Regional Banking Strategy: an introductory note for the Brazilian case

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INTRODUCTION

THEORETICAL REVIEW

In the last 30 years there is a extensive body of literature on the role of financial systems on growth, the so-called 'finance – growth nexus'. To be more precise, this interest can be traced back to the work of Schumpter (1911), when he describe the role played by the bank system in the provision of credit to the entrepreneur, who is carrying the innovation. Joan Robinson (1958) also discussed the relationship between firms and banks, stating that finance follows the development of the real side of the economy.

More recently, from the mid 1980s onwards, there has been a virtual consensus among Bretton Woods Institutions, mainstream economists, and international financial institutions of the need to put an end to financial repression and to promote financial development if fast long-run economic growth is to be achieved. The majority of the papers on this new line of research assumes that the causality goes from the financial side to the real side. The main argument is that the financial system can mitigate transaction costs and asymmetric information. According to a leading researcher in this field (Levine 2004, p….)

> Theoretical models show that financial instruments, markets, and institutions may arise to mitigate the effects of information and transaction costs. In emerging to ameliorate market frictions, financial arrangements change the incentives and constraints facing economic agents. Thus, financial systems may influence saving rates, investment decisions, technological innovation, and hence long-run growth rates.

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In this approach, "financial development" is related to the provision of several and different "services" that help to increase the (allocative) efficiency of the economy which translates into long-term productivity growth. In Levine's (2004) words,

> financial development involves improvements in the (i) production of ex ante information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) exchange of goods and services. Each of these financial functions may influence savings and investment decisions and hence economic growth.

Further developments around this line of research have linked the discussion of financial development with a broad spectrum of themes, like portfolio diversification (Merton 1992; Obstfeld, 1994); volatility of economic growth (Aghion et. al. 2004); bank`s competition (Aghion, et. al. 1999); technological innovation (Saint-Paul 1992; Allen et. al. 1999); financial intermediaries (Bencivenga et. al. 1991; Allen et. al. 1997); law (La Porta et al 1997, 1999; Beck et al. 2004; Allen et. al. 2005); the role of banks and stock markets (Rousseau and Wachtel 2000; Arestis et al. 2001); regulation and supervision of financial systems (Beck et. al. 2003; Barth et. al. 2004, 2005;); international trade (Beck 2002); firm size and industry growth (Neusser and Kugler 1998; Cetorelli et. al. 2001; Arestis 2006); corporate governance (Shleifer and Vishny 1996; Johnson et al 2000; Stulz 2001; Oman 2003); public deficit and inflation (Bencivenga et. al. 1991); income inequality (Greenwood, et. al. 1990); institutional framework (Rioja, and Valev, 2004a, 2004b; Rajan and Zingales 2003; Wolfenzon 2003); economic liberalization (Roubini, and Sala-i-Martin 1992; Klein and Olivei, 2008); social capital (Guiso et. al. 2004); local financial development (Guiso et al. 2002); human capital (Fung, 2009); among others.[1]

It is noteworthy that this body of literature has neglected regional aspects. Indeed, in the extensive review made by Levine (2004), the word 'regional' appears only once on the 118 pages of the report; the word "regions" appears twice; and the word "geography" none. The only paper reviewed by the author that deals with regions inside a specific country is Guiso et al. (2002).

[1] For a review of this literature see Levine, 2004.

However, although inside the main debate regional aspects has been not contemplated, there are a little, but growing literature, that has been take this issues in consideration. This literature covers different regional aspects and a completely picture of the relationship between financial system and regional development is still to be built.

One of the first lines of research has been the studies that tries to verify whether there is a regional financial markets or not. According to approach regional finance does not affect regional economics only if there is a free movement of capital across regions. Some studies has found that this is not the case due to different factors: the relationship between regional income and the supply of credit (Amos and Wingender 1993); differences in the elasticity of interest rate to real money stock across regions (Bias 1992); interregional differences in fund concentration and credit rationing (Park 1997); legal and institutional restrictions or asymmetric information and transactions cost (Koo and Moon …..), among others.

Another body of literature have been tried to investigate the existence of differences in technical efficiency of banks across regions and their role in explaining regional disparities (Miyakoshi and Tsukuda 2004). The explanation for these differences can be found in the features of local markets (Miyakoshi and Tsukuda 2004) or in the mismanagement or shirking of the local branches as they have more leeway for that due to the distance between them and the headquarters (Berger and DeYoung 2002).

The impact of local financial markets and growth has been studied by Özyildirim and Önder (2008) and Valverde and Fernández (2004) for Turkish and Spanish economies and both have found evidences that the features of local banks have significative impact on growth of different regions. In the same line of reasoning, Guiso, Sapienza, and Zingales (2002), also found that local financial conditions influence economic performance across the different regions of Italy. Usai and Vannini (2005), in their turn, have found that is not local financial markets that matters, but the type of financial markets. Their study have shown that cooperative banks and special credit institutions are the financial institutions that have a positive role in explaining differences in the performance of regions.

In an opposite direction, some authors have argued that it is the economic conditions of the market banks operate what explains the difference in bank's performance. (Meyer and Yeager 2001, Yeager 2004, Emmons, Gilbert and Yeager 2004, Furlong and Kreiner, 2007,and Daly, Krainer, and Lopez (2007)). Their findings are not unanimous. Yeager (2004) and Emmons, Gilbert and Yeager (2004), for instance, did not found significative evidence that, at county level, the features of the local economy has impacts on the performance of local banks. On the other hand, Meyer and Yeager (2001), Furlong and Kreiner, (2007), and Daly, Krainer, and Lopez (2007) have found statistically significant effects of state economic conditions on bank performance.

The effects of the distance between branches and headquarters has been investigate by Alessandrini and his associates (2007 and 2008) and Carling and Lundenberg (2005). Alessandriniet. al. (2007), compares bank size and distance between bank's branches and headquarters on the likelihood of introducing innovations and credit rationing. There results show that locations with bank's branches with higher functional distance[2] are less likely to introduce an innovation and more likely to be credit rationed. Alessandrini et. al. (2008), in your turn, examines the impact of *operational and functional distance*[3] on the financial constraints of Italian firms. They found that although greater *functional distance* have negative impacts over credit availability, especially for small firms, the lower *operational distance* do not necessary improve this availability. In the same line of investigation, Carling and Lundenberg (2005) finds no evidence that asymmetric information increases with *operational distance,* allowing for the authors to conclude that the localization strategy of banks should be based on factors other than credit risk management. Brevoot and Hannan (2006) in their turn, find evidence that the restriction to lending due to the distance between borrowers and lenders is important mostly for the case of commercial lending.

[2] The term "function distance" means the distance between hierarchical levels of a bank organization. According to Alessandrini et al. 2008 (p. 5), "by functional distance we refer to the distance between a local branch, where information is collected and lending relationships are established, and its headquarter, where lending policies and ultimate decisions are typically taken. From a theoretical point of view, the importance of functional distance for the lending policies of local branches has its roots in (*i*) the asymmetric distribution of information and the costs of communication within an organisation, and (*ii*) the economic, social and cultural differences across communities."

[3] Operational distance refers to the proximity between the borrower and its lending office.

Finally, there is a line of research that investigates the geographical diversification of banks activities and its impact on the portfolio and risk management (Demsetz and Strahan 1997; Acharya, Hasan, and Saunders 2002; and Morgan and Samolyk 2005). The results of this research agenda are ambiguous, as this diversification does not necessarily increase the profits of individual banks or reduce the risk in their portfolios.

All the literature reviewed above has a common theoretical basis. Their findings were derived from some form of market failure, being the most important asymmetric information and transaction costs. It is these types of market failure that explain credit constrains in less develop regions. To capture that the distance between borrowers and lenders are taken into account. However, the are also some literature has show that a greater proximity does not necessary decrease the level of credit constrains in that regions. The explanation for that is the technological improvement of bank's management, specially risk management.

Although the roots of regional income differences may be found in structural factors, monetary variables may account for maintaining and amplifying such differences when a different approach, in which money and banking are always non – neutral, is adopted. The Post-Keynesian literature on regional economics works according to this approach.[4]

For the post-Keynesians, money is not exogenous and it enters into the economic system through credit supplied by the banking system in response to demand. Thus, instead of determining the general price level, credit allows the validation of investment, thereby making money an integral and non-neutral part of the economic process. For these authors, the supply of and demand for credit are interdependent and affected by liquidity preference, linked to the expectations of economic agents in an uncertainty environment.[5] From the viewpoint of the banking system, a high liquidity preference will negatively affect its disposition to lend money in the region, as it shows pessimistic or less reliable expectations of its economic performance. On the demand side for credit, the liquidity preference of the

[4] For an empirical study of this theory at international level, see Dow (1990) and Rodrigues-Funtes (1998). See Amado (1997) and Crocco et al. (2005) for an application to the Brazilian case.

[5] For a further understanding of the use of such a concept in Keynesian economics, see Davidson (1982/1983, 1995), Dow (1995) and Crocco (1999, 2002).

public will affect its respective portfolio decisions. The greater the liquidity preference, the greater the demand for net assets and the lesser the demand for credit.

Based on such notions and using elements from the cumulative causation and dependence theories, Dow (1982, 1987) presents some models where the financial system together with the economy's real side may foster unequal regional development patterns. According to this perspective, due to the weakness of both its economy and economic institutions, economic agents (banks, entrepreneurs, and the public) in peripheral regions will show a greater liquidity preference. The reasons for this would be the high risk of capital loss for the banks, related to the default risk of loans; a change in the marginal efficiency of investment for the firms which is affected by the smaller availability of loans and higher bank interest rates; and the uncertainty about the public's earnings, which is associated with the economy's volatility. The result is that national banks may lend less money to the periphery, due to its economic structure and the remote control over their branches.

It is important to remark that what is central to this paper is the understanding that the Post Keynesian framework admits the possibility that banks (or their branches) undertake differentiated strategies across the territory. Hence, the central objective of the study is to investigate this possibility. In the following section we do so by analysing the Brazilian case.

CHANGES AND TRAITS: THE RECENT EVOLUTION OF THE BRAZILIAN FINANCIAL SYSTEM

To understand the recent evolution of the financial system in Brazil, with special attention to their management, it is worthy to return in time to the beginning of the eighties. The response of the financial system to the macroeconomic environment had some implications, which consequences go through the next decade.

As it is well known, the 1980s started under the influence of external shocks, which led to a strong gyration in the internal conditions associated with the debt crisis, that is to say, hyperinflation and slow economic growth (the so-called staginflation) and sharp deterioration of public accounts. As the liquidity of international capital markets dried up and public accounts deteriorated, the traditional sources of finance of the Brazilian

economy collapsed. Notwithstanding the economic crisis, reflected in the declining supply of credit to private agents as a proportion of GDP, the financial system was able to sustain a high profitability vis-à-vis other economic agents. Such profitability was mainly ensured by banks' provision of the money management services that individuals and firms required, on a daily basis, to maintain the value of their cash holdings in the presence of high inflation; the appropriation of the inflation tax as they did not pay interest on their deposits and they also held a "float", and the earnings of high returns offered by interest bearings public bonds. Moreover, the development of a highly speculative secondary market of public bonds associated with repurchase agreements ensured the liquidity of such assets, while dramatically reducing their risk. Thus, from the viewpoint of the banks, it was worthwhile to change the structure of assets by substituting the riskier credit supply to private agents for financial investments in public bonds. At the same time, the monetary correction of the local currency that (partially) compensated for inflationary erosion inhibited individuals from creating informal techniques of indexation and from taking refuge in other types of constant purchasing power assets such as land and US dollars, hence avoiding currency substitution. As a result, the financial system not only survived to one of the worst episodes of hyperinflation in the world (by keeping the main item of its liabilities: deposits) but also profited from it. True, all these conditions led to a rapid process of financial de-intermediation and loss of functionality by the financial system in terms of its capacity to provide financing to productive investments. Paradoxically, the system maintained (or even increased) its profitability and capacity to grow and compete, the latter based primordially in banking automation, among the most advanced in the world.

During the 1980s, import substitution industrialization came under heavy attack. According to the resurgent neoliberal orthodoxy logic of policy makers – founded upon "Washington Consensus" directives and ubiquitously supported by Bretton Woods Institutions – wholesale economic liberalisation was considered the appropriate framework to tackle the issue of restoring growth and promote stability and international competitiveness. In this context, financial liberalisation was considered one of the pillars of the economic policy reform in Brazil. In the late 1980s, several measures were implemented to deregulate and liberalise the financial sector following the structural

changes in financial intermediation at a world-wide scale[6],: non-residents were allowed to trade in domestic stock markets; Brazilian firms were allowed to integrate to international capital markets by negotiating tradable securities; incentives were afforded to institutional investors to operate in domestic stock markets; the instrument of "carta patentes" (bank charters) was abolished and the creation of universal banks was allowed[7]; and the interpenetration between banking and industry became increasingly deregulated, allowing the large Brazilian Business Groups to create (or acquire) their own financial institutions.

Economic and financial liberalization accelerated in the 1990s, and the country became engulfed in economic liberalization reforms, as all around the world issues of economic reforms in emerging markets have been an important part of G-7 reform agenda towards the creation of a new financial architecture. In 1991, financial liberalisation, through the flexibilisation of barriers to entry for foreign investors in Brazilian capital markets, was seen as a means to adapt the Brazilian regulatory framework to the new conditions in international financial markets, which privileged *portfolio*-type of investments[8]. At the same time, the government extended the access of Brazilian residents to external sources of financing, by allowing residents (financial and non-financial institutions) to issue bonds, *commercial papers*, fixed and floating rate notes, bonds convertible in shares, export securities, depositary receipts[9] amongst other financial instruments in international financial markets. According to UNCTAD (1997), Brazil was the second largest receptor of FDI among LDCs, staying only behind of China. According

[6] Banks have lost market share to institutional investors and , accordingly, deposits have lost to tradable securities. In the new pattern of finance, bond sales and portfolio investments have increased at an astonishing rate.

[7] Bank charters were conferred by the Central Bank and were used to slowdown the creation of commercial banks' branches.

[8] The Annex IV exempted capital gains from the payment of income tax; exempted the inflow of capital from the payment of IOF (tax on financial operations); abolished minimum permanency time requirements and freed portfolio composition of investment. The inflow of foreign *portfolio* investments through Annex IV showed a thirty-fold increase between 1991-93 (from US$482 million in 1991 to US$14,614 million in 1993). By the end of 1993, the accumulated outstanding balance (inflow less outflow) of Annex IV was US$7,178 million. Most of these investments went to the Brazilian stock markets, attracted by the privatisation and the low prices of shares. In accordance to the IFC Index, the Brazilian stock market (IFC Index of 679) showed the best performance among those of emerging markets between 1990-95 (Argentina – IFC Index of 350; Chile – 340; Venezuela – 181; Thailand – 104; Philippines – 86; Malaysia – 85; and Mexico – 51). As a result, foreign investors' participation in the traded volume of BOVESPA (the main Brazilian stock market) rose from 6% in 1990 to approximately 30% in 1995.

[9] They are regulated by Resolution n.1972/92, which constitutes the Annex V. Some analysts have pointed out that the issuance of ADR and GDR may weaken domestic stock markets. Given the lower transaction costs and foreign investors' familiarity with the rules of the NYSE vis-a-vis Brazilian stock markets, foreign investors' transactions under the Annex IV in local stock markets could be undermined.

to Laplane and Sarti (1999), the net inflow of FDI increased from US$628 million in 1990 to US$1.9 billion in 1994 and to US$16.3 billion in 1997[10]. While the inflow of *portfolio* foreign investment[11] raised from US$171 million in 1990 to US$21.6 billion in 1994 and to US$37.2 billion in 1997, the inflow of "traditional" FDI increased from US$511 million to US$2.2 billion and to US$17.9 billion in the same period. Nevertheless, the volatility of *portfolio* FDI was significant as the outflow figures show: the outflow of *portfolio* FDI jumped from US$67 million in 1990 to US$16.5 billion in 1994 and to US$30.8 billion in 1997, whereas the outflow of "traditional" FDI increased from US$230 million to US$330 million and to US$1.5 billion in the same period[12].

In 1994, with the success of the stabilization plan (the Real Plan), domestic financial institutions found themselves unprepared to operate under low inflation as they lost their main source of gain (the so-called floating)[13]. It is true that the Real Plan provided another source of profitability to the system, that is to say, the gains with financial intermediation associated with credit expansion (remind that stabilisation plans usually lead to strong wealth effects at its onset thereby prompting a consumption boom). However, while most banks excelled in profiting from inflation - by maximising demand deposits through expanding their countrywide network of branches[14] - they had little experience of performing credit operations. Moreover, as the government wished to replace the public financial system by the private in the provision of credit, in a context of fierce competition among banks, it overlooked the relaxation of credit risk evaluation by banks[15]. This led to a

[10] These figures exclude foreign investments in merchandise, reinvestment and conversion.

[11] It includes investments in shares, bonds, and privatisation funds as defined in the Resolution 1289, March 1997, of Central Bank. Capital inflows through Annex IV represented on average around 86% of total portfolio foreign investments over 1994-97. Most of these inflows were associated with the privatisation of telecommunication and electrical energy sectors and the resulting valorisation of shares.

[12] It is noteworthy that after 1994 net FDI has outpaced net portfolio foreign investment. The strong oscillations on portfolio investments are related to volatility of international markets associated with the recurrent currency crises after 1994. Indeed, the outflow/inflow ratio of portfolio investments through Annex IV raised from 46% to 90% between 1991-93 and 1994-97.

[13] It is estimated that inflationary revenues amounted to 4% of GDP in the first half of the 1990s, falling down to almost 0% in 1995 after the stabilisation. Also the ratio between inflationary revenues and estimated value of banking production dropped from 87% in 1993 to 1.6% in 1995 (Crocco and Figueiredo 2008).

[14] This strategy was also backed up by a Central Bank's guideline to reduce financial exclusion and expand the access of the population to financial services. As a result, a large number of branches was created in several municipalities.

[15] Banks also attempted to increase their net revenues by reducing operational costs (mostly through labour-shedding) and by augmenting banking fees.

rapid expansion of credit without attention to its risk profile, and, as it could be expected, to an uprising in credit default (Soares 2001).

The financial system's fragility became a source of concern to the govern authorities and, in the second semester of 1995 - amidst the contagion effects of Mexican currency crisis that led to the adoption of restrictive monetary and credit policies that aggravated the situation of credit default - the government launched measures to restructure and rescue the system. At first, the government opened up, in August 1995, the domestic financial system to foreign capital[16] and stimulated M&As aiming at eliminate from the market the most vulnerable financial institutions. In accordance to the government, both measures would lead to the capitalisation of domestic financial institutions, to greater efficiency in resource allocation, to an increase in financial system's capacity to absorb macroeconomic shocks, to an increase in the availability of long-term financing and to a reduction of spreads and service charges. Such measures in fact prepared the ground for the launching of the PROER in late 1995.

The PROER (Programme for the Restructuring and Strengthening of the National Financial System) aimed at the restructuring and strengthening of the domestic financial system. It involved measures ranging from financial assistance to managerial, operational and proprietary rights' reorganization of banks. If, on the one hand, the PROER was successful in preventing a financial crisis of huge proportions that could have occurred with the bankruptcy of three of the ten largest Brazilian banks; on the other hand, it used tax payers' money to rescue banks without imposing strict conditions on the use (provision of credit to industries and consumers) and the repayment of the resources. Later in August 1996, the government implemented the PROES (Programme for the Restructuring of the State-Level Official Financial System), a programme designed to promote the privatisation,

[16] Between 1995 and 1997 foreign banks participation in the domestic financial system grew rapidly: while in 1995, 37 foreign banks controlled 396 branches and were responsible for 6.2% of total deposits, in 1997, 77 foreign banks controlled 1614 branches and were responsible for around 12% of total deposits. It is worth mentioning that the openness of the domestic financial system was also an answer to the pressures of international financial institutions, attracted by the opportunities opened up by financial liberalisation, privatisation, issue of bonds and shares in domestic and international markets, the restructuring of domestic firms, administration of foreign institutional investors' funds, and the high growth potential of personal bank accounts amongst other opportunities. It was also a means to comply with the requirements of WTO, Mercosul, and Alca.

close down and restructuring of state official banks[17]. In accordance to some estimates, in total the PROER and PROES absorbed approximately 10% of GDP[18], closed down 76 banks and privatised 6 state official banks.

The behaviour of bank system in Brazil during this period can be seen by the evolution of two indicators: total credit / total asset and bounds, equities and treasury bills / total assets.

As said before, the first consequence for the bank system in Brazil of the introduction of stabilization plan was the increase of the credit operations as a main source of profits. According to Penido (2008), in 1995 the proportion of total credit over total bank asset for the most 50 banks in Brazil was around 39%. As a consequence of the Mexico crises and the increase in the interest rate, this proportion decrease to 30%. After a period of stabilization of this proportion, it decreases to its lower level in the recent period in 2003 (26%). From 2003, due to the improvement of the Brazilian economy indicators, the total of credit to total assets has been growing until the beginning of the recent financial crises. However, even in this recent period of growth, this proportion did not recover its value of 1995.

On the other hand, the proportion of bonds, equities and treasury bills over total assets has been show a clear tendency since 1995. In that year this proportion was around 15% and had grown to 30% in 2001. Since them, it has shown a only a little decrease to around 28%.

Although the financial system that emerged from this process of restructuring was more internationalised, concentrated (in terms of number of institutions operating in the country and total assets) and competitive (in terms of profitablility), it remained functionally underdeveloped, as it was less concerned with the provision of credit to investments than with the gaining of handsome profits in the trading bonds and securities (particularly government bonds of high return and low risk). In other words, banks moved

[17] These programmes led to a virtual elimination of regional banks, since most of them were either state-owned or financially vulnerable. Consequently, this combined with the spatial distribution of bank branches in the most developed regions aggravated the credit restrictions to poorer regions.

[18] Some analysts have maintained that, apart from the record interest rates, the PROER and PROES are among the main reasons of the rapid increment in public internal debt after 1995.

to a far more speculative posture by seeking assets of higher liquidity or, alternatively, by showing a higher degree of liquidity preference (Crocco and Figueiredo 2008).

As a matter of fact, the national financial system in the early 2000s was made up of 162 universal banks, four state-owned development banks and 20 investment banks[19]. Credit operations as a share of total assets reached 38% while securities, equities and government bonds added up to 26.6%. Nevertheless, most of the credit operations are of short-term nature or directed to consumption. Moreover, in the case of the domestic and foreign private banks, there is a clear preference for very short-term bonds and securities (respectively 67.7% and 43% of total investment in bonds and securities), whilst in the case of state-owned banks, their preference is lower (26%). Both indicators corroborate the speculative nature of private banks in Brazil and their high liquidity preference (Crocco and Santos 2006).

Considering the total credit as a percentage of GDP, Brazil shows one of the lowest ratio in the world (around 35% in 2005), while this ratio for the US, Japan, South Korea and Chile reaches respectively 249.2%; 99.5%; 98.2% and 63.1% in the same year (World Development Indicators 2006). Notice, in addition, that 48% of the long-term credit to productive investments is offered by the BNDES, while 34% is offered by domestic private banks and 19% by foreign-owned banks. These indicators clearly corroborate our previous conclusions that the Brazilian financial system is still functionally underdeveloped as it is unable to provide financing for development and highly speculative as it operates in the very short-term.

THE DATA, METHODOLOGY AND RESULTS

The data on banks' balance sheet used were made available by the Laboratory of Studies on Money and Territory (LEMTe), at CEDEPLAR/UFMG. The primary source is the System of Accounting Information of Financial System (**COSIF)**, from the Central

[19] The number of institutions operating in the country declined from 216 in 1990 to 164 in 2003. Interestingly, the number of branches increased from 14,808 to almost 17,000 in the same period, although showing a increasing spatial concentration in the richest regions of the countries at the expenses of the poorest – 75% of the bank branches were located in the Southeast and South regions (Crocco and Figueiredo 2008)

Bank. This system makes mandatory to all bank branches to supply the Central Bank with balance sheet information of their monthly operations. The Central Bank published the date through the SISBACEN, aggregated by municipality. The LEMTe organised the information for the period between 1988 and 2006 for all Brazilian municipalities.

In turn, the differences of the features of the territory is to captured by the data organized according to six categories of municipalities in terms of the size of their population. That is: cities with less than 20.000 inhabitants; between 20.000 and 50.000; between 50.000 and 100.000; between 100.000 and 500.000; and more than 500.000. To isolate special characteristics of the functioning of the financial system, a specific category of cities was created: cities with headquarter of banks.

Nineteen indicators are used in this paper. They are:

- ***PLB (Liquidity Preference of Banks – LPB)***: this indicator tries to capture the willingness of the banks to supply credit, being calculated by the ratio of the most liquid liabilities (***total of demand deposits***) by the least liquid items of the assets (***total of credits given***). Hence, the higher the ratio, the higher the liquidity preference of a given bank, i.e., the lower its disposition to lend (and become less liquid);

- ***Returns on Assets (RoA)***: it is a ratio between the ***total profits*** and ***total assets*** of bank's branch. It allows the evaluation of the banking system to transform its assets into profits. In other words, the index expresses the assets' capacity to generate profits;

Six other indicators measure the weight of different types of credit supplied in relation to the total assets. It is expected that different economic features of the regions determine distinctive type of credit. The indicators are:

- ***Short term credit / Total Asset (STC.Asset)***: supply of credit to working capital and consumption, usually with the maturity of less than one year;

- ***Long term credit / Total Assets (LTC.Asset)***: supply of credit with the maturity of higher than one year, mostly for industry;

- ***Livestock credit / Total Assets (LS.Asset)***: credit to the working capital and commercialization of live stock;
- ***Agriculture Credit / Total Assets (Agri.Asset):*** credit to the working capital and commercialization of agriculture;
- ***Real Estate Credit / Total Assets (RS.Asset):*** credit to real state;
- ***Others Credit / Total Assets (OT.Asset):*** credit to all others types of activities, like exports and imports.
- ***Bonds, Equity and Treasury Bills / Total Assets (BET.Assets):*** this indicator captures the weight of bank's operation with bonds and equity in relation to their total assets. As it is known, bonds and equity are assets that have higher degree of liquidity compared with the supply of credit. So, it is expected that the higher the liquidity preference of the bank system in a region the higher is the weight of bonds and equity over the total assets;
- ***Total Assets / Total Population (Asset.Pop***): it measures the relative size of the financial system in local economies. Also, sometimes it is viewed as a measure of the financial deepening of a specific region or country;
- ***Total Assets / Total GDP (Asset.GDP):*** it has the same meaning of the previous one using now the GDP as the measure of the size of the region;
- ***Regional Quotient of Credit (RQC):*** it consists of the ratio between the relative share of a region on the total volume of credit conceded in the country and the relative share of the same region in the GDP.[20] If the index is larger than one, the region's credit concession is proportionally larger that it would be expect given its weight on GDP;
- ***Allowance for Credit Default / Total Credit (ACD.Credit):*** this indicator is a measure of the quality of the credit in a specific region. It is a ratio of the total amount of money that banks have to reserve due to the default of payment of

[20] The index is a modified version of the location quotient, commonly found in the regional economics literature.

previous credit supply to the total of credit. The lower this indicator the better is the quality of credit supply;

All the previous indicators deal with the asset side of the balance sheet of banks. Now, we turn to the liabilities side by the building of another six other indicators:

- ***Private Cash Deposits / Total Liabilities (PCD.Liabilities):*** Private Cash Deposits represent the most liquid obligation that a bank has in its liabilities. The higher the ratio the greater the necessity of banks to have precautionary reserves. In this paper we assume that although it is possible to banks to resort to the bank's headquarter to supply reserves when it is needed, this option is not seen as a good practice as it could indicate a bad management;
- ***Time Deposits / Total Liabilities (TD.Liabilities):*** Time Deposits represent deposits that are not supposed to be claimed in a short time, as usually they have a reward associated with the period of time they stay in the bank. So, it represents a type of liability with lower degree of liquidity implying that banks don't have to keep a high proportion of precautionary reserves to face unexpected claims by the depositors. In the Brazilian case this account represents all forms of financial investments made by the public, like bonds, investment funds, equities, among others;
- ***Savings / Total Liabilities (Sav.Liabilities)***: Comparing with Private Cash Deposits and Time Deposits, Savings could be considered as the ***most illiquidity liability*** as it represents that amount of money that people save for unexpected situation or for future plans of consumption. Especially in the Brazilian case, Savings is considered almost the unique form of financial investment for people of the lower class as there is no minimum amount of money necessary to invest in it. However, comparatively with the other forms of financial investment measured in the Time Deposits account, it has a very low level of remuneration.

It is important to note that in this article it is considered that banks have an active liabilities management. As developed by Chick (xxx) in her paper on stages of bank development, in the sixth stage banks assume an active management of reserves offering to

the public a huge variety of financial innovations that aim to increase both the amount and the stability of reserves. So, as in the two previous indicators both Private Cash Deposits and Time Deposits were weighted by the Total Liabilities, one can considered these indicators as a *proxy* of the liability management of the banks. The lower the first (PCD.Liabilities) and the greater the second (TD.Liabilities) the more successful is the liability management of the bank.

The last three indicators try to capture the behavior of the public of a specific region in relation to their financial investment decisions. In a loose way, it can be said that these indicators capture the liquidity preference of the public. Although the latter is not directed influenced by the bank it is important for the management of the whole balance sheet. This is the reason that these indicators were taken into consideration in this paper.

- ***Private Cash Deposits / Population (PCD.POP):*** as discussed above this indicator is a mix of the public behavior and the management of liabilities of the banks. So, the higher the indicator the higher the public liquidity preference and the lower the success of bank's liabilities management;
- ***Time Deposits / Population (TD.POP):*** the higher this indicator the lower the liquidity preference of the public and the more successful is the liabilities management of the bank;
- ***Savings / Population (Sav.POP):*** finally, the behavior of this indicator is the same as the previous one.

The analysis of these nineteen indicators was made by the use of a Principal Component Analysis. This method was applied for every group of cities and for the whole data base for two years: 1996 and 2007. It is expected that the results of the PCA show that banks have different ways (strategies) of management of their assets and liabilities for different types of groups. It is supposed that the economic and social features of different sizes of cities have a distinctive influence over the way bank do business. Also, it is supposed that the size of the cities defines distinctive characteristics.

The dates chosen represent two very distinctive periods of the Brazilian economy. The first one, 1996, was a period characterized by the monetary stabilization of the

economy. This phenomenon did imply a change in the macroeconomic environment and bank behavior, both in its management and in its configuration. The second period, 2007, is characterized by high levels of economic growth and the consolidation of the financial sector. The supposition of the paper is that not only bank behavior differs over the territory, but also they respond differently to a distinctive macroeconomic environment.

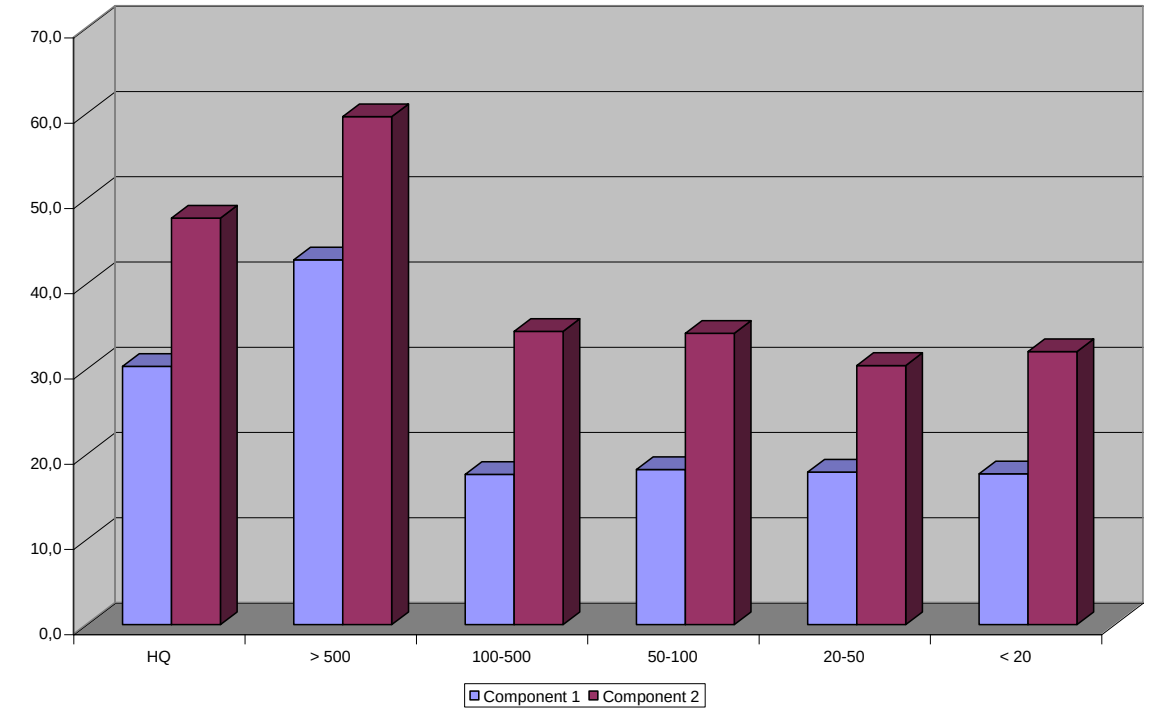
THE RESULTS

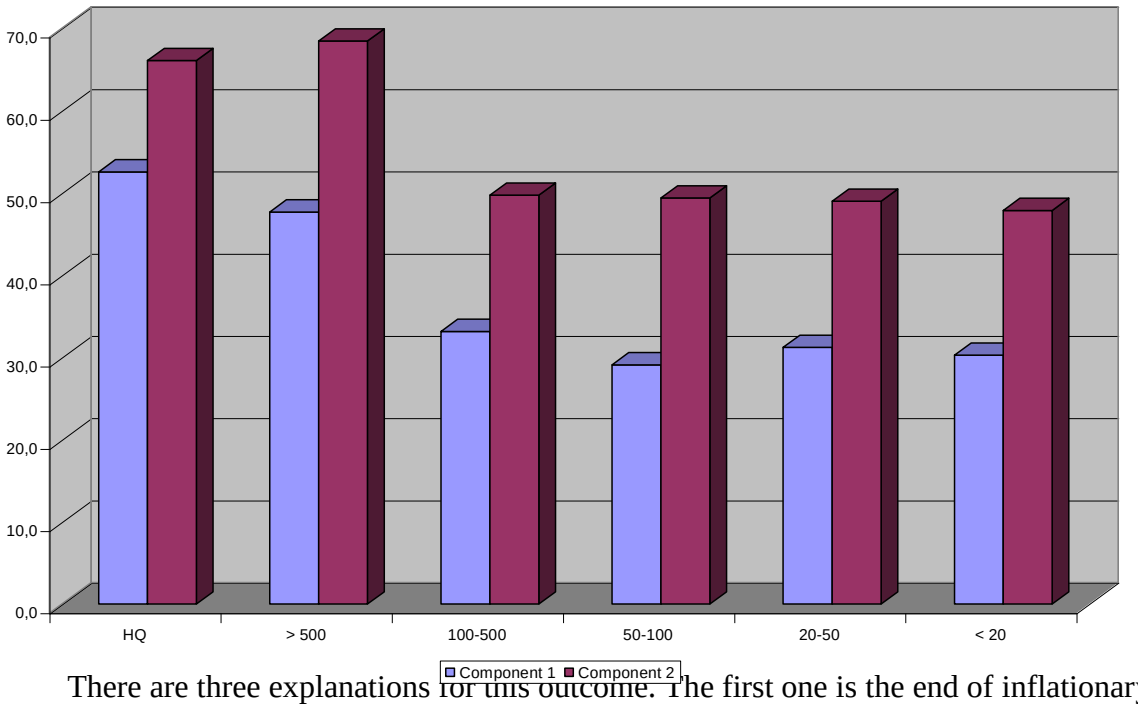
Principal components analysis is used here to identify a small number of factors that explain most of the variance observed in our set of observed variables, identifying a pattern of correlations within them.

Our purpose is to reduce the dimensionality of our data set by finding a new set of variables, smaller than our original set of variables, which nonetheless retains most of our sample's information. By information we mean the variation present in the sample, given by the correlations between the original variables. The new variables, called principal components, are uncorrelated, and are ordered by the fraction of the total information each retains. The components represent a linear combination of the original variables that has the largest variance possible.

To facilitate the analyses two summary tables were built.

First we have to look at how much variance in the original data is summarized by each new component variable. As one can see, there is an increase of the cumulative proportion of the explanation for all categories of cities from 1996 to 2007. This means that the set of studied variables increases its capacity to explain the joint variation of the financial variables (taking into account the cumulative variance until the third component – see appendix). Moreover, the increase of the cumulative explanation of the variance from 1996 and 2007 is more visible in bigger cities, especially those with more than 500.000 inhabitants and cities which have headquarters of banks within them. Indeed, it worth to note that for those cities the weight of the first component is significantly higher and continue to increase over the years. So, in other words, the correlation among the variables increases from 1996 and 2007, especially in the big cities.





There are three explanations for this outcome. The first one is the end of inflationary process in the Brazilian economy, that took place in 1995. As said before, the inflationary process had opened an opportunity of profits for banks derived from the so called inflationary revenues. This implies that the efficiency of banks had not to do with the

internal management of both assets and liabilities. This fact could explain the lower level of correlation among the indicators used in this paper. Just to remember these indicators are being use in an attempted to capture bank's strategies. On the other hand, as in 2007 there was not the possibility of inflationary revenues, so banks have to define more precisely the management of their assets and liabilities.

The second explanation could be found on the increase of the financial deepening of the Brazilian financial system during the nineties. This financial deepening took place not only with the introduction of new products and process in bank activities but also with the liberalization of bank's sector and the process of elimination of regional banks. So, the activities and strategies of banks become more uniform, specially in big cities.

Finally, in central places, like the big cities in Brazil, economies of agglomeration work to concentrate a huge diversity of financial activities. This diversity, however, is a consequence of the scale of the process of financial deepening, which in its turn, introduce a high degree of complementarities among the activities of the financial system, including the bank system. So, this process could explain the increase on the correlation among the variables analyzed here.

Indeed, it is worthwhile to notice that there are clear regional differences on the cumulative proportion of the explanation of the variance. Although there is a generalized increase of this proportion from 1996 to 2007, smaller cities show a lower cumulative proportion. An explanation for that is the level of financial deepening in less developed regions.[21] This means that bank system in these regions has a higher degree of internal differentiation than could be observed in more developed regions.[22] So, this can be seen as the first indication that indeed there is a differentiated bank strategy among regions.

Then we have to address the correlation between each original variable and each component score, which are the component loadings (values at column 1). By looking at component loadings we can ascertain which of the original variables tend to "load" on a given new variable.

[21] Its worth to note that in the case of Brazil there is a strong correlation between the size of the cities and their economic and social development.

[22] This is a conclusion also found in Crocco et. al. 2007.

Starting with the analysis of the first component is it possible to note that generally there is a inversed correlation between the variables that are at the “top” of the table and those on the “bottom”. For all size of cities liquidity preference of banks (LPB), Returns on Asset (RoA) and Short-term Credit over total assets (STC.Asset) appears with the same signal, being this opposite to the signal of the following indicators: total assets over GDP (Asset.GDP); total assets over total population (Asset.Pop); private cash deposit over total population (PCD.Pop); time deposits over total population (TD.Pop); savings over total population (Sav.Pop). The only exception is in 1996 for cities with total of inhabitants between 50.000 and 10.000.

Componente 1

	Headquarters		More than 500		100-500		50-100		20-50		Less than 20	
	1996	2007	1996	2007	1996	2007	1996	2007	1996	2007	1996	2007
LPB	0	0,257	0,277	0,203	0,276	-0,251	-0,289	0,126	0,162	0,119	-0,277	-0,211
RoA	0	0,277	0,188	0,301	0	-0,268	0	0,259	0	0,235	-0,108	-0,185
LTC.Asset	0,224	0,213	0	0	0	0,107	0	-0,168	0	-0,231	0,109	0,325
STC.Asset	-0,295	0,273	0,253	0,273	0,145	-0,314	0	0,238	0	0,23	-0,318	-0,24
LS.Asset	0	0	0	0	0	0	0,198	0	0	0	0	0,134
RS.Asset	-0,175	0,248	0	0,221	0	0	0	0	-0,35	-0,201	0	0,103
Agri.Asset	-0,343	0	0	0	0	0,118	0,168	-0,177	-0,157	-0,185	0,371	0,279
BET.Asset	-0,211	-0,255	-0,265	-0,226	0	0,119	0	0	0	0	0	0,105
OC.Asset	0	-0,212	-0,117	-0,197	0	0	0	0,178	0	0	0	0
PCD.Liabilites	-0,173	0,288	0,282	0,3	0,304	-0,302	-0,301	0,172	0	0,201	-0,373	-0,227
TD.Liabilities	0,216	0,254	0,106	0,186	0	0	-0,391	-0,224	-0,28	-0,157	0	0
Sav.Liabilities	0	0,269	0,274	0,265	0,229	-0,304	-0,361	0,194	0	0,152	0	-0,161
RQC	-0,368	-0,21	-0,28	-0,136	0	0,319	0,211	-0,273	-0,363	-0,306	0,405	0,358
Asset.GDP	-0,309	-0,27	-0,307	-0,296	-0,327	0,279	0	-0,3	-0,236	-0,323	0,38	0,354
Asset. POP	-0,33	-0,258	-0,285	-0,271	-0,297	0,292	0	-0,4	-0,19	-0,379	0	0,364
PCD.POP	0,276	-0,212	-0,29	-0,291	-0,415	0,318	-0,362	-0,309	-0,387	-0,322	0,26	0,299
TD.POP	0,263	-0,235	-0,286	-0,293	-0,47	0,302	-0,346	-0,343	-0,455	-0,292	0,24	0,197
Sav.POP	0,209	-0,11	-0,292	-0,19	-0,366	0,254	-0,369	-0,333	-0,374	-0,304	0,234	0,203
ACD.Credit	0,21	0,214	0,235	0,24	0,146	0	0	0	0	0,15	0	0

So, the first component

Variables that capture some aspects of asset management (LPB; RoA and STC.Asset) have different signal than variables that, taken all together, measures the size of the bank system, or financial deepening, in a specific region.

It is important to note the fact that LPB; RoA and STC.Asset have the same signal in both periods and for all types of cities. This is clear evidence that the micro-efficiency of the bank system (as proxied by RoA) does not means banks are financing investment on the real sector. Just remember that a higher LPB implies that banks have a lower willingness to supply credit and STC is the credit, either for personal consumption or working capital. As this is a phenomenon that shows in all kind of cities, one can say that it is a general feature of the banking system. In other words, there is a contraction on the functioning of the bank system in Brazil that put in one side the profitability of it and in the other its role as the provider of finance for long term investment.

Componente 2

	Headquarters		More than 500		100-500		50-100		20-50		Less than 20	
	1996	2007	1996	2007	1996	2007	1996	2007	1996	2007	1996	2007
LPB	-0,473	-0,124	0,25	0,31	-0,194	-0,187	-0,292	0,28	-0,15	0	0,183	0
RoA	-0,473	0	0,129	0	0	0,274	0,25	-0,173	0	-0,146	-0,193	-0,243
LTC.Asset	0	0,312	-0,311	-0,424	0	0,482	0,267	-0,424	0	-0,401	-0,17	-0,264
STC.Asset	0,225	0,194	0,195	-0,107	-0,288	0	0	0	-0,335	0	-0,105	0
LS.Asset	-0,328	0	-0,233	-0,288	0,189	0,393	0	-0,333	0,138	-0,342	-0,182	-0,235
RS.Asset	-0,33	0,198	0	-0,158	-0,128	0,12	0	0	0,138	0,175	0	0,276
Agri.Asset	-0,182	0,457	-0,358	-0,4	0,135	0,424	0,382	-0,35	0,271	-0,295	-0,197	-0,215
BET.Asset	0	0,231	0,246	0	0	-0,109	0	-0,197	0	-0,149	0	-0,135
OC.Asset	0	0	0,117	-0,118	0	0	0	0	0	0,187	0	0,277
PCD.Liabilites	-0,294	0	0,274	0	-0,401	0	-0,192	0,128	-0,377	0	0	-0,11
TD.Liabilities	0	0	0,424	-0,178	-0,462	-0,204	0,173	0,305	-0,371	0,297	0,415	0,311
Sav.Liabilities	-0,11	0	0,309	0,139	-0,456	-0,135	0	0,2	-0,499	0,321	0,426	0,354
RQC	0	0,379	0	-0,421	0	0,227	0,388	-0,295	0,289	-0,267	-0,229	-0,149
Asset.GDP	0	0,177	0,15	0,115	0	0	0,248	0	0,151	0	0	0
Asset. POP	0,152	0,214	0,183	0,157	0	-0,105	0,267	0	0,136	0	0	0
PCD.POP	-0,189	-0,284	0	-0,147	-0,265	0	0,239	0,168	-0,135	0,105	0,239	0
TD.POP	-0,179	-0,175	0,235	0	-0,189	-0,178	0,336	0,198	0	0,225	0,395	0,316
Sav.POP	-0,179	-0,367	0,2	-0,306	-0,318	-0,214	0,285	0,202	-0,265	0,259	0,408	0,386
ACD.Credit	-0,107	-0,244	-0,107	-0,207	0	0,275	-0,105	-0,273	0	-0,332	0,123	-0,286

Second new variable if formed by contrasting …. We could say this is a measure of …

Observação: podemos pensar nestes componentes como novas "variáveis" ou "padrões"; se for possível defini-los de alguma forma, como medidas de algumas hipóteses teóricas, seria ótimo

In 1996 differentiate those cities in with the size of bank system and short term supply of credit from those with higher RoA, LPB plus real state and livestock supply of credit. These last two make the difference from the component one.

The behaviour of this type of cities is very similar to the cities with more than 500.000. In 1996 it is possible to observe that there is a distinction between those cities that has a higher liability management for those that show a higher weight of credit supply. The main difference in 1996 between these two types of cities is the type of credit supply. For cities with more than

It is worth to note that the liability management is a strategy used by banks to increase both the size and the maturity of their reserves. In this sense, it is a strategy that

The pattern in 1996 is very clear. In cities with headquarters of banks the strategy consisted in supply a low amount of credit and when this was done the realstate a lifestock type of credit was the determinant.

The bank system in cities with population higher than 500.00 and between 100.000 and 500.000 had show similar behaviour, characterized by the liability management. The distinction between them is the weight of LTC in the explanation of the variance of the cities with population higher than 500.000. These outcomes maybe explained by the transitory feature of the macroeconomic environment from a period of high inflation to a lower level of it. In this context, the financial activities were characterized in these sizes of cities by the high level of leverage, that not necessarily is used for the financing of the real sector. When this is made, the supply of credit is made mainly for LTC, LS and Agriculture.

Bank's strategy in medium cities (with total inhabitant between 50 thousand and 100 thousand) in their turn was characterized in 1996 by a clear willingness to supply agricultural credit. It is this willingness that differentiated these type of cities, as one can see by the weight of RQC and LPB.

Finally, small cities were characterized by a liability management specialized in savings, which is expected due to the low level of income of this type of cities. In other words, banks in theses regions were essentially savings collectors.

In 2007, in a very different macroeconomic environment defined by both monetary stabilization and high economic growth, the characterization of bank strategy was very clear, and again presents an unambiguous regional pattern.

In this context, the main feature of the bank strategy is use of credit supply as an important source of revenue, but with differences on the type of credit, specially the bigger cities (with more than 100.000 inhabitants). As one can see, for cities with bank's headquarters and with more than 500.000 inhabitants, the total volume of credit supplied in relation to their GDP (QRC) is the main characteristic of bank management, with an special emphasis on LTC and Agricultural credit. For cities with total inhabitants between 100.000 and 500.000, it is the type, not only its volume, of credit that could typify bank's strategy: agricultural, livestock and long-term credit.

Although the relevance of the supply of credit continues to be important to medium and small cities, the indicators that both the liquidity preference of banks and its liability management becomes more important and the sizes of the cities diminish.

Appendix

Variables by Factor and Variance of Variable
Cities with less than 20.000 inhabitants

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB	-0,277	0,183	-0,33	-0,211		
RoA	-0,108	-0,193		-0,185	-0,243	0,426
LTC.Asset	0,109	-0,17	0,298	0,325	-0,264	
STC.Asset	-0,318	-0,105	0,104	-0,24		0,292
LS.Asset		-0,182	-0,22	0,134	-0,235	
RS.Asset			0,414	0,103	0,276	
Agri.Asset	0,371	-0,197	-0,157	0,279	-0,215	
BET.Asset				0,105	-0,135	
OC.Asset			0,466		0,277	
PCD.Liabilites	-0,373		-0,313	-0,227	-0,11	0,475
TD.Liabilities		0,415			0,311	0,263
Sav.Liabilities		0,426	0,156	-0,161	0,354	-0,394
RQC	0,405	-0,229	-0,159	0,358	-0,149	
Asset.GDP	0,38		-0,156	0,354		
Asset. POP				0,364		0,116
PCD.POP	0,26	0,239	-0,37	0,299		0,337
TD.POP	0,24	0,395		0,197	0,316	0,356
Sav.POP	0,234	0,408	0,102	0,203	0,386	
ACD.Credit		0,123			-0,286	-0,103
Cumulative Proportion (%)	**17,68**	**32,02**	**39,59**	**30,26**	**47,85**	**56,50**

Variables by Factor and Variance of Variable
Cities with the number of inhabitants between 20.000 and 50.000

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB	0,162	-0,150	0,390	0,119		0,17
RoA			-0,420	0,235	-0,146	0,156
LTC.Asset			-0,290	-0,231	-0,401	
STC.Asset		-0,335	-0,310	0,23		
LS.Asset		0,138	-0,300		-0,342	
RS.Asset	-0,350	0,138	0,273	-0,201	0,175	-0,329
Agri.Asset	-0,157	0,271	-0,343	-0,185	-0,295	
BET.Asset					-0,149	
OC.Asset					0,187	-0,498
PCD.Liabilites		-0,377		0,201		0,301
TD.Liabilities	-0,280	-0,371		-0,157	0,297	0,335
Sav.Liabilities		-0,499		0,152	0,321	-0,334
RQC	-0,363	0,289	0,174	-0,306	-0,267	-0,115
Asset.GDP	-0,236	0,151	-0,172	-0,323		-0,116
Asset. POP	-0,190	0,136		-0,379		0,169
PCD.POP	-0,387	-0,135	-0,115	-0,322	0,105	0,265
TD.POP	-0,455		0,267	-0,292	0,225	0,319
Sav.POP	-0,374	-0,265	-0,101	-0,304	0,259	
ACD.Credit			0,138	0,15	-0,332	0,181
Cumulative Proportion	**17,89**	**30,40**	**39,95**	**31,21**	**48,96**	**59,01**

Variables by Factor and Variance of Variable
Cities with the number of inhabitants between 50.000 and 100.000

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB	-0,289	-0,292		0,126	0,28	0,407
RoA		0,250	-0,396	0,259	-0,173	0,193
LTC.Asset		0,267	-0,280	-0,168	-0,424	
STC.Asset			-0,362	0,238		
LS.Asset	0,198		-0,271		-0,333	0,124
RS.Asset						-0,35
Agri.Asset	0,168	0,382	-0,161	-0,177	-0,35	
BET.Asset			-0,113		-0,197	0,111
OC.Asset			-0,269	0,178		-0,31
PCD.Liabilites	-0,301	-0,192	-0,347	0,172	0,128	0,44
TD.Liabilities	-0,391	0,173	-0,103	-0,224	0,305	
Sav.Liabilities	-0,361		-0,241	0,194	0,2	-0,381
RQC	0,211	0,388		-0,273	-0,295	-0,126
Asset.GDP		0,248	0,173	-0,3		-0,181
Asset. POP		0,267	0,424	-0,4		
PCD.POP	-0,362	0,239		-0,309	0,168	0,233
TD.POP	-0,346	0,336	0,126	-0,343	0,198	
Sav.POP	-0,369	0,285	0,123	-0,333	0,202	
ACD.Credit		-0,105	0,130		-0,273	0,268
Cumulative Proportion (%)	**18,19**	**34,17**	**44,47**	**29,07**	**49,38**	**61,59**

Variables by Factor and Variance of Variable
Cities with the number of inhabitants between 100.000 and 500.000

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB	0,276	-0,194	-0,382	-0,251	-0,187	
RoA			0,497	-0,268	0,274	
LTC.Asset			0,415	0,107	0,482	0,271
STC.Asset	0,145	-0,288	0,405	-0,314		0,141
LS.Asset		0,189	0,301		0,393	
RS.Asset		-0,128			0,12	0,331
Agri.Asset		0,135	0,315	0,118	0,424	
BET.Asset			-0,120	0,119	-0,109	0,208
OC.Asset			0,188			-0,13
PCD.Liabilites	0,304	-0,401		-0,302		0,108
TD.Liabilities		-0,462	0,101		-0,204	0,521
Sav.Liabilities	0,229	-0,456		-0,304	-0,135	
RQC				0,319	0,227	
Asset.GDP	-0,327			0,279		-0,377
Asset. POP	-0,297		-0,104	0,292	-0,105	-0,233
PCD.POP	-0,415	-0,265		0,318		0,204
TD.POP	-0,470	-0,189		0,302	-0,178	0,318
Sav.POP	-0,366	-0,318		0,254	-0,214	0,259
ACD.Credit	0,146				0,275	-0,179
Cumulative Proportion (%)	**17,62**	**34,40**	**47,70**	**33,13**	**49,71**	**58,23**

Variables by Factor and Variance of Variable
Cities with more than 500.000 inhabitants

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB	0,277	0,250	-0,179	0,203	0,31	-0,211
RoA	0,188	0,129	0,443	0,301		0,184
LTC.Asset		-0,311	-0,112		-0,424	0,206
STC.Asset	0,253	0,195	0,349	0,273	-0,107	0,224
LS.Asset		-0,233	0,613		-0,288	0,115
RS.Asset			-0,238	0,221	-0,158	0,349
Agri.Asset		-0,358			-0,4	
BET.Asset	-0,265	0,246		-0,226		
OC.Asset	-0,117	0,117	0,214	-0,197	-0,118	
PCD.Liabilites	0,282	0,274		0,3		0,213
TD.Liabilities	0,106	0,424		0,186	-0,178	0,257
Sav.Liabilities	0,274	0,309		0,265	0,139	0,225
RQC	-0,280		0,374	-0,136	-0,421	-0,152
Asset.GDP	-0,307	0,150		-0,296	0,115	0,282
Asset. POP	-0,285	0,183		-0,271	0,157	0,36
PCD.POP	-0,290			-0,291	-0,147	
TD.POP	-0,286	0,235		-0,293		0,323
Sav.POP	-0,292	0,200		-0,19	-0,306	
ACD.Credit	0,235	-0,107		0,24	-0,207	-0,416
Cumulative Proportion (%)	**42,78**	**59,58**	**69,59**	**47,65**	**68,45**	**77,46**

Variables by Factor and Variance of Variable
Cities with headquarter of banks

	1996			2007		
	Comp.1	Comp.2	Comp.3	Comp.1	Comp.2	Comp.3
LPB		-0,473		0,257	-0,124	
RoA		-0,473		0,277		
LTC.Asset	0,224		-0,175	0,213	0,312	-0,128
STC.Asset	-0,295	0,225	0,263	0,273	0,194	
LS.Asset		-0,328	-0,222			-0,491
RS.Asset	-0,175	-0,330		0,248	0,198	
Agri.Asset	-0,343	-0,182			0,457	-0,16
BET.Asset	-0,211		0,186	-0,255	0,231	-0,232
OC.Asset			-0,203	-0,212		-0,466
PCD.Liabilites	-0,173	-0,294		0,288		-0,11
TD.Liabilities	0,216		-0,196	0,254		-0,373
Sav.Liabilities		-0,110	-0,218	0,269		
RQC	-0,368		0,168	-0,21	0,379	0,138
Asset.GDP	-0,309			-0,27	0,177	0,22
Asset. POP	-0,330	0,152	0,234	-0,258	0,214	0,182
PCD.POP	0,276	-0,189	0,378	-0,212	-0,284	-0,16
TD.POP	0,263	-0,179	0,418	-0,235	-0,175	-0,329
Sav.POP	0,209	-0,179	0,466	-0,11	-0,367	-0,102
ACD.Credit	0,210	-0,107	-0,239	0,214	-0,244	0,182
Cumulative Proportion (%)	**30,30**	**47,68**	**61,18**	**52,55**	**66,08**	**74,18**