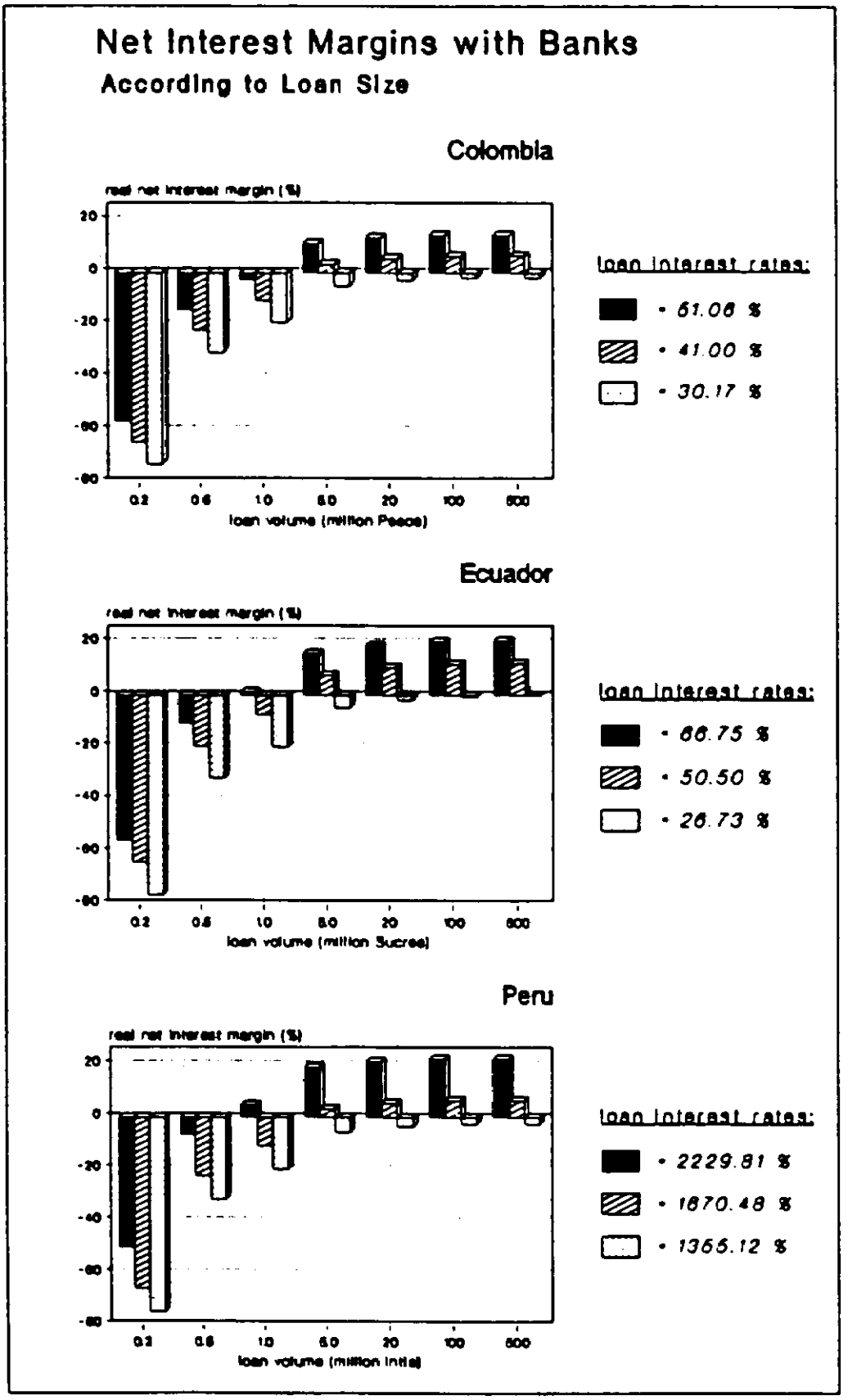
Total Costs of Loan Business and Net Interest Margins with Banks

(loan volume in Mill. of national currency; average costs and real interest margins in % of loan volume)

Loan Volume	Capital Costs	Admin. Costs	Risk Costs ratio	Risk Costs eff.costs	*Sum of Costs*	Net Margins with Loan Int. Rate: highest	middle	lowest
Colombia								
0.2	1.40	70.94	1.31	2.29	*74.63*	-56.71	-64.56	-73.01
0.5	1.40	28.95	1.31	1.73	*32.08*	-14.16	-22.01	-30.46
1.0	1.40	17.70	1.31	1.58	*20.68*	-2.76	-10.61	-19.06
5.0	1.40	4.02	1.31	1.40	*6.82*	11.10	3.25	-5.20
20	1.40	1.84	1.31	1.37	*4.61*	13.31	5.46	-2.99
100	1.40	0.83	1.31	1.36	*3.59*	14.33	6.48	-1.97
500	1.40	0.77	1.31	1.36	*3.53*	14.39	6.54	-1.91
loan interest rates assumed when calculating net interest margins:								
highest interest rate:		51.06 % effective yearly			= 17.92 % real yearly			
middle interest rate:		41.00 % effective yearly			= 10.07 % real yearly			
lowest interest rate:		30.17 % effective yearly			= 1.62 % real yearly			
Ecuador								
0.2	-34.49	70.94	4.50	6.43	*42.88*	-55.53	-64.04	-76.49
0.5	-34.49	28.95	4.00	3.94	*-1.60*	-11.05	-19.56	-32.01
1.0	-34.49	17.70	3.50	3.02	*-13.77*	1.12	-7.39	-19.84
5.0	-34.49	4.02	2.50	1.79	*-28.68*	16.03	7.52	-4.93
20	-34.49	1.84	1.50	1.03	*-31.62*	18.97	10.46	-1.99
100	-34.49	0.83	1.00	0.67	*-32.99*	20.34	11.83	-0.62
500	-34.49	0.77	0.50	0.33	*-33.39*	20.74	12.23	-0.22
loan interest rates assumed when calculating net interest margins:								
highest interest rate:		66.75 % effective yearly			= -12.65 % real yearly			
middle interest rate:		50.50 % effective yearly			= -21.16 % real yearly			
lowest interest rate:		26.73 % effective yearly			= -33.61 % real yearly			
Peru								
0.2	-58.17	70.94	3.15	3.67	*16.44*	-50.14	-66.06	-75.03
0.5	-58.17	28.95	3.15	2.30	*-26.92*	-6.78	-22.70	-31.67
1.0	-58.17	17.70	3.15	1.94	*-38.53*	4.83	-11.09	-20.06
5.0	-58.17	4.02	3.15	1.50	*-52.65*	18.95	3.03	-5.94
20	-58.17	1.84	3.15	1.42	*-54.91*	21.21	5.29	-3.68
100	-58.17	0.83	3.15	1.39	*-55.95*	22.25	6.33	-2.64
500	-58.17	0.77	3.15	1.39	*-56.01*	22.31	6.39	-2.58
loan interest rates assumed when calculating net interest margins:								
highest interest rate:		2,229.81 % effective yearly			= -33.70 % real yearly			
middle interest rate:		1,670.48 % effective yearly			= -49.62 % real yearly			
lowest interest rate:		1,355.12 % effective yearly			= -58.59 % real yearly			

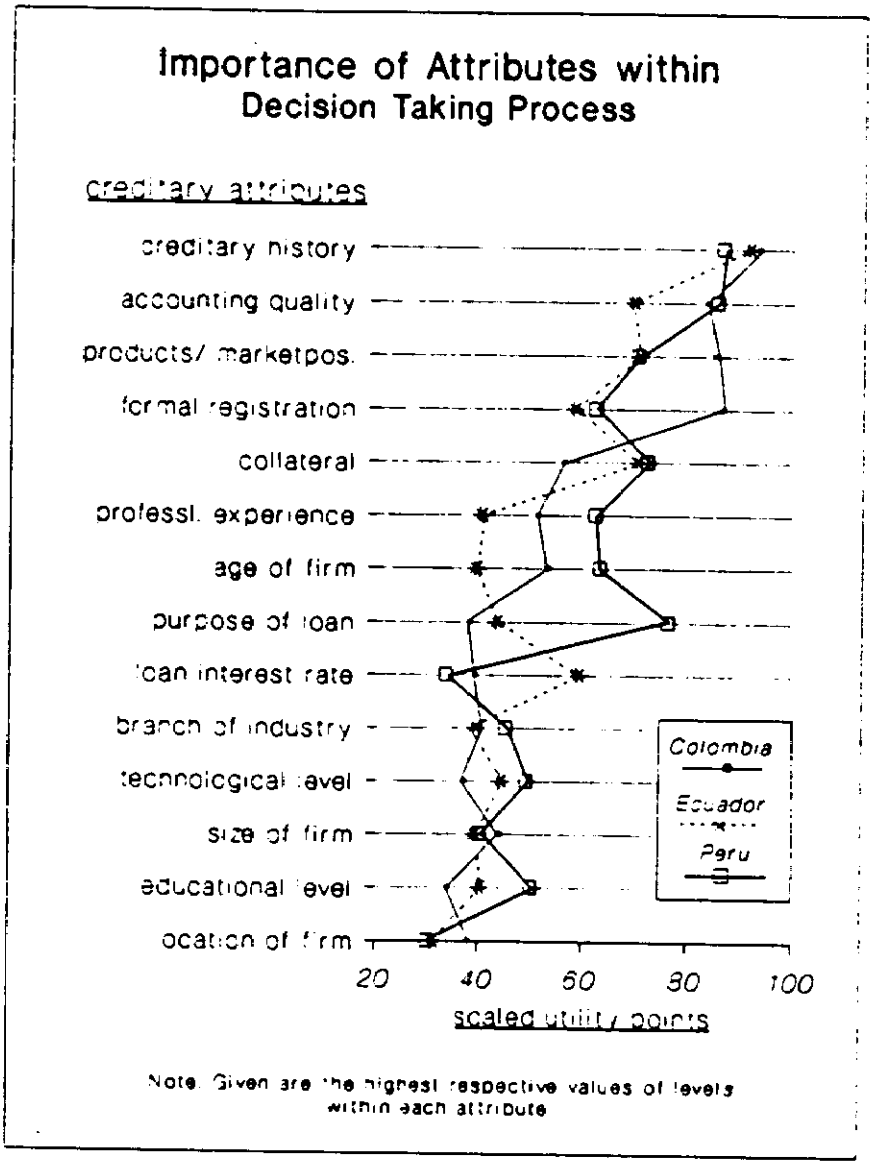
Source: KOCH (1990), table A-53

Graph 3


Net Interest Margins with Banks
According to Loan Size
Colombia
real net interest margin (%)
20
0
-20
-40
-60
-80
0.2
0.5
1.0
5.0
20
100
500
loan volume (million Pesos)
loan interest rates:
• 61.06 %
• 41.00 %
• 30.17 %
Ecuador
real net interest margin (%)
20
0
-20
-40
-60
-80
0.2
0.5
1.0
5.0
20
100
500
loan volume (million Sucres)
loan interest rates:
• 66.75 %
• 50.50 %
• 26.73 %
Peru
real net interest margin (%)
20
0
-20
-40
-60
-80
0.2
0.5
1.0
5.0
20
100
500
loan volume (million Intis)
loan interest rates:
• 2229.81 %
• 1670.48 %
• 1365.12 %

In the case of latinamerican banks, loan approval or disapproval has been defined as the "purchase decision" of a bank, with small-scale enterprises representing the "products" to be purchased. A total of 14 attributes characterizing SMEs' creditworthiness have been included in the analysis, each of them with a range of three to nine different attribute levels (see table 13). Interviews in banks were held with representatives of the respective credit departments in order to get an accurate picture of typical loan policy.

Graph 4



The results of this preference analysis show a surprisingly large degree of correspondence between banks in the three country samples. Looking at the highest scaled utility values for levels of each attribute draws the attention to the following five key criteria in the process of evaluating loan applications (see table 13 and graph 4): First, creditary history of the applicant with the same bank; second, quality of accounting records; third, product quality and market

position; fourth, formal registration status of the small firm; and fifth, value of available collateral. In the case of Peruvian banks, loan purpose plays an inportant role as well, which is due to the fact that under hyperinflation long-term loans for the purpose of investment into fixed capital are not provided.

In all of the three samples, punctual repayment of past loans proves to be an attitude that is extremely appreciated by banks. In turn, small firms that once defaulted on repaying commercial loans will find themselves in a very difficult position when reapplying for external finance with the same bank. Hence, a central objective of any creditary SME promotion should be to avoid by all means late payments on interest and principal once a loan has been approved and disbursed to a small-scale enterprise. There are various forms of credit guarantee schemes that can be of valuable use with respect to this objective.

Preparing high-quality accounting records and assuring the formal registration of a small firm are other decisive prerequisites for sucessfully applying for commerical bank loans and should be incorporated into promotional programs. The same is true of collateral, which is why adequate substitutes for collateral of an unquestionable value have to be designed and provided for the ready use by commercial banks. Forms of collective, mutual guarantees among groups of small-scale enterprises are promising examples of such collateral equivalents.

Unexpectedly low utility values are shown for the level of loan interest rates. One might have thought that given high administrative costs of providing loans to SME customers, banks would aim at assuring the highest legally possible interest revenue. Among Peruvian banks, however, there is even a tendency to prefer lower and middle levels of interest rates over very high rates of interest. Questioned about the underlying motivation of such preferences, bankers stressed their concern that very substantial interest burdens could be counterproductive since they might put too much pressure on a small firm, thereby reducing the expected probability of loan repayment. These observations support hypothesis in the literature on the existence of a maximum interest rate beyond which loan supply will be decreasing.[16]

Differentiating according to types of financial institutions, it turns out that public banks are not reluctant to deal with very small and rather young enterprises at sub-urban or rural locations and with accounting records of only poor quality. The opposite is true of foreign-owned commercial banks which are most conservative with respect to small and informal enterprises. Private-national banks are positioned between these two extremes.

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[16] See KOCH (1990), Chapter 2.4.3.

Table 13

Scaled ACA-Utility Values for Credit-Related SME Attributes

(scaled average utilities, range: 0 - 100)

Attributes, Levels	Colombia	Ecuador	Peru	all banks
1. Loan interest rate (effective, yearly)				
10 15 % (Peru: 5 % monthly)	0	0	0	
20 20 % (Peru: 10 % monthly)	0	0	0	
30 25 % (Peru: 15 % monthly)	6	3	0	
40 30 % (Peru: 20 % monthly)	14	21	7	
50 35 % (Peru: 25 % monthly)	24	38	11	
60 40 % (Peru: 30 % monthly)	39	59	33	
70 50-60% (Peru: 35 % monthly)	10	46	12	
80 70-90% (Peru: 40 % monthly)	0	0	8	
90 100% + (Peru: 45% + monthly)	0	0	0	
2. Size of firm (number of employees)				
10 micro: 0 to 4 employees	3	4	4	4
20 small: 5 to 14 employees	21	29	26	25
30 medium: 15 to 49 employees	44	39	40	41
3. Age of firm				
10 newly created enterprises	8	8	2	7
20 age of firm: 1 year	24	18	14	20
30 age of firm: 5 years	44	36	39	40
40 age of firm: 15 years	50	37	58	48
50 age of firm: over 15 years	53	39	62	50
4. Collateral available				
10 no collateral	0	0	0	0
20 real estate (without mortgage)	7	0	0	3
30 guarantors	1	3	2	2
40 guarantors with real estate	26	17	19	21
50 cession of working capital	30	35	35	33
60 mortgage	48	51	45	48
70 cession of stocks and bonds	56	70	72	64
5. Creditary history				
10 customer with bad loans	0	1	4	1
20 customer with punctual repayment	93	91	86	90
30 customer without loans	53	49	39	49
40 new, unknown customer	26	17	4	18
6. Accounting quality				
10 records not existent	0	2	0	1
20 records of low quality	3	9	16	8
30 records of high quality	83	69	85	79

(table 13 continued)

Attributes, Levels	Colombia	Ecuador	Peru	all banks
7. Educational level of entrepreneur				
10 primary school	2	3	1	2
20 secondary school	15	19	27	19
30 technical school/ university	34	40	50	40
8. Professional experience of entrepreneur				
10 no professional experience	0	0	0	0
20 parents' small enterprise	31	20	14	23
30 own small enterprise	56	47	28	47
40 technical employee	31	34	45	35
50 management position	50	40	62	50
9. Formal registration				
10 formal status	86	58	62	72
20 informal status	0	0	0	0
10. Purpose of the loan				
10 purchase of fixed capital	19	16	0	14
20 purchase of working capital	38	43	76	48
30 consumption	0	2	2	1
11. Branch of industry				
10 industry (production)	43	39	45	42
20 services	3	7	6	5
30 commerce	10	23	30	19
12. Location of enterprise				
10 rural	7	6	17	9
20 sub-urban	12	20	20	16
30 urban	36	31	30	33
13. Technological level				
10 simple manufacturing	11	12	21	13
20 semi-automation	36	44	49	42
30 sophisticated machinery	21	26	15	21
14. Product quality/ market position				
10 high/ good	84	70	70	77
20 average/ fair	10	8	9	9
30 low/ poor	0	0	0	0

Source: KOCH (1990), table A-54

In sum, preferences of banks' decision makers in the three countries do not provide strong evidence for the hypothesis that collateral plays the major role in the process of loan assessment and approval. Promotional efforts focussing only on the provision of collateral are therefore of limited value since there are other attributes and characteristics of larger weight in the loan decision process.

4. Options for Development Policy Makers

An effective policy of financially promoting SMEs in developing countries should aim at reducing the mentioned reasons that are responsible of the creditary discrimination of small firms on formal credit markets. Among market-immanent causes are the substantial costs of applying for commercial loans in the form of monetary expenses and time-related opportunity costs. These costs need to be reduced, for example by establishing consultancy services that are free of charge for small-scale enterprises applying for external finance. High levels of transactions costs on behalf of banks and financial corporations - the major explanation of SMEs' creditary discrimination - could be lowered through transfer of banking knowhow from banks in industrial countries to partner institutions in the developing world. There are inter-bank cooperations of that kind which prove to be very successful in a number of bilateral projects.

Concerning high levels of banks' risk costs associated with SME-loans, various forms of mutual guarantee and savings associations among demanders of commercial finance have been tested successfully in some countries. It seems, however, that so far no corresponding effort has been made in order to reduce risk costs on the supply side of the market. Such effort should include an improvement of loan application evaluation criteria by introducing more future-oriented and qualitative indicators of creditworthiness that would check personal qualification and motivation of the entrepreneur as well. Prevailing liberal procedures to enforce loan repayment need to be modified such that banks will take legal action long before the usual three months period of overdue payments. Another risk reducing innovation should be the introduction of sophisticated national communication networks between commercial banks that would allow participating institutions to receive a complete record of an applicant's creditary history with other banks of that same country.

The analysis of profitability showed very clearly that interest rate ceilings set at low levels do not permit to cover banks' high administrative costs in the case of low-volume loans. Governmental interventions into financial markets need to take into account these findings, possibly by allowing for higher SME loan interest rates or by providing some kind of cost subsidy when loans are assigned to small-scale commercial customers.

Finally, financial SME-promotion should utilize findings of the analysis of preferences conducted among banks in the three latinamerican countries. Apart from collateral, there are other decisive criteria in the loan assessment process such as creditary history, quality of accounting records, product quality and market position, and the formal registration of the small-scale applicant. Working on the fulfillment of theses prerequisites will strongly improve SMEs' chances of obtaining external capital from commercial banks.

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