

FINANCIAL LIBERALIZATION AND BANK LENDING BEHAVIOR IN TURKEY

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Abstract

The literature indicates that financial liberalization improves the efficiency of credit allocation by reducing credit rationing. This argument, based on the availability doctrine, states that financial liberalization increases the amount of investable funds; hence, reduces the number of loan applicants that are turned down by banks. Availability of funds, however, does not necessarily create access to borrowers who were previously rationed by banks. What are critical are the lending patterns and criteria of banks that determine to whom the loanable funds are allocated.

This empirical study examines how financial liberalization changed the lending behavior of banks and what implications this change has had on the efficiency of credit allocation in Turkey. The findings show that financial reforms brought modernization and market oriented management techniques that improved banks' ability to screen their customers. However, the credit rationing attitudes of banks were not eliminated. The benefits of financial liberalization were partly offset because of the unstable macro-economic environment and the increased cost of funds to the banking sector. Liberalization of interest rates in an inflationary environment increased the level of uncertainty and market risk that adversely affected banks' lending behavior. Instead of financing private investment, bank credits were channeled towards low risk financial instruments, such as Government bonds and Treasury bills, short term working capital for domestic trade and consumer credits.

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1. Introduction

The objective of this paper is to examine the changes in bank lending behavior and to analyze the impact of financial liberalization on the microeconomic efficiency of credit allocation in Turkey. The findings of this study indicate that financial reforms did not eliminate the credit rationing attitudes of banks, but brought modernization and new management skills that improved banks ability to screen their customers.

In Turkey, Financial liberalization policies that were implemented in an inflationary environment increased the level of uncertainty and market risk that, in turn, affected banks lending behavior adversely. The nominal interest rates adjusted according to the expected rate of inflation to compensate for the decrease in the real value of the loan principal. This adjustment, in turn, forced borrowers to repay their loans faster than before and a large number of firms went bankrupt or became insolvent. As a consequence, in the post liberalization period, banks began to prefer customers in sectors with low inflation risk.

Low risk financial instruments, such as short term working capital for domestic trade, consumer credits, Government bonds and Treasury bills became the most popular lending forms among commercial banks. Hence, financial liberalization changed the composition of the banks' loan portfolio towards short term lending and public sector debt instruments. The implication of this result was that, credit worthy customers belonging to sectors with a high inflation risk had less chance to have access to the formal financial sector than the similar borrowers from other sectors of the economy. Bank credits were channel to consumer loans and trade finance instead of investment finance.

The Turkish experience indicates that financial liberalization is a necessary but not a sufficient factor to improve the microeconomic efficiency of credit allocation. This is because; banks are sensitive to economic instability and the market risk that affects the default risk of the borrowers. Economic instability can change the expected rate of return on banks' loans by changing the real interest rates and the default risk of the borrowers. Hence, economic stability is essential to improve the efficiency of credit allocation at the microeconomic level.

2. Analytical Framework

In the economic literature, credit rationing attitudes of financial institutions are generally accepted as a major cause for inefficiency in credit allocation. What makes financial institutions to ration credit, however, is described differently by financial liberalization theory and the credit rationing theory. The financial liberalization literature argues that credit rationing is a result of financial repression. In other words, because of the exogenous constraint caused by interest rate ceilings, the credit market does not clear (i.e., there is an excess demand for credit). Therefore, banks have to ration credit to clear the market.¹

The credit rationing theory however, argues that credit rationing may be a result of banks' attitude toward risk (i.e., an endogenous constraint)². Even if there is no exogenous -constraint to prevent the market mechanism from working, banks may ration credit due to their risk avoiding attitudes.

Following these two different lines of thought, the micro level efficiency of credit allocation has been discussed widely in two separate bodies of literature. However, only a limited number of empirical researches attempted to analyze the microeconomic efficiency of credit allocation. These empirical studies are: Sines (1979), Tybout (1980, 1983, and 1984) and Cho (1988). In Sines's (1979) and Tybout's (1980, 1983, and 1984) research, firms' Investment behavior is used as a proxy in order to test the allocative efficiency of credit in financially repressed economies. Their argument is that the inefficiency and low productivity of small manufacturing firms, in comparison to large productive firms, is due to the credit rationing effect of financial repression where, cheap credit is provided to large firms and no credit or very expensive credit is extended to the smaller firms. Although this argument is consistent with the underlying theories of financial liberalization, it has two major shortcomings. The first one is the question of what direction is the cause and effect relationship between the variables in the economic analysis. In other words, Sines(1979) and Tybout's(1980, 1983,1984) empirical findings can also be interpreted the other way around, that is to say, because of the inefficiency and low productivity of small firms, credit is allocated to large productive firms. The second shortcoming of these studies rests upon the fact that though it is important, credit availability is only one factor affecting the productivity of a manufacturing firm. There are a number of other factors (e.g. organization and management of the firm, etc.) which have a

considerable influence on the overall efficiency and productivity of a firm.

In Cho's (1988) research the differences in the cost of borrowing in different sectors of the Korean economy are compared in order to find the impact of financial liberalization on the allocative efficiency of credit. This analysis is based on the assumption that financial liberalization induces the financial sector to be more competitive and integrated; therefore, firms face similar cost of borrowing and access to the credit markets. Differences in cost of borrowing across different sectors, however, may not only be due to different degrees of access to the credit markets, but simply because of the differences in the riskiness of different sectors, or differences in the cost to financial institutions of serving small versus large firms. It may not be realistic to expect that financial liberalization can lead to similar costs of borrowing to different borrowers in different risk categories.

As we see, the above empirical studies concentrated on the demand side, i.e. borrower's investment behavior and performance, whereas insufficient information was provided with respect to the supply side, i.e. banks behavior and lending policy. Therefore, the potential role of financial institutions in improving the efficiency of credit allocation was largely neglected. It is well known that, in less developed countries, the financial sector is dominated by banks, and therefore, the performance of the banking sector has a substantial influence on the overall efficiency of domestic resource mobilization. This study aims to bridge this gap by providing valuable information on bank lending behavior and the efficiency of credit allocation under financial liberalization.

3. The Rationality of Credit Rationing

Credit rationing is generally defined as a situation where the demand for loans exceeds the supply of loans at the loan interest rate determined by banks. In other words, although there is excess demand for credits at a given interest rate, banks do not respond to it by increasing loan interest rates to the market clearing level where demand becomes equal to supply. Therefore, the excess demand is rationed by non-price criteria.³

The phenomenon of credit rationing in a modern sense was analyzed by Hodgman (1960) who attempted to explain credit rationing with a new approach of lender attitude toward risk. In the literature, two types of credit rationing have been

examined. In the first case, borrowers receive less than the amount they want to borrow at a given interest rate (Keeton, 1979, Koskela, 1976). In the second case, however, some borrowers receive as many loans as they want while other identical borrowers do not receive loans, even if they are willing to pay a higher interest rate (Keeton, 1976; Stiglitz and Weiss, 1981).

The second type of credit rationing has important implications for the efficiency of credit allocation and it is referred to as "true rationing" by Stiglitz and Weiss (1981). Stiglitz and Weiss (1981) argue that, under imperfect information, the expected return of a bank is a decreasing function of the loan interest rate it charges because, an increase in the interest rate also increases the riskiness of a loan which in turn decreases bank's profitability⁴. The adverse selection effect is used by Stiglitz and Weiss to describe a situation that, in practice, high interest rates discourage safe borrowers, and at the same time encourage risky borrowers to borrow. This is because, high risk investors know that their probability of repaying the loan is low, but if their investment becomes successful they receive all profit, while banks only get paid the fixed amount of interest charged. On the other hand, if their investment fails, the bank shares the loss with the investors. Hence, as the interest rate rises, banks riskiness increases and this may offset bank's gain from the higher loan rate.

In addition, Stiglitz and Weiss (1981) argue that the high interest rates also affect the borrowers' investment decisions (i.e. incentive effect) in such a way as to increase banks' riskiness on loans. High interest rates decrease the rate of return on projects. This induces borrowers to invest in risky projects with higher rates of returns, but lower probabilities of success. Under these circumstances, if a bank increases interest rates on loans to high levels, it will require perfect information to screen and identify the borrowers who are more likely to repay their loan. In real world, where information is costly and imperfect, this may be very difficult. Hence, beyond a certain interest rate, banks do not increase their interest rates to respond to the excess credit demand since this would probably reduce their net rate of return.

4. Methodology and Sampling

4.1. Methodology

It is clear that abolishing interest rate ceilings is not a solution to credit rationing

because credit rationing may exist as a form of rational lender behavior even in the liberalized financial markets. Nevertheless, financial liberalization may improve allocation of credit by changing the bank lending behavior from non-price rationing to price rationing. Non-price rationing can be defined as a bank attitude where potential borrowers are evaluated on the basis of personal contacts, bank-business ownership ties, and political interest; Whereas, price-rationing is a rational lender behavior that evaluates potential borrowers on the basis on their capital structure, sales, cash flows, and the management skills. In other words, price-rationing is assessing the potential borrowers on the basis of their capability and willingness to repaying their debt. In some cases government selective credit policies (forced lending requirements) are also characterized as inefficient lending criteria.⁵ Selective credit policies are excluded here from our analysis because they are policy related inefficiency, rattier than an inefficiency of the lending criteria of banks.

In this research, the impact of financial liberalization on bank lending behavior is tested by using data obtained through a special survey of banks in Turkey and face to face interviews. The questionnaire consisted of multiple choices; open ended, and importance scale questions. The objective was to find whether the financial liberalization improved the allocative efficiency of financial intermediation in Turkey by changing bank lending behavior from non-price rationing criteria to price rationing criteria.

4.2. Sampling

In 1980, the beginning of the liberalization period, the total number of banks in Turkey was 43. This number had risen to 62 by the end of 1989. During the same period, the number of state banks decreased from 13 to 11, the number of private banks slightly increased from 26 to 30 and, the number of foreign banks increased substantially from 4 to 21. On the other hand, 10 out of 43 banks which existed in 1980, had disappeared by the end of 1989.ⁿ These banks were small private commercial banks which went bankrupt or had severe difficulties in the early 1980s and had to merge with larger banks. As a result, the population of banks in Turkey has changed structure dramatically during the liberalization period, 1980-1989. Given this change and the nature of our questionnaire that includes comparative questions concerning bank lending policies during pre and post liberalization periods, our

sample of banks was chosen mainly from those that were known to exist in both pre and post liberalization periods.

The sample size is 31, and is composed of 7 state commercial banks, 14 private commercial banks, 7 foreign banks and 3 development banks (1 private and 2 state). The sample covers 50 percent of the bank population in 1989 however; the credit share of the sample is as large as 94.31 percent of the total credit stock during that period. In the sample, 24 out of 31 banks (i.e. 80% of the sample) existed before the financial liberalization period. Therefore, the sample largely satisfies the requirements of our research in two important respects. First, it consists of relevant banks that are able to give reliable information and second, it has a large market share in total credits of the banking sector that enables us to discover on what basis the major share of bank credits was allocated during the liberalization period.

5. Empirical Results

5.1. An Overview

The results of the analysis suggest that bank lending policies have changed dramatically after the financial liberalization policies were implemented in Turkey. From a perspective of credit allocation, there were some negative, unexpected developments as well as some important improvements in customer assessment.

In 1980, the restructuring process of the Turkish banking sector started with policies that freed interest rates and allowed the operations of foreign banks in the domestic market.⁷ These two factors brought about a substantial change in banking operations and had a major influence on the efficiency of credit allocation. From the interviews, a clear consensus emerges that the Turkish banking sector modernized itself substantially since foreign banks have started to operate in the domestic market. Before the financial liberalization, Turkish banking was concentrated on collecting deposits because available funds were in short supply and there was an excess of demand for credit. During that period, banks' performance was largely evaluated on the basis of the volume of their deposits. However, since the interest rates were controlled, banks had to find non-price inducements to attract savers. Advertisement was used widely, and banks tried to attract savings with the large number of branch offices and impressive buildings. On the other hand, the bank personnel had poor

qualifications and were poorly trained. Fewer than 10 percent of bank employees were university graduates.⁸ Accordingly, the quality of the banking services was low and there was little incentive for improvements due to the uncompetitive structure of the banking sector.

This picture has changed since financial liberalization was implemented in Turkey. Foreign banks introduced new services, advanced technology, and market oriented management skills into the domestic banking sector. These factors and deregulation of interest rates induced Turkish banks to employ young professionals, adapt new technology, conduct market research and develop their marketing activities.⁹¹⁰

During the pre-liberalization period bank loan market was a sellers' market and there was little motivation for banks to undertake marketing activities. Thus, marketing was an alien concept for Turkish banks. Foreign banks however, came with their marketing Strategies and established their marketing departments. In a short time, Turkish banks .became aware of this new concept and developed their own marketing strategy.¹¹

- Before financial liberalization, also there was a heavy reliance on central decision making at the head office, whereas branch offices were mainly passive actors. With the implementation of financial liberalization policies, this has changed and branch offices became involved in the decision making process.¹²

These developments indicate that not only advance technology and new products but also a market oriented management approach was being adopted by Turkish banking. As a consequence, the banking sector modernized considerably during the post-liberalization period.

Nevertheless, not all effects of liberalization were positive in terms of improving the allocative efficiency of credit. From the interviews and results of the questionnaire a common problem of the banking sector appears to be the increased riskiness of the credit markets that was caused by high and variable rates of inflation and high market interest rates.¹³ In the early 1980s the first attempt to abolish both deposit and loan interest rate ceilings resulted in a very intense completion and followed by a financial crisis in 1982-1983.¹⁴ Between 1983-1988, interest rates were partly controlled by the authorities in order to provide stability in the financial sector. Because of the high inflation rate, the nominal interest rates had to be kept high to provide a positive real

return to the depositors. By the end of 1988, controls on interest rates had been totally removed once again and loan interest rates rose to around 80 percent.

5.2. Changes in Bank Lending Behavior in The 1980s

The 1980s was a successful decade for banks in terms of attracting savings. However, the banks' ability to allocate these funds efficiently was limited largely because of the riskiness of the financial market. During the first half of the decade (1980-1985) banks' losses from loan defaults increased substantially. Ex-post it appears that credits had been inefficiently allocated. In the second half of the decade banks took measures to reduce their default costs in a risky environment. Though this seems to be a step towards improving performance, our field survey indicates that the risk avoiding attitudes of banks also created a credit rationing effect in the banking sector.

In our questionnaire, banks were asked to indicate the most significant changes in the credit market and in their lending attitudes during the post-liberalization period. 45 percent of banks indicated that they stopped lending to the high risk borrowers, 23 percent of banks indicated that competition increased in credit markets and 13 percent of banks indicated that they switched lending to larger firms.

	Percentage ¹⁵
a) We switched lending to larger firms	13
b) We require more information	10
c) We chose to lend to certain sectors	6
d) We charged a higher risk premium	3
e) We stopped lending to the higher risk borrowers	45
f) Competition increased in credit markets	23
g) We increased lending to small firms	0
h) Other – Please specify	0
	100

The clear message from these answers is that, in the 1980s banks became more risk averse in their behavior than before. From most of our face to face interviews, the reason for this change appears to be the high market interest rates.¹⁶

The positive side of this change is that banks started to put more effort to identify the credit worthy customers by seeking more information and conducting financial analysis. On the other hand, banks started to prefer larger, established firms to small

firms.¹⁷ The largest private commercial bank of Turkey points out that although it has 70,000 borrowers, the major part of the credits are concentrated on the largest 3,800 firms.

The interviews also showed that banks preferred to lend to their existing borrowers instead of lending to the new loan applicants.

Majority of banks stated that, in an inflationary environment it is very difficult to determine the real performance of enterprises from financial statements. Hence, it is risky to make loans to new customers. A safer strategy is to lend to old customers where banks has a history of dealings.

Banks also tried to reduce the inflation risk by either reducing the term to maturity of their loans or, lending in foreign currencies in order to protect their principal and interest repayments from domestic inflation.

5.3. Competition Strategies of Banks in Turkey

Financial liberalization, in particular, allowing foreign bank operations in Turkey, created a competitive environment in the credit market. Domestic banks had to adopt new strategies in order to avoid losing their creditworthy customers to the foreign banks. In our questionnaire, the new lending strategies of domestic banks were indicated as following.

	Percentage ¹⁸
a) Advertisement	6
b) Differential interest rate	19
c) Product differentiation	12
d) Improving the quality of service	32
e) Introducing advanced technology	6
f) Cutting the operational costs	3
g) Determining the target clients and approaching them	0
h) Other - Please specify	0
	100

It is interesting to see that 32 percent of surveyed banks chose "Improving the Quality of Service" as the most important strategy that they use to compete with their rival banks. This involves processing the loan applications faster, disbursing the loans quicker, and designing the loan repayment according to the specific needs of the borrower. Other two significant strategies adopted by banks are "Determining the

target clients and approaching them" (22%) and Differential interest rates"(19%). These strategies were brought into the market by foreign banks and later adopted by the domestic banks.

5.4. Banks' Attitude towards High Risk Projects

The financial liberalization theory suggesting that under the free interest rate policies interest rates would be adjusted according to the riskiness of the borrower which would allow productive and risky borrowers to borrow. In our survey, 78 percent of the respondent banks answered that if a high risk-high productive borrower applies, they decide not to lend. 13 percent of these banks would lend only if the borrower had 100 percent collateral.

On the other hand only 6 percent of these banks seem to prefer to lend by charging higher interest rate and similarly, only 3 percent of banks answered that they would lend but less than the amount that the borrowers wanted.

	Percentage ¹⁹
a) You decide not to lend	78
b) You lend but charge higher interest rate	6
c) You lend less than the amount that the borrower wants	3
d) Other - please specify *	13
	100

* We ask 100 percent collateral.

The above findings support the credit rationing theory that for banks it is not profitable to increase interest rates to the high levels since this would increase borrowers' default risk and reduce the expected rate of return to banks. This is particularly true in an unstable macroeconomic environment where high and volatile inflation rate changes the rate of return on investment projects and affects the capability of the borrowers to pay their loan back.²⁰

During the post-liberalization period in Turkey, banks also became aware of the information asymmetries between lenders and borrowers. A large number of banks adopted a systematic approach in information gathering for the first time. In our survey, 26 percent of the banks indicated that they did not have intelligence units during the Pre-liberalization period. After the financial crisis in 1982-83 banks started

to collect and process information systematically to choose the most creditworthy customers.

On the other hand, for the first time in 1989, banks introduced consumer credits in order to diversify their market risk and also to utilize their surplus funds. Within one year almost all state and private commercial banks started to give consumer credits. As a new financial product, consumer credits became increasingly popular both with banks and consumers for different reasons. For banks, consumer credits means low risk-high rate of return lending because, banks' risk are diversified among a large number of small borrowers. Also, the short term nature of the loans reduced the amount of inflation risk. For consumers, this new product was an opportunity to buy cars, furniture and clothes, and pay them in monthly installments.

Banks interest expenses increased in average, from 6.5 percent in 1979 to 32.9 percent in 1984 and 51.8 percent in 1989.²¹ This was due to positive real interest rate policies under the inflationary environment of Turkey. On the other hand it is interesting to see that despite the liberalization policies, banks' reserve requirements and liquidity ratio were kept at high levels. Until 1985, reserve requirements were above 25 percent, between 1986 and 1988 reserve requirements was reduced to around 15 percent, however, in 1989 and 1990 it was raised again to 25 percent. In addition, the liquidity ratio was always kept around 12 percent until 1988. In 1988 the liquidity ratio was raised to 26.5 percent and reduced to 10 percent in 1989 and 1990. The banking sector was still partly repressed and financial intermediation was heavily taxed due to high reserve and liquidity ratios.

With the high cost of loanable funds, the risk avoiding behaviors of banks are understandable. The banks searched for other lower risk investment alternatives, like consumer credits and government treasury bills. Nevertheless this has important implications for the development of private enterprises that needs credit for investment.

6. Conclusion

The empirical findings indicate that in Turkey, the benefits of financial liberalization were partly offset because of the unstable macro-economic environment and the increased cost of loanable funds of the banking sector. During the first years of the financial liberalization (1980-1983), banks incurred high default costs. In the later years, however, banks became risk avoiders and started to lend on the basis of

collateral. Therefore, certain groups of borrowers were systematically rationed in the credit markets. For well known holding companies, with established business activities and plentiful collateral, the credit market became a buyers' market since the banking sector accumulated a large volume of costly investable funds. Furthermore, banks shortened the loan terms to avoid inflation risk.

According to our findings, there is little evidence to support the view that in Turkey the allocative efficiency of credit has been greatly improved since financial liberalization was implemented. The role of liberalized financial markets in promoting allocative efficiency in an environment of stable prices is likely to be quite different than liberalization in an unstable, inflationary situation. Banks had to act so as to avoid default risk in a situation where the high inflation rates and nominal interest rates made it extremely difficult to determine the true credit worthiness of the borrowers. As a result, non-price credit rationing remained, and funds were allocated to low risk investments and towards the financing of consumption and trade.

Footnotes:

1. See Jaffee (1971), McKinnon (1973) and Shaw (1973) for early studies on availability doctrine and credit rationing.

2. See Stiglitz and Weiss (1981).

3. The credit rationing literature emerged in the late 1950s and developed with a substantial number of studies by Hodgman (1960), Jaffee (1971), Jaffee and Russell (1976), Koskela (1976), Baltensperger (1978), Keeton (1979), Stiglitz and Weiss (1981), Ordoover and Weiss (1981), Cho (1984), Williamson (1986), and Jaffee and Stiglitz (1990).

4. "...Banks making loans are concerned about the interest rate they receive on the loan, and the riskiness of the loan. However the interest rate a bank charges may itself affect the riskiness of the pool of loans by either: 1) sorting potential borrowers (the adverse selection effect); or 2) affecting the actions of borrowers (the incentive effect). Both effects derive directly from the residual imperfect information which is present in loan markets after banks have evaluated loan applications."(Stiglitz and Weiss, 1981, p.393)

5. See Virmani (1985) and IVIorris (1985) for problems related to government

selective credit policies.

6. *These banks are Istanbul Bankasi, Anadolu Bankasi, Cay Bank, Hisarbank, Isci Kredi Bankasi, Kocaeli Bankasi, Ortadogu Iktisad Bankasi, Bagcilar Bankasi, Istanbul Emniyet Sandigi, Devlet Sanayi ve isci Yatirim Bankasi.*

7. *See Pehlivan and Kirkpatrick (1993) for an analysis on the impact of foreign banks on domestic banking sector.*

8. *See Berk (1988) for an overview of the pre-liberalization banking in Turkey.*

9. *This sharp impact on traditional Turkish banking practices was expressed by a large private commercial bank as:*

"Financial liberalization was a threat for our bank. Competition in lending money has increased. Therefore professional information and higher quality services are required to compete in the market. We adopted high technology and new lending strategies".

10. *Unless specified otherwise all the quotations are from interviews or from open ended answers to the questions in the questionnaire. Note that all respondents were senior bank staff, i.e. General Managers or their deputies.*

11. *As one banker described the situation, "Traditional Turkish banking was based on collecting deposits and lending these deposits with a profit margin to the borrowers who were actively searching loans from banks. However, today, because of foreign banks, there are fundamental changes in Turkish banking. Turkish banks started to employ young professionals, conduct market research on their potential clients. Banks visit these target firms and offer credits where the interest rate is determined jointly by firms and banks."*

12. *"We have moved our marketing activities from head office to branches, making the branch managers more aware of their responsibilities, i.e. profit and losses. Financial analysis has become the sine qua non element of credit approvals."*

13. *During the 1980s nominal interest rates ranged from 42 percent to 80 percent and the rates of inflation ranged from 27 percent to 70 percent.*

14. *See Kopits (1986); and Cosan and Ersel (1987) for a review of financial reforms in Turkey in the early 1980s.*

15. *The percentage of total number of banks that chose each alternative as the most significant change in their lending attitudes.*

16. *"High interest rates increased the risk factor in the financial sector. We increased investigation on the borrowers and began to ask collateral before we lend money. In that respect, mortgaged lending became very common in Turkey. Nevertheless, mortgaged lending is not a 100 percent solution to high risk lending because as the interest rate is around 80 percent our cost burden will increase substantially in the case of even a short delay in loan repayments".*

17. The reason for the shift from small to larger firms is explained by a larger number of General Managers as follows: *"Loan interest rates are very high. Safe, established firms reduced their demand for credit whereas there are many new and small companies demanding credits. We find it very risky to lend to these new firms since they have a short history and inadequate business records. We ask 100 percent collateral in order to extend credits to new and small firms but we still prefer to lend large and established borrowers."*

18. The percentage of total number of banks that chose each alternative as the most significant lending strategy.

19. *The percentage of total number of banks.*

20. *These findings are also in line with the statement of the World Development report, 1989: "Because of their limited ability to identify risks and monitor behavior, lenders tend to require collateral and to ration credit to the most creditworthy borrowers rather than to charge higher interest rates on riskier loans. Borrowers with little collateral are likely to be the most affected by credit rationing." (pp. 34).*

21. See Unal T., S. Uzunoglu, and K. Alkin (1990) for the calculations of banks interest expenses.

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