TEXTO PARA DISCUSSÃO N° 343

DIFFERENTIATED BANK STRATEGIES ACROSS THE TERRITORY: AN EXPLORATORY ANALYSIS

Marco Crocco
Ana Tereza Lanna Figueiredo

Janeiro de 2009

Ficha catalográfica

332.10981 C938d 2009	Crocco, Marco. Differentiated bank strategies across the territory: an exploratory analysis / Marco Crocco; Ana Tereza Lanna Figueiredo. - Belo Horizonte: UFMG/Cedeplar, 2009. 25p. (Texto para discussão ; 343) 1. Bancos - Brasil. 2. Economia regional. 3. Liquidez (Economia). 4. Brasil – Condições econômicas. I. Figueiredo, Ana Tereza Lanna. II. Universidade Federal de Minas Gerais. Centro de Desenvolvimento e Planejamento Regional. III. Título. IV. Série. CDD

UNIVERSIDADE FEDERAL DE MINAS GERAIS
FACULDADE DE CIÊNCIAS ECONÔMICAS
CENTRO DE DESENVOLVIMENTO E PLANEJAMENTO REGIONAL

DIFFERENTIATED BANK STRATEGIES ACROSS THE TERRITORY: AN EXPLORATORY ANALYSIS

Marco Crocco
Associated Professor at Centre for Development and Regional Planning (CEDEPLAR),
Federal University of Minas Gerais (UFMG).
E-mail: crocco@cedeplar.ufmg.br.

Ana Tereza Lanna Figueiredo
Lecturer at the Department of Economics, Catholic University of Minas Gerais (PUC-MG) and
PhD candidate at CEDEPLAR/UFMG.
E-mail: lanna@cedeplar.ufmg.br.

CEDEPLAR/FACE/UFMG
BELO HORIZONTE
2009

SUMÁRIO

RESUMO

Esse artigo objetiva investigar em que medida existem estratégias bancárias diferenciadas na economia brasileira. Com base na concepção pós- keynesiana de preferência pela liquidez distinta por região (DOW, 1993), analisa-se o balanço consolidado das agências bancárias das grandes regiões brasileira. Através da análise de indicadores, construídos a partir do citado balanço, conclui-se que existem evidências a assinalar o fato de o sistema bancário atuar de forma heterogênea no espaço.

Além disso, concluímos que este comportamento reforça as desigualdades regionais existentes de desenvolvimento da economia.

ABSTRACT

This paper aims to investigate to what extent there is a differentiated regional bank strategy in the Brazilian economy. Based on the Post Keynesian theory of regional liquidity preference (Dow, 1993), the paper analyses consolidate balance sheets of banks' branches from several Brazilian regions. Through the analysis of some indicators that were built using the data, the article finds evidence for the thesis that the Brazilian Bank System's strategy is heterogeneous across space. Furthermore, we conclude that this behaviour reinforces existing uneven regional patterns of development of the economy.

Key Words: bank strategy, regional liquidity preference, regional economics, development.

I. INTRODUCTION

The literature concerning regional issues in Brazil has been characterised by studies that focus on the behaviour of the economy's real variables (production, employment, wages, etc.), whereas monetary variables have been consistently overlooked. This fact can be partially explained by the lack of readily available data sources that would allow the analysis of the financial and monetary perspectives of the regional issued (Amado, 1998, p. 418).

Regardless of such restriction, some authors (Amado, 1997, 1998 e Crocco e Jayme Jr., 2006) have shown that important conclusions can be inferred from the study of this subject. Bearing in mind this field of investigation, the paper aims to investigate the existence of regionally differentiated bank strategies across the territory. Based on the Post Keynesian concept of regional liquidity preference (Dow, 1993), the paper analyses consolidated balance sheets of bank branches spread across Brazilian regions. Through the study of indicators constructed using this data, we argue that there is substantial evidence that the Brazilian Bank System operates differentiated strategies across space. Furthermore, we conclude that this behaviour reinforces regional imbalances.

Apart from this brief introduction, the paper is organised in the following way. The next section (II), lays out the Post Keynesian approach to the regional dynamic. The third section describes the recent evolution of the Brazilian Bank System, stressing recent transformations and their impact on the general bank strategies. Section IV constitutes the central part of the paper, in which the existence of regionally differentiated strategies is investigated. In the last section some conclusions are presented.

II. MONEY AND SPACE IN A POST KEYNESIAN PERSPECTIVE

An outstanding characteristic of literature concerning regional economics is the little attention given to money and its role in regional development. Several models of regional income determination, such as the neoclassical, the cumulative causation, and the input-output models, do not take into consideration the impact of money or other financial variables. In the few exceptions existent in which they are contemplated, such variables are treated within macroeconometric models, in which the regional impact of monetary variables, taken as exogenous, on regional income are a function of region's specific characteristics (Dow and Rodriguez-Fuentes. 1997). Therefore, money and monetary flows have been mostly treated as a result of differences among regions and not as the underlying contributing cause of such differences.

According to Rodriguez-Fuentes (1998, 2006), the main reasons for this virtual absence of studies on the importance of monetary factors are: (i) the orthodox hypothesis of neutrality in the long run; (ii) the fact that regions cannot make us of monetary policies, thus rendering them unimportant for most studies; (iii) the fact that capital flows are perfectly mobile across regions, which are similar to small open economies.

The neutrality of monetary variables is assumed by mainstream economics, for which real income can only be affected by real variables. In this context, money is perceived as a veil that facilitates exchanges and adjusts relative prices. The banking system, in its turn, is also seen as neutral. In this context, banks only allocate available savings for alternative investment projects. In a regional perspective, the banking system would only affect the performance of real variables when it fails to allocate the national credit among different regions due to market failures, such as imperfect or asymmetric information, or due to barriers to its action in the form of transaction costs.[1]. When none of such problems occurs, the regional credit market will work properly equilibrating intraregional financial flows. Hence, regions do not face any financial constraints, given that they face a perfectly elastic credit supply curve.

Even though the roots of regional income imbalances may be associated with structural factors, monetary variables may be behind the maintenance and amplification of such differences. These effects can only surface and be assessed when an alternative approach, in which money and banking non-neutrality is the rule, is adopted. The Post Keynesian literature in regional economics has advanced on this line of research in the last decade.[2]

The Post Keynesian monetary theory considers money as an integral part of the economic process. Therefore, within this framework, a clear distinction between the monetary and real sides of the economic system cannot be made (Dow, 1993). In the Post Keynesian framework money is endogenous, it enters into the economic system through the banking system, who supplies credit in response to demand. Hence, credit is non-neutral. It validates investments, being an integral part of the economic process, instead of only working to determine the general price level.

This school of thought also distinguishes itself for taking both the supply side and the demand side into consideration in the regional credit market. For these authors, the supply of and demand for regional credit are interdependent and affected by liquidity preference, which is connected with agents' expectations regarding a uncertain environment. From the banking system's standpoint, the liquidity preference will affect its disposition to lend negatively if pessimism and mistrust regarding a region predominate. On the demand side for credit, the public's liquidity preference will affect its portfolio decisions. The greater the preference liquidity, the greater the demand for net assets and the weaker the demand for credit.

Based on these concepts and making use of elements of cumulative causation and dependency theories, Dow (1982, 1987) introduces models in which the financial system, together with the economy's real side, may contribute to promote unequal patterns of regional development. The author endeavours to translate the liquidity arguments into a spatial context (Dow, 1982). Hence, contemporaneous economies which have a similar monetary base would have distinct multipliers, depending on how optimist expectations regarding the prices of local assets are; the higher the liquidity of local markets of said assets, the higher the degree of financial development and the more favourable their commercial results with other regions, the higher the multiplier.

[1] Roberts and Fishkind (1979), Moore and Hill (1982) assessed factors leading to credit rationing in a regional level. More recently, neo-Keynesian authors such as Faini et al (1993) and Samolyk (1994) have studied the argument of asymmetric information in regional credit markets.

[2] Dow (1990) and Rodriguez-Fuentes (2006) present empirical studies at the international level. Amado (1997) presents an application for the Brazilian case.

Two extreme cases are considered: a central and a peripheral region. The centre would be the prosperous region with dynamic markets and a sophisticated financial market. The periphery, in turn, would be a stagnated region, with feeble markets and a lower degree of financial development.[3] As a result of these characteristics, the liquidity preference is greater in the periphery and the liquidity of any assed is greater in the centre, leading, in the long run, to a higher bank multiplier in the centre. Furthermore, spatial specificities allow an agent to keep assets in several regions simultaneously, implying not only the spatial endogeneisation of the monetary base, but also reinforcing the distinctive characteristics of the local supplies of money.[4]

The centre is defined as the local with a productive structure historically dominated by the manufacturing industry and commerce and where the financial centre is located. The periphery, in turn, is characterised by the concentration of economic activities in the primary sector or in low-technology manufacturing. In addition, this region has an economic dynamics based on exports to the centre, which makes the highly volatile trade revenue dependent on the centre's economic performance. The centre has spread effects on the periphery not only in its demands for products but also in the diffusion of technology, skilled labour and services through its branches, fostering, thus, the centre-periphery dependence.

These characteristics imply a greater liquidity preference for residents of the periphery, may they be banks, entrepreneurs, or the public. 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 smaller availability of loans and higher bank interest rates; and the uncertainty regarding the public's income, which is associated with the economy's volatility.

As a result, national banks may lend less to the periphery, given its economic structure and the weak control over their branches. Specific banks in the periphery, in their turn, would rather keep a higher level of reserves and retrain local loans, positioning themselves in a position of relative disadvantage which, in this way, would encourage the concentration of banking in the centre. Moreover, the greater liquidity preference of the public in the periphery would cause a higher share of demand deposits over time deposits, which would compel banks to curtail their loan terms in order to adjust to the smaller share of the time deposits.

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.

---

[3] The models considers that, even within a nation, financial innovations only spillover to more remote regions after a significant time lag, which, in its turn, is preserved by transaction and information costs.

[4] Dow (1982) works with a region-based banking system. However, her arguments of money supply differences are still valid for a national banking system where capital flows may be increased and the destination of money allocation greatly depends on the centres, where capital flows to and in which deposit levels are higher.

III. THE EVOLUTION OF THE BRAZILIAN BANKING SYSTEM IN THE 1990S

The banking strategy is defined by the continuous search to adequate portfolios to a ratio between profitability and liquidity that banks believe to be ideal given their expectations regarding the future, the state of the economy and the institutional framework. It is in this context that the analysis of the differentiated regional banking strategies will be carried out. With this objective in mind, this section aims to systematise the reforms implemented in the Brazilian banking system, which were initiated in the late 1980s and extended until recently.

The restructuring process in the banking system can be explained by two distinct movements, one internal, and one external to the country. The first was initiated in the mid-nineties after the interruption of the inflationary process, which determined the end of a process called *floating*[5]. This event forced banks to change their strategies by notoriously increasing the weight of credit as a share of total assets.

The second movement can be understood as the late adoption of the reforms of the so called "Washington Consensus", which implied the liberalisation and deregulation of the banking sector, the privatisation of state owned banks (mostly at the state level). These reforms contributed to foster a process of banking concentration in the country, reflecting, in its turn, two simultaneous trends: (i) geographic concentration of the branches and; (ii) a wave of mergers and acquisitions.

The first trend is directly related to the end of the *floating,* which largely benefited banks during the years of high inflation. The *floating*, generated by the significant nominal spread between the passive and active interest rates, mostly on demand deposits. The importance of such mechanism as a source of profits determined the shape of banks' operational structure, which was idealised to maximise demand deposits (Carvalho, Studart, Alves Jr. 2002). This strategy was legally backed by a directive from the Central Bank, which, at the time, meant to increase the public access to financial services. As a result, a large number of branches were created in several municipalities.

From July 1994 onwards, however, the implementation of the monetary stabilisation plan, inflation rates fell sharply. The new macroeconomic scenario had a profound impact on the operations of the banking system, given that the main source of profits had been extinguished. The extension of revenue loss can be seen in Table 1 below. Inflationary revenues, such as floating, which averaged around 2% of the GDP historically, reached 4% from 1990 to 1993, fell back to 2% in 1994 and represented only 0.1% in 1995, according to the Brazilian Institute of Geography and Statistics (IBGE). The estimated value of banking production, in its turn, which peaked in 1993 reaching 87,3% of all inflationary revenues, fell to 49,5%, in 1994, and to 1,6% in 1995. The losses were an early indication of the profound reforms needed in the financial system (Corazza, 2001).

[5] Floating is defined as the gains obtained by banks resulting from the difference between non-indexed deposits or taxes and the rent gained from the investment in capital markets of such resources (Barbachan e Fonseca, 2004).

TABLE 1

Inflationary Revenues of Banking System - Brasil

	1990	1991	1992	1993	1994	1995
Inflationary Revenues as % of GDP	4	3,8	4	4,3	2	0,1
Inflationary Revenues / Estimated Value of Banking Production	70	81,2	86,8	87,3	49,5	1,6

Source: Andima/IBGE: Sistema Financeiro – uma análise a partir das Contas Nacionais 1990-1995.

At first, banks responded to the revenue loss with a bold financial stand and by increasing credit operations to consumers and commerce, taking on opportunities created by the acceleration of demand ensued by the end of the inflationary process. The fast expansion of credit in an environment of fierce competition amongst banks was made possible by the relaxation of credit risk evaluation. Consequently, it was observed a string increase in default (Soares, 2001). Furthermore, it is important to recall, as a reaction to the Mexican crisis by the end of 1994, the federal government adopted a restrictive monetary and credit policies, which lead to the deceleration of economic growth in the second half of 1995 and increased the number of default payments (Puga, 1999). Hence, after the first response of credit expansion, banks adopted a far more defensive posture, shifting their portfolios to low-risk assets, particularly government bonds, indicating a higher degree or liquidity preference.

De Paula et al. (2001) assessed the impact of liquidity preference and uncertainty on banks' strategies. According to the authors, banks, given their speculative nature, tried to equilibrate profitability and scale of liquidity preference. In an optimist scenario, banks tend to favour profitability, stimulating long-term credit operations. In pessimistic situations, as uncertainty raises, banks seek net assets, reducing long-term credit supply.

It is also important to note that banks also sought to compensate the post-inflation revenue loss by cutting on operational costs, particularly on the wage bill, as well as by increasing banking fees (Soares, 2001). According to IBGE, the revenue from bank services had its share on total revenues doubled in the years that followed the stabilisation. From 8% in 1990, services revenues soared to 10,5% in 1993, and to 21.5% in 1995 (Andima-IBGE, 1997).

The second observed trend, the mergers and acquisitions, was a consequence of the first movement, described above, and of important governmental incentives in the form of two programs specifically aimed at reforming the financial system: the Program of Restructuring and Strengthening of the Financial System (PROER) and the Program of Incentive to the Reduction of Public Sector in Banking Activity (PROES). At the same time, another determinant factor was the liberalisation of the banking system to the participation of foreign institutions, particularly after 1995. All these programs were a part of a more general agenda of economic liberalisation and of reduction of the weight of the state owned enterprises in the economy, following the Washington Consensus mentioned above.

The PROER, created in November 1995, authorised the Central Bank to finance healthy financial institutions to acquire the ones experiencing economic duress caused by the new macroeconomic environment. The PROES, in its turn, was aimed specifically at the state owned banks, with the objective to restructure the institutions preparing them for privatisation. Both programs were determinant instruments in the process of restructuring the financial system and of reducing the participation of stated owned banks in the sector through privatisation (Carvalho, Studart, Alves, 2002).

One of the effects of the restructuring process was the closure of a number of branches and the relocation several others. The process of concentration ensued can be views in Table 2 below. From 1990 and 2003, the number of banking institutions operating in the country fell from 216 to 164, a reduction of 32%.

The analysis of Table 3, below, in its turn, gives the regional perspective of the restructuring process. As it is clear, even though the absolute number of branches increased from 1990 to 2006, there was a clear tendency of concentration of branches in the Southeast region. During the period, this region's share in the total grew consistently at the expense of the North, Centre-West and Northeast, whose share are still below 1990s' figures. As can be seen in Table 4, the Brazilian north and northeast regions are clearly less developed in economic and social terms.

TABLE 2

Evolution of the Number of Banks in Brazil

1989 - 2003

Year	Number	Year	Number
1989	179	**1997**	217
1990	216	**1998**	203
1992	234	**1999**	193
1993	243	**2000**	192
1994	246	**2001**	182
1995	242	**2002**	167
1996	231	**2003**	164

Source: Cosif - BACEN

TABLE 3:

Evolution of the Number of Bank Branches by Region and their Participation (%) on the Total of Brazil

1990-2006

Region/	Centre-West		Northeast		North		Southeast		South		Brazil
Year	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number	(%)	Number
1990	1.169	7,89	2.556	17,26	634	4,28	7.391	49,91	3.059	20,66	14.808
1991	1.220	8,19	2.499	16,77	649	4,35	7.382	49,54	3.152	21,15	14.901
1992	1.231	8,19	2.474	16,47	647	4,31	7.468	49,71	3.201	21,31	15.021
1993	1.235	8,16	2.486	16,43	642	4,24	7.543	49,85	3.225	21,32	15.132
1994	1.252	8,16	2.481	16,17	647	4,22	7.711	50,26	3.252	21,19	15.343
1995	1.402	8,21	2.758	16,16	695	4,07	8.568	50,19	3.648	21,37	17.070
1996	1.291	8,07	2.548	15,93	659	4,12	8.133	50,85	3.365	21,04	15.994
1997	1.288	7,97	2.519	15,58	634	3,92	8.360	51,70	3.371	20,84	16.172
1998	1.193	7,56	2.346	14,87	574	3,64	8.339	52,86	3.323	21,07	15.775
1999	1.173	7,43	2.289	14,51	549	3,48	8.453	53,57	3.316	21,01	15.780
2000	1.184	7,35	2.308	14,33	547	3,40	8.727	54,20	3.336	20,72	16.101
2001	1.211	7,29	2.361	14,20	556	3,35	9.095	54,71	3.401	20,46	16.624
2002	1.240	7,34	2.378	14,08	571	3,38	9.279	54,95	3.419	20,24	16.887
2003	1.266	7,47	2.373	14,01	581	3,43	9.297	54,88	3.425	20,22	16.942
2004	1.283	7,51	2.466	14,44	627	3,67	9.261	54,22	3.443	20,16	17.081
2005	1.320	7,71	2.522	14,73	660	3,85	9.104	53,18	3.512	20,52	17.117
2006	1.338	7,66	2.551	14,60	688	3,94	9.322	53,37	3.570	20,43	17.468

Source: Laboratory of Studies on Money and Territory (LEMTe) - CEDEPLAR

Table 4

Brazil: Distribution of Geographical Area, GDP, GDP per Capita, and Illeteracy Rates by Regions (2002).

Region	Area (%)	GDP	Per capita GDP ($ Reais)	Illeteracy Rate*
North	45,4	5	R$ 4.939,00	9,8
Northeast	18,3	13,5	R$ 3.694,00	23,4
Southeast	10,9	56,3	R$ 10.084,00	7,2
South	6,6	17,7	R$ 9.157,00	6,7
Middle-West	18,9	7,4	R$ 8.166,00	9,6
Brazil	100	100	R$ 7.631,00	11,8

Source: IBGE

* Population over 15 years.

Finally, it is important to note that the banking reforms virtually eliminated regional banks, which were notably the most vulnerable financially. Consequently, credit restrictions to some regions increased curtailing their development, as will be discussed below.

As it could be seen, the macroeconomic and institutional environments implied the different strategies adopted by banks. Even though a more general strategy common to all banks can be identified, the regional impact was heterogeneous, given banks' distinct tactics by region. Our hypothesis is that this heterogeneity is linked to the liquidity preference diversity in space. In the next section, a more detailed analysis of the regional strategies will be carried out.

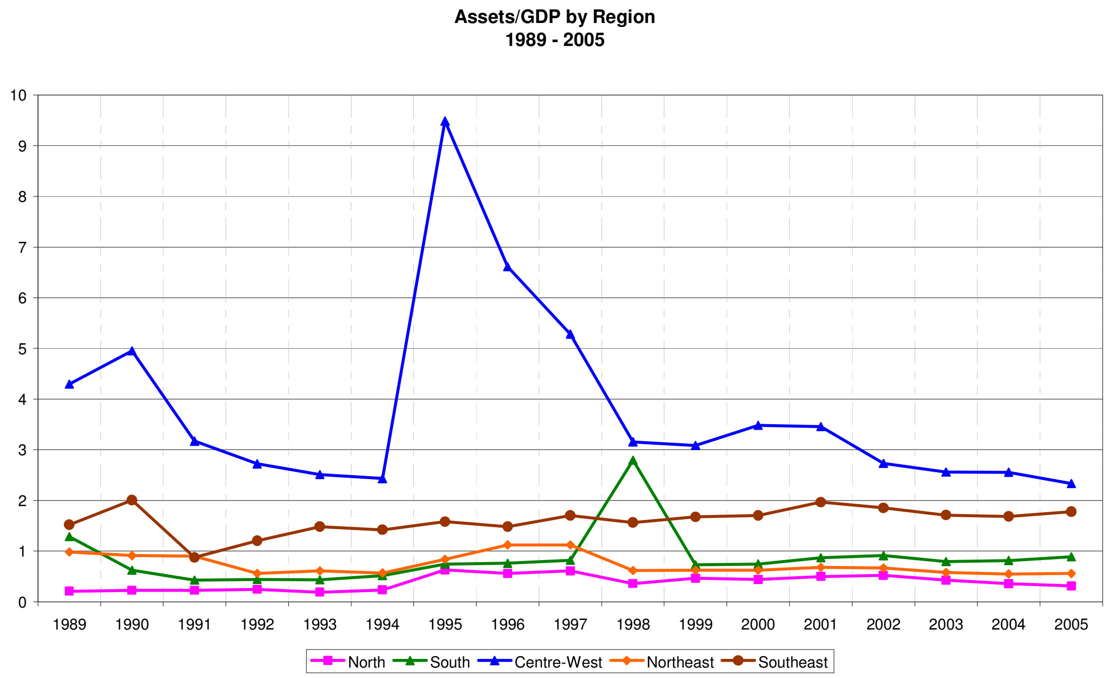
IV. REGIONAL STRATEGIES OF BRAZILIAN BANKS

IV.1. The Regional Size of the Banking System

The literature regarding the connections between the level of development of financial systems and economic growth shows a causal connection between the first and the second (Levine, 1993; Kind and Levine, 1993). Amongst the variables used to measure such connection, the indicator Assets/GDP is the most commonly found, given that it measures the relative size of the financial system in local economies.[6] Graph 1 below depicts the weight of the banking system, by region, using the indicator.

[6] 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 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. For an analysis of indicators used to evaluate financial systems see World Bank and IMF (2005).

GRAPH 1



Before proceeding to a more general analysis, a few considerations are required regarding the indicator observed for the Centre-West region. During the entire period under study, this region showed the highest ratio Assets/GDP of the country. However, this result does not reflect the real weight of the region's economic activity. The fact that the region harbours the headquarters of the two most important federal banks (Caixa Economica Federal and Banco do Brasil) influences the indicator. Moreover, the country's capital, Brasilia, is located in the Centre-West, and all bank operations liked to the federal administration are concentrated in the city. Hence, the region will not be considered in the analysis.

For the remaining regions, the data show a clear pattern: the weight of the banking system is relatively larger in the most developed regions of the country. The Southeast region shows the larger value of the indicator during the whole period, with the exception of 1998, when it was surpassed by the South region. On the other side, the North showed the lower value throughout. This pattern reflects the level of development of these regions. The South and the Northeast switched places between second and third through the years. From 1990 to 1997, the weight of the Northeast was higher that the South. From 1998 onwards, the situation is reversed, reflecting the process of restructuring of the banking system during the 1990s.

As discussed above, with the end of the gains associated with the floating and following the process of mergers and acquisitions, the Southeast gains share on the total at the expense of the North and Northeast, reflecting the process of concentration. This process is also behind the increase of the South's weight.

It is important to note that the results seen in the graph are in consonance with the literature regarding the connections between the level of development of the financial system and economic growth (Gertler and Rose, 1994; Rajan and Zingales, 1998; Levine, 1998).[7] Even though there is no clear consensus regarding the direction of causality, the authors of theses studies found a significant relationship between these two factors.

The pressing matter at this point is to try to understand to which extent the difference of relative shares of the regions is due to deliberate actions from the financial institutions. In this sense, the next section will try to identify spatially differentiated banking strategies.

IV.2. Regional Banking Strategies

The identification of regional banking strategies is not a trivial task. There is, in the first place, a clear deficiency of key information at the regional level, most notably in Brazil.[8] Secondly, given the degree of integration between regions, there is a possibility that actions taken in one region are due to investments made on another, which is not the one under analysis.[9] Regardless of these shortcomings, we believe that some indications of distinct strategies may be identified in the available data. Hence, a series of indicators were constructed and, in spite of being presented separately, when taken together are useful to analyse the strategies.

a) Banks' Liquidity Preference

The first indicator to be analysed is the banks' liquidity preference (BLP). This indicator measures the banks' disposition to keep a more liquid position, being calculated by the division the more liquid liabilities (total of demand deposits) by the less 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).

Graph 2 below shows the dynamics of the BLP by region from 1989 to 2006. The graph allows two distinct analyses. First, the result confirms the Post Keynesian assessment, introduced by Dow (1993), according to which in less developed regions liquidity preference tends to be higher. According to this approach, less developed regions tend to be associated with a higher degree of uncertainty regarding the future, leading agents (banks and general public) to prefer liquid assets as a means of protection. Hence, the liquidity preference in such regions is more acute. On the other hand, in more developed areas (central regions) there is more disposition to demand as well as to supply credit as a reflex of a weaker liquidity preference of the agents. As can be seen in the graph, following these reasoning, the North region, the less developed of all, showed the highest BLP and the Southeast, the centre, the lowest.[10]

---

[7] See, amongst others, Levine (1997), Rajan e Zingales (1998), Demetriades e Hussein (1996), Arestis e Demetriades (1997) e Jayaratne e Strahan (1996).

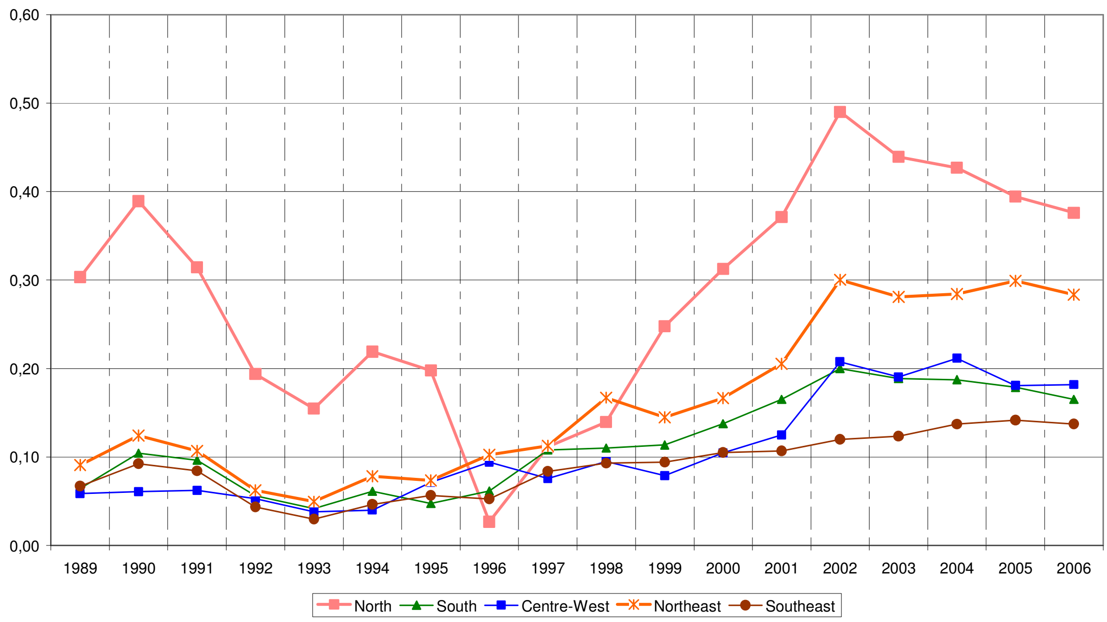
[8] The main explanation for this shortcoming is the fact that the Central Bank does not consider this type of information relevant. This orientation reflects the influence of the neoclassical school over the bank's board of directors since the early 1990s. Within neoclassical models, money is neutral at any territorial scale.

[9] This fact is even more relevant in the Brazilian case, given that the banking system is formed by large national banks with braches scattered across the country, with regional banks almost absent.

[10] These results corroborate those found by Crocco et al. (2005), using data until 2002.

GRAPH 2

Bank's Liquidity Preference by Region 1989 - 2006



The second type of analysis is based on the similar trend of the indicator for all regions during the series. As can be seen, from 1990 to 1994 the BLP falls consistently, showing a downward trend of the banks' liquidity preference. At first, such trend may be surprising, given that common sense would suggest that the liquidity preference should be higher during periods of inflationary acceleration and the associated economic instability. However, the way in which the index is calculated explains the counterintuitive result. During times of high-inflation, families tend to reduce the amount of demand deposits in favour those which offer an interest rate, aiming at keeping the purchasing power of their wealth. Hence, the denominator of the numerator of the fraction is reduced, leading to a reduction of the index. Furthermore, regardless of the economic instability that prevailed until 1994, all financial operation in Brazil where subject to indexation as a mechanism to protect against inflation, including credit operations. Hence, is spite of the high rates of inflation observed during this period, credit operations keep on being made considering only real values.

From the implementation of the stabilisation plan in 1994 until 1999, the graph shows an upward trend, reflecting an increase of the liquidity preference of all regions. According to Crocco e Santos (2006):

> "With the monetary stabilisation post-1994, it was believed that the banking system would be able to carry out its function of finance productive activities, given that it was expected that the public sector would not need to finance its deficit. (…) Indeed, a significant increase of credit operations was observed after the beginning of the Real Plan. However, as a reaction to turbulences in the economy generated by external factors (Mexican crisis at first and then other emerging economies), the high interest rates monetary policy was reinstated. This policy provided banks with a more profitable and less risky financial operation than the concession of credit" (Crocco and Santos, 2006: 49-50).

Hence, the liquidity preference of all regions was increasing during the period in all regions.

Two other very distinct periods can be observed in the graph. The first stretches from 1999 to 2002, and is market by a sharp and generalised increase of the liquidity preference. This period coincides with an acute exchange rate crisis, from the end of 1998, and the subsequent tightening of the monetary and fiscal policies. All these facts determined low rates of economic growth and an increase of the cost of investment, thus lowering the demand for loans and driving banks to invest in government bonds.

The next period starts in 2002, when and inflection of the BLP trend can be observed, most notably in the North and South regions as well as in the Centre-West and Northeast, but with less intensity. This movement can be attributed to improvements of the economic indicators that could be observed in that year and, from 2004, to higher rates of economic growth.

b) The Regional Distribution of Credit

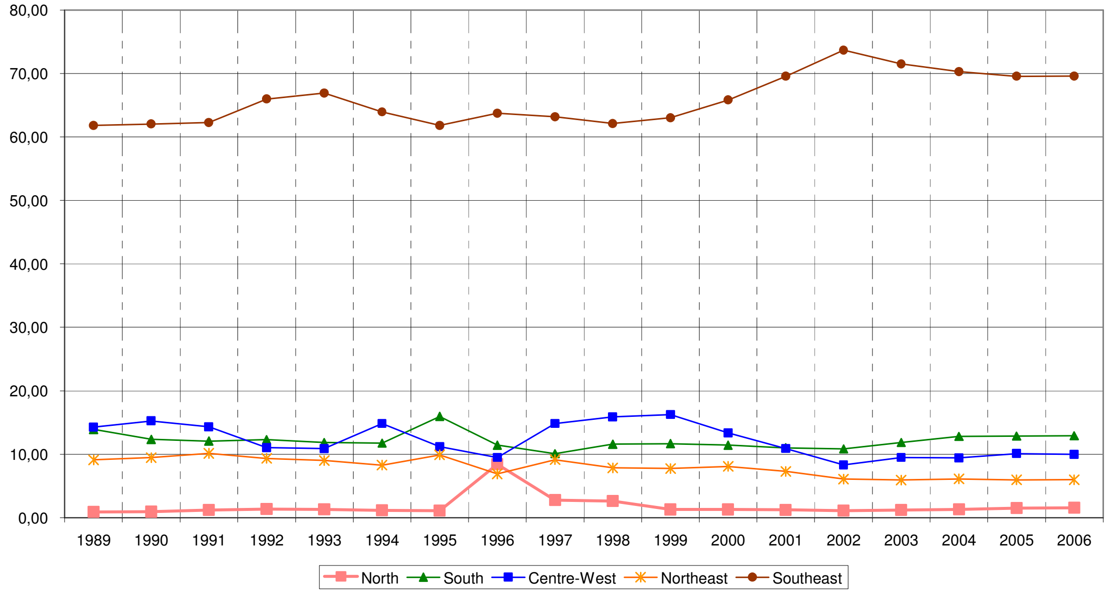
The second indicator studied is the regional distribution of credit, shown in Graph 3 below. The most striking feature observed is the high level of credit concentration in Brazil. During the whole period under consideration, the Southeast region's share on total credit was over 60%. Between 1990 and 1998, the share fluctuated between 62% and 67%. From 1998 to 2002, there is a clear tendency of concentration, whit the share peaking at 74%. From this point onwards, the degree of concentration shows a slight reduction, falling to 69% in 2006. As could be expected, the remaining regions show an opposite trend. The North and the Northeast regions' share on total credit never surpassed the 10% threshold.

It could be argued that the dynamics described above merely follows each region's economic weight on total GDP. Indeed, a larger share of total credit is to be expected for regions with a larger share of the GDP, given the stronger demand for credit in these regions. Moreover, as Crocco and Santos (2006) have argued, in less developed regions, the lower per capita income reduces the access of the public to banking services, resulting in a lower volume of demand deposits relatively to income and a larger retention of currency.[11] The authors also drew attention to the fact the industrialisation of peripheral regions fostered, largely, by governmental incentives. Such policies drove several branches of industrial companies whose headquarters are located in central regions (primarily in the Southeast). This pattern reinforces credit concentration, given that loan operations take place in the region in which the headquarters are located.

[11] Almeida (2007) argued that the process of banking concentration in the second half of the 1990s also lead to a relative reduction of credit conceded to certain regions. Even though we do not consider this possibility in this paper, we believe that its influence was weaker, given that the logic the locational decisions of banks' branches before the process of restructuring of the banking system was not driven by credit concession, but by availability of resources to be applied in the capital markets.

GRAPH 3

Regional Distribution of Credit
1989-2006



Source: LEMTe.

However, two aspects must be considered. First, we have seen above a comparative indicator, which takes into account the relative weight if the financial sector in the regional distribution of credit (Graph 1). When Graphs 1 and 3 are taken together, it is evident that there is a contradiction. Whereas the weight of the banking sector of the Southeast region is between one and a half and two times bigger than that of the remaining regions, the relative share of credit of the Southeast is over five times higher.

To further investigate this issue, another indicator was calculated. The Regional Credit Index (RCI) 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.[12] 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. Hence, the index allows us to assess if the Southeast's share in total credit is a mere reflection of its economic weight.

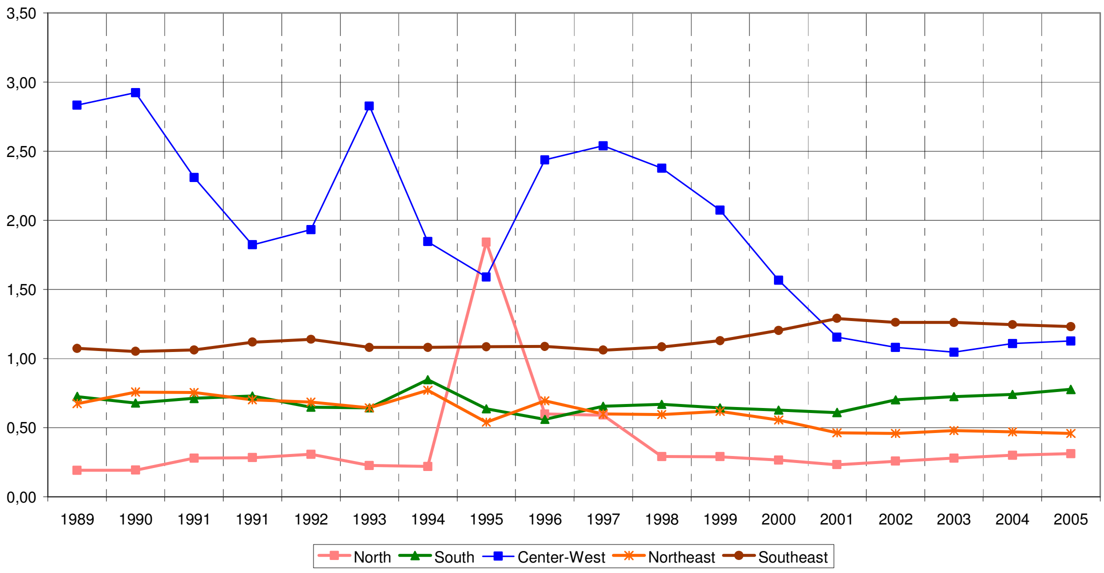
The evolution of the RCI is shown in Graph 4 below. It is evident that during the whole series the North, Northeast and South regions' share in credit distribution was lower to their respective contributions to the GDP[13]. On the other hand, the contrary can be observed for the Southeast and Centre-West, the latter being influenced by the presence of federal banks, as mentioned above.

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

[13] The only exception is the North region in 1997, which is explained by isolated facts, most likely the privatisation of Electricity Company of Pará and mining investments in Carajás.

GRAPH 4

Regional Credit Index
(% Credit / % GDP)
1989 - 2005



Source: LEMTe and Ipeadata

From the preceding discussion, it is safe to argue that the credit concentration is not accidental, being a result of deliberate banking strategies. Such strategies are a result of differences in banks' liquidity preference across regions, given that in less developed regions the local economic dynamics is more unstable, leading banks to withdraw credit supply from these areas in favour of more advanced regions. The perverse result is the reinforcement of regional disparities.

Another way to visualise the fact that regionally differentiated banking strategies are more than a reflection of the productive structure can be seen in Table 5. The table shows that the relative share of each region in the value added by financial intermediation is more concentrated than the relative share in total value added. In the Southeast, for instance, the share in total value added was, in 2006, 54.9%, whereas the share in the value added by financial intermediation was 65.9%. On the other extreme, the shares for the North region were, in the same year, 5.2% and 1.79% respectively.

It is also interesting to observe the evolution of the share in the value added by financial intermediation. In the Southeast, whereas a slight tendency of de-concentration of economic activity could be observed from 1990 to 2004, which is represented by a reduction of the share on total value added from 57% to 55%, the opposite happened when the share in financial intermediation is taken into consideration (increase from 54.8% to 66%). In the South, the economic concentration showed a small increase, whereas the financial concentration increased from 8.9% in 1990 to 15.5% in 2004. The gains observed in these two regions occurred at the expense of the Centre-West region, whose share in financial intermediation fell 18.3% during the period. Finally, the North and the North east, in spite of small gains on both shares, remained in the bottom of the table.

TABLE 4
Regions Participation on the Brazil's Gross Added Value, by the total of economic activities and by the financial intermediation activities - 1990 - 2004

Year	Southeast		South		North		Northeast		Center-West	
	Financ. Interm.	Total activ.	Financ. Interm.	Total activ.	Financ. Interm.	Total activ.	Financ. Interm.	Total activ.	Financ. Interm.	Total activ.
1990	54,80	57,00	8,89	17,12	0,81	4,66	7,64	12,56	27,86	8,66
1991	59,23	57,91	9,57	16,68	1,08	4,52	7,90	13,12	22,22	7,77
1992	64,97	59,27	9,43	17,05	1,04	3,87	7,36	12,15	17,21	7,66
1993	70,26	59,89	7,40	16,24	0,95	4,49	6,40	11,57	14,99	7,81
1994	67,60	57,66	10,23	17,99	0,88	4,83	6,68	12,44	14,61	7,09
1995	66,59	58,27	11,39	17,87	0,94	4,56	7,08	12,77	13,99	6,53
1996	65,38	57,51	10,54	18,09	1,49	4,59	7,24	13,18	15,35	6,63
1997	65,10	58,08	9,97	17,70	1,46	4,34	6,84	13,08	16,62	6,80
1998	61,58	57,74	11,62	17,62	1,55	4,47	7,33	13,05	17,92	7,11
1999	64,12	57,81	12,11	17,85	1,56	4,47	7,01	13,06	15,20	6,80
2000	66,07	57,53	13,19	17,64	1,86	4,61	7,79	13,04	11,09	7,18
2001	69,01	57,17	12,44	17,80	1,66	4,73	7,87	13,02	9,02	7,28
2002	64,96	56,36	14,73	17,76	1,64	4,95	9,12	13,36	9,56	7,57
2003	68,00	55,42	13,62	18,59	1,71	4,88	7,86	13,63	8,80	7,49
2004	65,98	54,96	14,51	18,35	1,79	5,23	8,13	13,97	9,59	7,49

Source: Brazilian Institute of Statistics and Geography - IBGE

The results shown thus far reflect, to a certain extent, the evolution of the Asset to GDP ratio discussed above. According to Crocco and Santos (2006), central regions, for having a higher liquidity preference, have a stronger supply of credit that can be channelled to productive activities, implying a larger share in total financial intermediation. Taken together, the two most developed regions' (South and Southeast) share in total financial intermediation reaches over 80%. Such concentration benefits firms located in these regions in prejudice to enterprises from peripheral areas. The uneven access to loans and other financial services significantly contributes to accentuate regional disparities.

Furthermore, the lower shares of the North and Northeast regions are partially justified by credit leakages to more developed regions. The Brazilian financial system is centralised. With the exception of investment banks, there are no regional banks. Hence, even if part of the national productive activity takes place in peripheral regions, the bulk of the financial negotiation takes place in the Southeast (particularly in the country's financial centre, São Paulo). For Crocco and Santos (2006), this market feature of the local economy corroborates the view that financial leakages aggravate regional disequilibria.

It is important to note that such financial leakages are related not only to credit concentration, but also to the distribution of deposits. Resources from less developed regions are drained to richer areas, in which better opportunities of investments can be found. This conclusion is in line with arguments of Amado (1997), for whom the significant structural heterogeneity observed across Brazilian regions are associated with a monetary dynamics that tends to accentuate the regional disparities, instead of working to reduce them as orthodox models would have predicted.

c) Banking Asset Management

The next step in the identification of spatially differentiated strategies is to analyse the management of banks assets in Brazilian regions. Three variables will be considered: Profits/Assets, Credit/Assets and Bonds and Equities/Assests. The ratio Profits/Assets allows the evaluation of the banking system to transform its assets in profits. In other words, the index expresses the assets' capacity to generate profits. The other remaining indexes try to identify which items of the banking assets contribute to the result observed in the previous index. For simplicity, we will consider only two asset items: credits and bonds and equities. These items are, in theory, the less liquid and more profitable (credit) and the more liquid and less profitable (excluding money in its most liquid form, cash).[14]

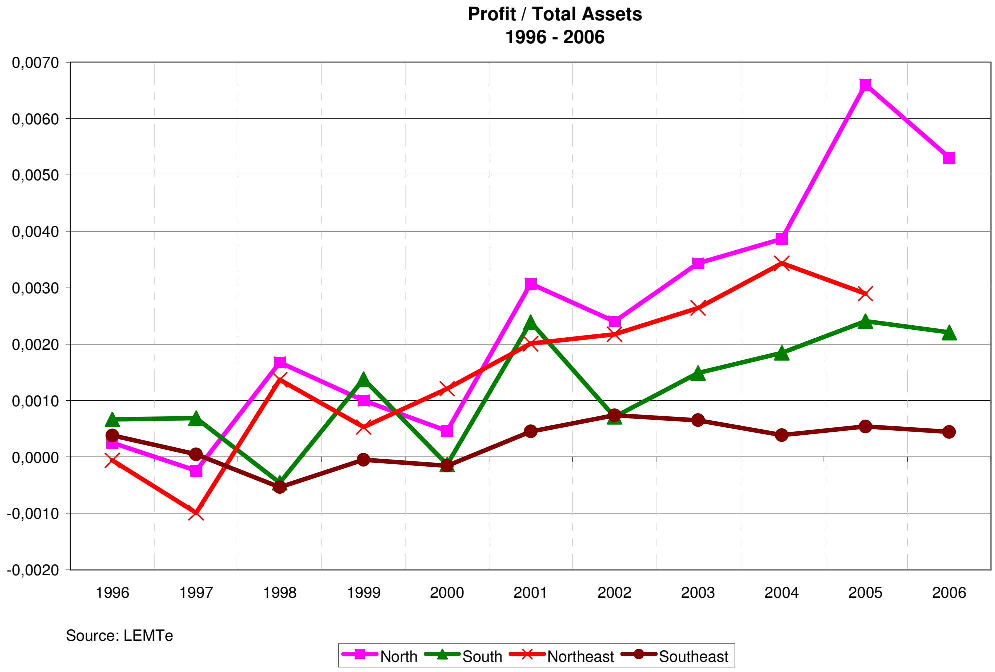
The evolution of the indexes and the regional breakdown are shown in Graph 5 below from 1996 to 2006.[15] During the period considered, and particularly after the monetary stabilisation, less developed regions (North and Northeast) were relatively more profitable than the Southeast, the most advanced region. The higher profitability is observed even though these regions have been characterised by a lower share of loans relatively to their contribution to GDP due, to a large extent, to the higher liquidity preference of banks in these regions and to the relatively low share of the local output on total GDP. This fact indicates that the low share of financial intermediation observed in the periphery did not interfered with the generation of bank's profits.

This index, when taken together with the indicators shown previously, indicates the existence of distinct banking strategies according to each region. Moreover, it allows us to question to which extent the microeconomic efficiency of banks is related to correspondent macroeconomic efficiency. The implicit hypothesis of mainstream economics is that microeconomic efficiency leads automatically to an optimal allocation of resources and to macroeconomic efficiency (Carvalho et al., 2002). However, as the data has made clear, the Brazilian banking system is an example that this is not always the case. A banking system that is efficient at the micro level does not lead to a larger volume of credit or to a better allocation of credit. Banks define their strategies (loan operations and/or investment in bonds) seeking to adequate their portfolios to a ratio between profitability and liquidity that they find to be best. The decision-making is influenced by their expectations regarding the future, which will determine the level of their liquidity preference. Hence, the profitability will not be necessarily associated with a higher volume of loans.

[14] It is important to note that credit operations and investment in bonds are not the only source profits of a bank. Nowadays, a large share of the revenues is due to services and banking fees. However, such information is not readily available by region.

[15] For simplicity, we opted to exclude the Centre-East given the bias introduced by federal banks present in this region, as discussed above. Moreover, the analysis focused on years from 1996 to avoid the biased introduced by stabilisation plans implemented in the first half of the 1990s.

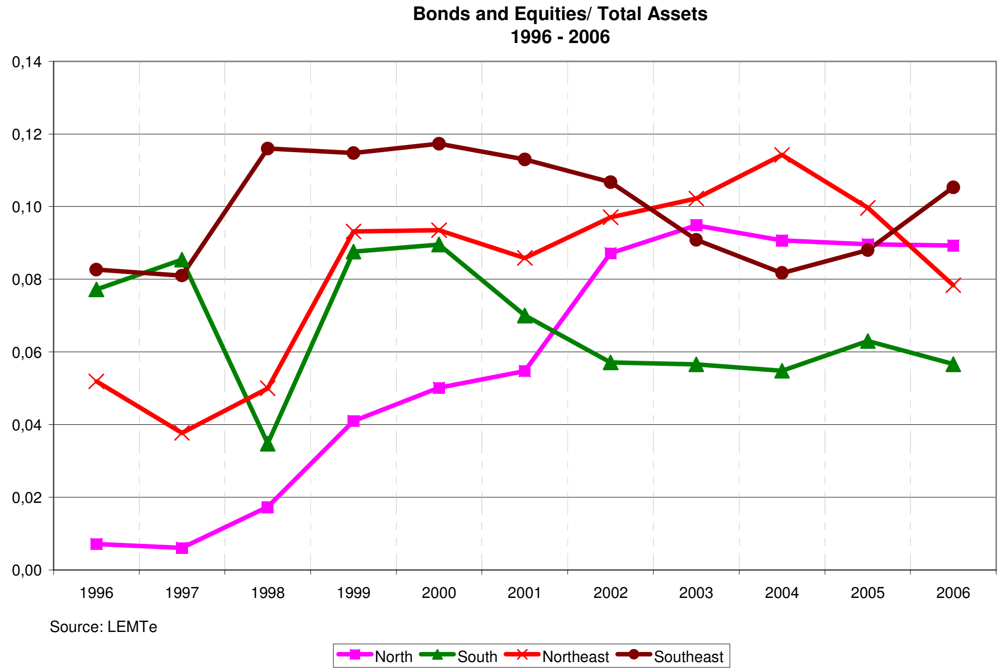
GRÁFICO 5



The analysis of Graph 5 also shows that the index Profits/Assets for the Southeast enjoyed a relative stability during the series. The South region experienced acute fluctuations until 1996, but from 1997 onwards, the index showed a clear upward trend. In the remaining regions, a positive trend can be observed, particularly after 1998. The upward trend from 1998 can be partly explained by the external crisis, which surfaced in that year and lead to increases in the interest rates on government bonds to up to 45% per year in 1999. The monetary policy stimulated banks to invest on such bonds. As will be seen below, the acquisition of government bonds increased at a fast rate after 1999, having determined, particularly for banks located in the North and Northeast, an improvement in the financial results.

The better understand the banking strategies that led to these result, particularly after the monetary stabilisation, we moved on to analyse the weight of two items in the total assets, Bonds and Equities and Credit. We start with the Bonds and Equities to total assets ratio. Graph 6 below shows this indicator by region for the years after the Real Plan. The graph highlights the generalised increase of the index from 1996, particularly after 1998. Due to the monetary policy discussed in the previous paragraph, banks were drawn to investment in government bonds, which were associated with lower risks than credit. This movement largely explains the increase if the index for the banking system as a whole.

GRAPH 6



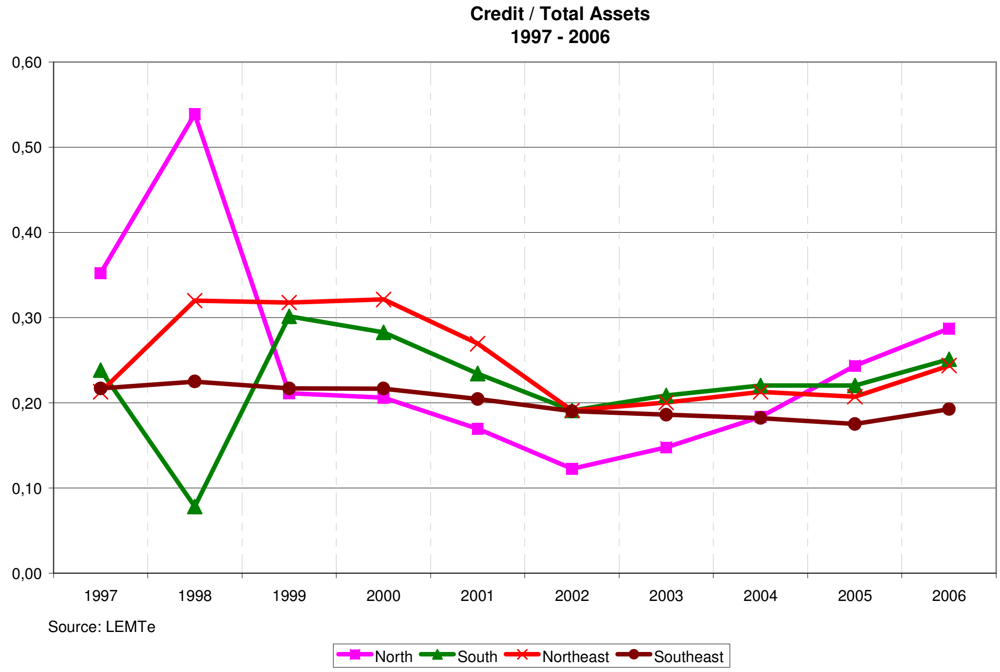
Source: LEMTe

In spite of the general trend observed, the graph above also allows us to conclude, however, the news strategies were associated with significant regional differences. First, the growth of the indicator for the North region is rather striking. During the period under consideration, the bonds and equities share on total assets rose from under 1% to over 9% in 2004, having shown stability after this year. Similarly, for the Northeast the indicator rose from 0.5% to over 11% in 2004, when it reached its peak. In the following years, a slight fall can be perceived.

On the other hand, a distinctive pattern could be observed for the South and Southeast. For both these regions, the weight of such asset grows until 2000, followed by a steady decrease until 2004. From this year onwards, the downward trend was reversed the bonds gained share on the remaining types of assets.

To complete the analysis of asset management of banking institutions, Graph 7 below shoes the evolution of the Credit to Total Assets ration for all regions. In this case, a completely different pattern can be observed in relation to that of bonds. As a general rule, also as a reflex of the prevailing macroeconomic conditions, the share of credits on total assets shows a generalised reduction for all regions. Once more, some regional heterogeneity can be perceived. The first outstanding feature is the fact that the reduction of the credit share is more acute for less developed regions, North and Northeast. For the first, the share which in 1997 corresponded to around 36%, fell to almost 12% in 2002, a reduction of over 24 points. From 2004, under the government of Lula da Silva, the share recovers to reach over 28%. For the Northeast, the share suffered a reduction of 14 points, from 32% in 1998 to 19% in 2000. Similarly to what occurred for the North, the share rose from that year, reaching around 24% in 2006.

GRAPH 7



Source: LEMTe

Even though the pattern is very similar to the two remaining regions – reduction until 2002 and then recovery – the volatility observed is less acute. The Southeast's share showed a steady decline from 1998 to 2005, from 22.5% to 17.5%. The decrease was, however, of only 5%, of which two were recovered in 2006. Finally, for the South the pattern was very similar to that of the Southeast, with a reduction of 5% until 2002 and a recovery of 6% from that year until 2006.

V. FINAL REMARKS

The combined analysis of the indicators presented in the previous section allows us to conclude that banks' branches located in less developed regions sustained an increasing profits to assets ratio through the reduction of the relative share of credits on total assets and the increase on investments on bonds and equities on a scale clearly superior to that observed on more developed regions, indicating, thus, a distinctive spatial differentiation of banking strategies. This differentiation would be the result of a more defensive strategy in less developed regions, which, due to a higher degree of economic uncertainty and a more pronounced volatility of the economic activity, leads to a reduction of the exposure to risk of credit concession. This behaviour can be observed in the reduction of the volume of credit, which would have been conceded only to safer projects.

This analysis confirms out hypothesis of the existence of regionally differentiated banking strategies. Despite of the identification of a more general line of action for banks located in all regions, as a response to the macroeconomic environment, the evidences shown point to the fact that the intensity of the more general pattern varied across regions. It is our contention that such heterogeneity has important implications for the economic performance of the Brazilian regions, given that it accentuates the existing regional inequalities.

REFERENCES

ALMEIDA, Daniel Bruno de Castro. *Bancos e Concentração de Crédito no Brasil*: 1995-2004. Belo Horizonte: Cedeplar. Dissertação de Mestrado, 2007. 90p.

AMADO, Adriana. A questão regional e o sistema financeiro no Brasil: uma interpretação pós-keynesiana. *Estudos econômicos*, v.27, n.3, p.417-40, 1997.

AMADO, Adriana. Moeda, financiamento, sistema financeiro e trajetórias de desenvolvimento regional desigual: a perspectiva pós-keynesiana. *Revista de Economia Política*, v. 18, n. 1, jan./mar. 1998.

ANDIMA-IBGE, *Sistema Financeiro*: uma análise a partir das Contas Nacionais 1990-1995. Rio de Janeiro: Andima, 1997.

ARAÚJO, Luís Alberto. *et al.* Competição e concentração entre os bancos brasileiros. In: ENCONTRO DE ECONOMIA DA REGIÃO SUL, 8., 2005, Porto Alegre, RS. *Anais*. Porto Alegre: ANPEC–SUL, 2005. (Disponível em CD-ROM)

ARESTIS, P.; DEMETRIADES, P. Financial development and economic growth: assessing the evidence. *Economic Journal*, v. 107, n. 442, p. 783-799, May 1997.

BARBACHAN, J.S.F. e FONSECA, M.M. *Concetração bancária brasileira*: uma análise microeconômica. São Paulo: IBMEC, 2004.

BAUM, C. *et al.* 'The second moments matter**:** the response of bank lending behavior to macroeconomic uncertainty'. *Working paper, 04/13,* University of Leicester, Leicester, UK:, 2004. 36 p.

CARVALHO, Carlos Eduardo; STUDART, Rogério; ALVES JR., Antônio José. *Desnacionalização do setor bancário e financiamento das empresas*: a experiência brasileira recente. Brasília: IPEA, 2002. 75p. (Texto para Discussão 882).

CORAZZA, G. . Crise e reestruturação bancária no Brasil. *Revista Análise*, Porto Alegre, v. 12, n. 2, p. 21-42, 2001.

CROCCO, M. et. al 'The behauviour of liquidity preference of banks and public and regional development: the case of Brazil. *Journal of Post Keynesian Economics*, Nova York, v. 28, n.2, p. 217 – 240, 2005

DE PAULA, L. F. R. *et al.* Ajuste Patrimonial e Padrão de Rentabilidade dos bancos Privados no Brasil durante o Plano Real (1994/98). *Estudos Econômicos*, São Paulo, v. 31, n. 2, pp. 285-319, abr/jun. 2001.

DEMETRIADES, P.O.; HUSSEIN, K.A. Does financial development cause economic growth? Time series evidence from 16 countries. *Journal of Development Economics*, v. 51, n. 2, p. 387-411, Dec.1996.

DOW, Scheila. The stages of banking development and the spatial evolution of financial systems. In: MARTIN, Ron (ed.). *Money and the space economy*. Londres: Willey, 1998.

GERTLER, M. e ROSE, A. 'Finance, Public Policy and Growth", in Caprio G., Atiljas, I. e Hanson, J.A. (eds) *Financial Reform: Theory and Experience*, Cambridge University Press, New York, pp. 13-45, 1994.

JAYARATNE, J.; STRAHAN, P. E. The finance-growth nexus: evidence from bank branch deregulation. *Quartely Journal of Economics*, v. 111, n. 3, p.639-670, Aug. 1996.

LEMTe, Laboratório de Estudos em Moeda e Território – CEDEPLAR – UFMG.

LEVINE, R. 'The legal environment, banks and long-run economic growth', *Journal of Money Credit and Banking*, vol. 30, n.3 pp. 596 – 613, 1998.

LEVINE, R. Financial development and economic growth: views and agenda. *Journal of Economic Literature*, v.35, n.2, p.688-726, Jun.1997.

MOORE, C.L., and HILL, J.M. "Interregional arbitrage and the supply of loanable funds." *Journal of Regional Science, 22*, 499–512, 1982.

NAKANE, M.; WEINTRAUB, D. *Bank privatization and productivity*: evidence for Brazil. Brasilia: Banco Central do Brasil, 2004. 54 p. (Working paper, 90)

PUGA, F. P. *Sistema financeiro brasileiro*: reestruturação recente, comparações internacionais e vulnerabilidade à crise cambial. Rio de Janeiro: BNDES, 1999. (Texto para Discussão 68)

RAJAN, R. G.; ZINGALES, L. Financial dependence and growth. *American Economic Review*, v. 88, n. 3, p. 559-586, June 1998.

ROBERTS, R.B., and FISHKIND, H.H. "The role of monetary forces in regional economic activity: an econometric simulation analysis." *Journal of Regional Science, 19* (1), 15–29, 1979.

RODRIGUEZ-FUENTES, C. J. (1998) "Credit Availability and Regional Development". *Papers in Regional Science*, v. 77, 1, p.63-75.

RODRIGUEZ-FUENTES, C. J. (2006) *Regional Monetary Policy*, Routledge, Abingdon, 2006

SANTOS, F. e CROCCO, M. 'Financiamento e desenvolvimento sob novas óticas'. In: *A Arquitetura da Exclusão* Observatório da Cidadania – Rio de Janeiro 2006.

SICSÚ, João; CROCCO, Marco. Em busca de uma teoria da localização das agências bancárias: algumas evidências do caso brasileiro. *Economia*, Niterói, v. 4, n. 1, p. 85-112, jan/jun. 2003.

SOARES, Ricardo P. *Evolução do crédito de 1994 a 1999*: uma explicação. Rio de Janeiro: IPEA, 2001. 46 p. (Texto para discussão 808)

World Bank and IMF *Financial sector assessment: a handbook* , Word Bank and International Monetary Fund, Washington, 2005.