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DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

ROUNDTABLE ON EXIT STRATEGIES

-- Note by the Delegation of Brazil --

This note is submitted by the delegation of Brazil to the Competition Committee FOR DISCUSSION at its forthcoming meeting to be held on 16 - 17 June 2010.

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ROUNDTABLE ON EXIT STRATEGIES

-- Note by Brazil --

1. Crisis and Reform of the Brazilian Financial System

1. Brazil has a very interesting experience in regulating financial markets in periods of crisis. Indeed, during the country´s military regime (which lasted from 1964 to 1985) the Law no. 6.024/73 was enacted which regulated interventions and extrajudicial liquidations of banks[1] with financial problems. Interestingly, this law was very important in that specific period because, with the oil crisis, there was a large loss of foreign reserves in 1974 creating a liquidity problem.

2. The first institution affected by that situation was Halles Bank in April of that year, followed by several other banks, such as Commercial Union Bank, one of the five largest in the country. Because of that, the government issued Decree no. 1.342/74, which authorised the Central Bank of Brazil (BCB) to use resources from Tax on Financial Operations (IOF), accumulated in the bank´s reserves, to restore and to reorganise the assets and liabilities involved in the crisis.

3. However, due to the lack of transparency during the military regime, the existence of this legal device – that allowed the full coverage of all the liabilities of troubled financial institutions – might have given wrong incentives regarding bank accountability. There were several interventions in private and public banks, even after civil elections in the 1980s, such as those made in Rio de Janeiro State Bank (Banerj) and Bahia State Bank (Baneb). In response to the public reaction against the use of tax payer´s money to help financial institutions, Congress, in drafting the new Constitution of 1988, expressly determined that (a) the financial transaction tax IOF should be fully allocated to the National Treasury; and (b) public resources should no longer be used in the reorganisation of financial institutions.

4. So, it was necessary to use new approaches to deal with liquidity problems. However banks in that period, from the late1980s to the early1990s, could profit a lot with the extraordinarily high inflation that Brazil experienced. Hence, BCB did not receive many demands to intervene in the financial system. However, with the institution of the new currency (the Real) in 1994 and a stabilised macroeconomic environment from then on, the situation began to change. There were important initiatives, such as the requirements for capitalisation of financial institutions, in line with international recommendations of the Basel Accords (Resolution no. 2.099/94). Also, in 1994, there were some interventions in state banks, by a Special Temporary Regime (RAET). These initiatives, however, were not strong enough as the situation at the time demanded, and, as a consequence, they did not prevent crisis in some important banks, such as National Bank and Economic Bank. The conclusion of economic experts at the time was that some other regulatory mechanism was required.

5. Accordingly, the government implemented the so called Programme for Promoting the Restructuring and Strengthening of the National Financial System (PROER), creating a line of credit administered by BCB to facilitate the absorption of less efficient institutions by more efficient and capitalised ones. Provisional Measure no. 1.179/95, also, favoured tax reduction for mergers of financial

[1] Created by the Decree 19.479/30 and implemented by Law 6.024/74.

institutions. Access to PROER credit lines was conditional upon BCB express authorisation, granted on a case by case analysis, taking as a prerequisite some administrative changes in the rescued institution.

6. This programme was able to protect depositors by transferring the healthy part of the assets of the affected financial institutions to a new controller group. These operations did not cause any kind of harm or loss to BCB or to public taxes. The credit line of central bank that fostered these mergers was fully guaranteed by public bonds or by a private insurance mechanism of the financial system itself called Fundo Garantidor de Crédito (FGC). Furthermore, former controllers did not benefit from this kind of intervention, since they were still liable for their negative heritage, which was separated from the good and healthy part of the financial institution.

7. The Provisional Measure no. 1.182 of November of 1995 (later converted into Law no. 9.447/97), increased the powers of BCB's intervention in the liquidation of financial institutions. Thus, stakeholders, liquidators and boards of directors, authorised by BCB, were given the power to transfer assets, rights and obligations; to sell or to lease property and rights; to agree on the assumption of obligations; and to reorganise the companies. This power was vital to allow the division of the healthy part ("good bank") from the insolvent bank ("bad bank"). This same Law no. 9.447/97 gave the BCB the power to determine the capitalisation of a financial institution, as well as corporate restructuring, including merger or division.

8. Finally, among the most important decisions taken by the Government amid the banking crisis of 1995 was the creation of FGC, a private deposit insurance mechanism. This was probably the most promising initiative set of measures adopted, despite the financial difficulties that the institutions were facing. The creation of FGC was authorised by the Resolution no. 2.127 of 1995, followed by the approval of its rules and regulation through Resolution no. 2.211 of 1995, both by the National Monetary Council (CMN). The FGC is a non-profit civil association, with an indefinite term of duration and instituted in the form of a private company. It aims to cover deposits and investments in the event of a decree of intervention, extrajudicial liquidation or bankruptcy of a participating institution of that fund. All financial institutions make contributions to FGC, except credit unions and credit co-operatives.

9. Together with these mergers, there were also many privatisations of banks, especially after the Provisional Measure no. 1.514/1996. It is important to highlight that while PROER fostered mergers between troubled institutions and healthy ones in the national level, there was also PROES a similar plan made in a state level. It is noteworthy, also, that there are authors[2] that disagree about the need for privatisation or mergers as tools to achieve and maintain stability in the financial system.

2. Exit Strategies during the Current Crisis

10. Although the U.S. government has made several attempts to contain the current crisis, some factors, such as the bankruptcy of Lehman Brothers and the volatile situations of Bear Stearns, Merrill Lynch & Company, Fannie Mae, Freddie Mac and AIG had repercussions all around the world and in many institutions, affecting global demand as a whole. Moreover, the supply of credit has gone down not only because of the crisis of confidence in financial institutions, but also due to the large amount of money laid out to save institutions in problematic positions.

11. Despite difficulties in some specific sectors of the economy, Brazil was not much affected by the last crisis as other countries were. Brazilian banks in fact presented very solid condition. Also, the main drive of the Brazilian Economy has been its own internal growth. Hence there was no need to take any strong remedy against this specific financial crisis.

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2 Gutierrez for instance.

12. Despite this, the government did take some steps to control crisis situations. Indeed, it enacted the Provisional Measure no. 442/2008 (converted into Law no. 11.882/2008) that facilitates the rescue of small banks and credit for exporters by the BCB. With this law aid to banks was facilitated because rediscount operations with the BCB as collateral could be guaranteed by the credit portfolios of the financial institutions itself. Furthermore, in rediscount operations, normally done within a day, if a bank has no cash to pay such obligations it must give federal bonds as collateral. Hence, besides accepting credit portfolios as collateral, the time given by BCB for this operation could be extended. Before the Provisional Measure no. 442/2008, only banks experiencing financial risk had extended terms in these operations. Therefore, in practice, this meant that the BCB would buy the loan portfolio of an institution if it failed to repay the rediscount in the extended window operation. There could also be the possibility that part of Brazil's international reserves, invested abroad in dollars, would be used in operations similar to the rediscount window with bonds or loan portfolios guarantees. Thus, exporters would have an easier way of getting loans rather than pleading to institutions that operate abroad. Also, the Provisional Measure no. 443 (converted into Law no. 11.908/09) authorised the Federal Economic Bank (CAIXA) and Bank of Brazil to buy shares in financial institutions (banks, insurance companies and pension funds) which were in difficulties due to the global financial crisis.

13. Furthermore, BCB lowered interest rates and the Federal Government fostered the consumption of some specific goods (such as vehicles) by lowering taxes and having specific policies to help poor people.

14. The government also extended the amount of investments made in a structural plan (PAC – Plan for the Acceleration of the Economy) in order to stimulate the internal demand.

3. Competition and Financial Security Objectives

15. In a scenario of systemic crisis, many countries seek to assess what the antitrust authority may consider about the merit of mergers and acquisitions. Indeed, many of the transactions, amid the financial crisis, could be taking place under the defence that they seek to avoid bankruptcy, which endanger the monetary system as a whole, resulting in losses to depositors of banks and, therefore, bringing impacts that go beyond microeconomic analysis. Antitrust authorities certainly have to deal with this tension.

16. In the field of market competition, there are two important debates, one regarding jurisdiction and another regarding the actual need for the Brazilian antitrust authority (CADE) to interfere in this matter.

3.1 Jurisdiction

17. In Brazil, there is a great legal debate about whether CADE can actually interfere in any way whatsoever in the national financial system. Even if the judiciary eventually clarifies whether CADE can interfere in this sector, one may also have to determine on what grounds antitrust interference is justified by law.

18. On this issue, it is important to note that, in 2001, the Federal Attorney General's Office issued a legal opinion concluding that the specificity of Brazil's banking law (Law no. 4.595/64) took precedence over the more general language of Law 8.884/94 (the national antitrust law), and thus effectively vested the BCB with exclusive jurisdiction over banks for all purposes. CADE has never acceded to this opinion, taking the position that Law no. 8884 (which was enacted after the banking law) is applicable by its terms to all commercial enterprises, and that CADE, as an autonomous agency, is not bound by a legal opinion issued by the Executive Branch.

19. This discussion was brought to the Brazilian Judiciary, that now has to decide if CADE can or cannot interfere in the banking system, from the standpoint of competition. The case under discussion is –

National Credit Bank (BCN) & Bradesco Bank versus CADE [3]. This case started in the administrative sphere, when CADE fined Bradesco and BCN, since both banks failed to notify the Brazilian Competition Protection System (BCPS) within the required time frame about their merger operation[4]. However, these banks filed a suit in the Brazilian Judiciary System challenging the scope of CADE´s competence regarding the financial system.

20. The case is still pending before the Superior Court of Justice. Bradesco and BCN pleaded to the Court to declare that BCB has exclusive jurisdiction to analyse mergers in the Brazilian financial system, independently of existing or not a systemic risk involved. CADE, on the other hand, understand that antitrust law and banking law can coexist, and antitrust authority is still competent to analyse mergers, if there is no systemic risk involved.[5] Two Justices already voted in this case. While Justice Eliane Calmon voted in favour of Bradesco and BCN, Justice Castro Meira understood that CADE can analyse mergers in a complementary manner. Other Justices are expected to present their opinions soon. Therefore, the question of whether CADE has or not jurisdiction regarding the financial system is yet to be clarified. But it must be highlighted that even if the Superior Court of Justice rules in favour of CADE, the BCPS would not be able to interfere in financial system if mergers are skilfully construed by BACEN´s jurisdiction to avoid systemic risk.

3.2 Mergers that do not involve systemic risk and competition policy

21. If systemic risk is not involved, CADE can analyse mergers. In such cases it is possible to use a tradition approach or even consider, in some extreme situations, the "*Failing Firm Doctrine*".

22. It is important also to mention that there were several mergers, chronologically made during this crisis, that were presented to BCPS. Therefore, CADE will have to analyse some important operations, such as the merger involving (i) Itaú and Unibanco (Merger Review 08012.011303/2008-96.); (ii) Bank of Brazil and Nossa Caixa (Merger Review 08012.011736/2008-41); (iii) Bank of Brazil and Santa Catarina Bank (BESC); among others. Recently, for example, CADE approved the merger between Bank of Brazil and Votorantim Bank (Merger Review 08012.000810/2009-85)

23. So, CADE will have an important role to define the competition rules of financial system, in the absence of systemic risk. On the other hand, as it was already mentioned, the extent of CADE´s jurisdiction is still being discussed by Superior Court of Justice.

3.3 On the Necessity to interfere or Not in the Financial System

24. Aside from this jurisdictional debate, there are some specific empirical aspects that must be answered before one makes any kind of normative conclusion about what should be done or not to safeguard competition in the financial sector in the post-global crisis period in Brazil. In other words, one has to ask what is desirable in terms of concentration in the sector.

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3 Judicial Procedure: RESP 1094218 – STJ.

4 CADE Merger: 08012.002381/2001-23.

5 The Federal Court of Appeals in this case decided that, when there is any issue concerning systemic risk of the financial system, the BCB is the sole administrative agency with jurisdiction to analyze mergers. However, when such a risk is not involved, then CADE is the administrative agency responsible to judge the merits of mergers between banks. The court also understood that the powers of CADE and BCB are distinct and complementary: There is possibility of coexistence of Law no. 4.595/64 with Law no. 8884/94, which should be applied in a complementary manner, since the first is limited to assessing the competitive issue in order to defend the stability of the financial system, while the second specifically takes care of the protection of competition itself Appeal to Writ of Mandamus no. 2002.34.00.033475-0/DF by Fagundes de Deus.

25. As pointed out by Tabak *et al.*[6], there are two conflicting theoretical forecasts on the relation between concentration and the fragility of the financial system. The first hypothesis notes that a more concentrated environment leads to more stability for several reasons:

> *According to Beck et al. (2006), one of the hypotheses of the relation concentration-stability is that it would be substantially easier to monitor a few banks in a concentrated banking system than supervising many banks in a less concentrated system. Following that perspective, banking supervision would be more effective and the risk of contagion, as well as of systemic crises, would be less pronounced in a concentrated market. Another basic hypothesis following that line of thought is that more competition would be associated with smaller profits, which would increase the incentives for banks to assume higher risks (risk shifting). This leads us to believe that, in less competitive systems, higher market power would lead to higher profits that, somehow, would serve as protection against adverse shocks and would increase the franchise value of the bank, reducing the managers´ and owners´ incentives to assume excessive risks and, consequently, reducing the probability of a systemic breakdown (Hellmann et al., 2000; Allen and Gale, 2000). Finally, competition tends to increase the rates paid to the depositors, decreasing the banks´ margins of gain and increasing the probability of bankruptcy (Matutes and Vives, 2000). Various other recent contributions, analysing important factors of the relation between loan market structure and some aspects of the banking sector's performance, strengthen the case for a concentration-stability relation. One of the lines of research explores the consequences of the aspects of the adverse selection and the problem of moral hazard on market fragility. Broecker (1990) and Nakamura (1993) state that a higher level of competition may make adverse selection problems more severe when borrowers that have been rejected at one bank can apply for loans at other banks. In a different vein more market power can decrease the moral hazard problems banks face as lenders. The results of Petersen and Rajan (1995) show that the credit market imposes constraints on the ability of lenders and borrowers to intertemporally share the surplus from investment projects, which would lead the banks in competitive markets to charge higher rates than the monopolist banks, when the firms are young. In the concentration-stability vision, the results obtained by Beck et al. (2006) indicate that the occurrence of crisis is less probable in more concentrated banking markets, even after controlling for differences in regulatory policies, institutional environment, macroeconomic conditions and shocks.*

26. On the other hand, the opposite hypothesis argues that the more concentrated the structure of the banking system, the more fragile it will be. Tabak *et al*. make the following considerations on this regard:

> *Boyd and De Nicoló (2005) demonstrate that the standard argument of the concentration-stability vision, the one that states that market power generates higher profits and, consequently more stability, is at least incomplete, and probably false, because it neglects the effects of market power and of the costs of the loans on borrower's behaviour. According to these authors, the high interest rates charged by the banks would induce the firms that take loans to assume higher risks, which would end up increasing systemic risk. Similarly, the results presented by the studies of Caminal and Matutes (2002) show that a lower degree of competition can lead to a decrease in credit rationing, higher loans and high probability of bankruptcy, even though they reinforce the idea that the relationship between market structure and banking failure is ambiguous. The basic hypotheses in the model adopted by Caminal and Matutes (2002) is that a monopolistic bank has more incentives to monitor its clients than a bank with less market power, decreasing*

6 TABAK, Benjamin Miranda; GUERRA, Solange Maria; LIMA, Eduardo José Araújo; CHANG, Eui Jung. *The Stability-Concentration Relationship in the Brazilian Banking System*. Working Paper 145. BCB. <http://www.bcb.gov.br/pec/wps/ingl/wps145.pdf> verified in May of 2010.

the credit rationing of loans. Another argument (Mishkin, 1999) is that in comparison with the less concentrated systems, the more concentrated structures would receive more government subsidies, which could create a moral hazard problem (typical of supposedly "too big to fail" institutions), encouraging those banks of greater importance to assume higher risks, increasing the system's fragility.

27. Tabak *et al*. point that there is some empirical evidence in favour of the concentration-stability hypothesis:

Allen and Gale (2000) analyse the US, UK and Canadian banking systems and find evidence that more concentrated systems show less financial instability. The authors argue that: i. Small banks have greater incentives to take risky behaviour; ii. Systems with large number of small banks may have problems of co-ordination and monitoring, and; iii. Larger banks are inherently more stable because of their greater ability to spread risks and they are less subject to contagion when the banking sector is subjected to some external shock. Additionally, other lines of research explore the determining factors of banking crisis, trying to find a set of early warning indicators, such as Kaminsky and Reinhart (1999) and Evans (2000), or searching for theoretical and empirical explanations for the negative events like Pesola (2005), who used panel data to analyse macroeconomic determinants for bankruptcy in the banking sectors located in Scandinavian countries, Belgium, Germany, Greece, Spain and United Kingdom, for the period between 1980 and 2002. According to the results, the high debts taken by clients combined with adverse shocks in the income and in the real interest rate contribute to increase the likelihood of bankruptcy in the banking sector. In sum, the theoretical literature does not provide a totally unambiguous view on the relation between banking concentration and financial stability.

28. Furthermore, Tabak *et* al. used an unbalanced panel data, with a dynamic specification to demonstrate that there is a negative relationship between Non-Performing Loan (NPL) and Herfindahl-Hirschman Index (HHI) in Brazil. According to their view this result reinforces the concentration-stability line of research. Of course, it is possible to discuss if their model as well as the variables used were suited to reach this conclusion.

29. On the other hand, if concentration-stability hypothesis is correct, then antitrust authorities will have a very difficult tradeoff to consider, before determine exactly how and when to interfere in financial systems. However, even when this complex tradeoff is not involved, there are many other hard questions to answer about the competitive environment itself in financial systems, regarding structural and behavioural issues.

3.4 Competition in the Brazilian Financial System

30. There are several studies that measured the concentration of the banking sector under a structural point of view. It is important to clarify the terminology of the main measures to assess the degree of concentration, such as Cr_K and HHI.

- CR_K (Concentration Ratio - CR, or concentration ratio) represents the sum of market shares (S) of the k largest firms

$$CR_k = \sum_{i=1}^{k} S_i$$

- HHI (or Herfindahl Hirschmann index) is the sum of the squares of market shares of the companies examined

$$HHI = \sum_{i=1}^{n} s_i^2$$

31. Although the methodology is simple, there are certain difficulties in determining accurately the concentration in the banking sector. As shown in the table below, many studies that intended to evaluate such concentrations showed some differences among themselves in regard to total bank assets in Brazil:

Table 1: HHI of Banking System in Brazil

	Nakane	Wichman e Neto	Araújo e Neto	Ponce, Araújo e Neto	Silva e Moraes
1994 – dec	706	---	---	---	---
1994 – jun		---	---	---	710
1995 – jun	678	---	---	---	---
1995 – dec		---	---	---	680
1996 – jun	674	---	---	---	---
1996 – dec		---	---	---	670
1997 – jun	676	---	---	---	---
1997 – dec		---	---	---	680
1998 – jun	786	---	---	---	---
1998 – dec		---	---	---	790
1999 - jun	744	---	819	---	---
1999 - dec			770	924	740
2000 – jun	687	790	764	---	---
2000 – dec		760	735	893	690
2001 – jun	630	660	632	---	---
2001 – dec		700	671	851	630
2002 – jun	692	700	675	---	---
2002 – dec		750	716	906	690
2003 – jun	758	820	760	---	---
2003 – dec		860	799	906	760

Source: Studies mentioned above

32. Such inaccuracy can occur because of simplifications or using different data. On the other hand these different results can cause differentiated conclusions in empirical analysis. Also, it is possible to evaluate the specific concentrations in loans and deposit.

Table 2: Number of banks and HHI of Assets, Loans and Deposits in Brazil

	Number of Banks	HHI Assets	HHI Loans	HHI Deposits
1994	246	706	990	858
1995	242	678	1001	991
1996	231	674	960	952
1997	217	676	1227	934
1998	203	786	1351	931
1999	194	744	1137	986
2000	192	687	875	902
2001	182	630	566	891
2002	167	692	596	884
2003	164	758	691	911

Source: NAKANE, Márcio I. Competition and Banking Spread: A Revision of the Evidence for Brazil. <http://www.bcb.gov.br/Pec/SeminarioEcoBanCre/Port/VI%20-%20Concorr%C3%AAncia%20-%204JSB.pdf>.

33. Some countries analyse these markets in a greater degree of detail in the product dimension, which goes beyond the general division between assets, loans and deposits. Indeed: "Treasury services, leasing, factoring, insurance, credit cards, foreign exchange, pension funds, housing finance, loans for

financing small and medium enterprises" could be analysed separately in some cases (Nakano and Alencar). But regardless of difficulties in defining the borders of product dimension of relevant markets, most studies point to a process of banking concentration in Brazil. In this respect, Cesar Augusto Tiburcio Silva and Marcos Campos Moraes point to the fact that, in Brazil, the number of banks has reduced drastically. From 1994 to 2003, the number of banks fell from 246 to 164, a reduction of 82 entities, or one third. The mergers of smaller banks by larger banks, in recent years, apparently accelerated the concentration trend in the Brazilian banking system. The ten largest banks, which in December 1994 held 56.44% of total assets of financial system, were responsible for 67.33% of total assets of the system in 2003 (E. Silva Moraes) However, the existence of 164 banks together with an HHI between 700 and 900 points to levels of concentration lower than most banking systems around the world, according Bikker and Haaf (2002):

Table 3: Concentration in Financial Sector

Countries	HHI	CR3	CR5	CR10	Number of Banks
Australia	1400	57	77	90	31
Austria	1400	53	67	77	78
Belgium	1200	52	75	87	79
Canada	1400	54	82	94	44
Denmark	1700	67	80	91	91
Finland	2400	73	91	100	12
France	500	30	45	64	336
Germany	300	22	31	46	1803
Greece	2000	66	82	94	22
Ireland	1700	65	73	84	30
Italy	400	27	40	54	331
Japan	600	39	49	56	140
South Korea	1100	45	68	96	13
Luxembourg	300	20	30	49	118
Netherlands	2300	78	87	93	45
New Zealand	1800	63	90	100	8
Norway	1200	56	67	81	35
Portugal	900	40	57	82	40
Spain	800	45	56	69	140
Sweden	1200	53	73	92	21
Switzerland	2600	72	77	82	325
United Kingdom	600	34	47	68	186
United States	200	15	23	38	717

Source: Bikker e Haaf (2002)

34. Also, according to a survey by the World Bank for 92 countries, Brazil is ranked 12th in terms of less concentration in relation to bank assets. But Nakane (2002) does state that these numbers should be viewed with caution, since the data used in the studies allude to banks separately, not taking into account their respective corporate groups. Moreover, as already mentioned, the market in which financial institutions compete may have a more limited scope, as contended by Tonooka and Koyama (2003).

35. Geographically, also, groups of clients served by a large number of institutions enjoy the benefits of more intense competition and pay lower interest rates, while other groups served by few banks, may enjoy a weaker competition environment.

> *... Why do some banks prefer to operate in areas where competition is more intense instead of approaching the localities where the number of banks is lower, so that, in equilibrium, competition is similar in every market? A reason lies in the relative size of local markets. Regions where demand is relatively low do not contain a large number of banks because the potential profits are not sufficient to cover the installation costs. (...) This result has important consequences for a country like Brazil, with significant regional disparities in income and population. The data showed that the poorest and least populated regions attract a smaller number of banks. This fact restricts competition and, ultimately, the granting of credit. There is thus a mechanism that reinforces the perpetuation of disparities and justifies public policies that favour the granting of credit to poor regions (Farina and Ferreira).*

36. Hence the competition authority must take into consideration the geographic dimension of financial competition environment. However, there are a lot of difficulties in analysing the impact of mergers in different regions of Brazil, especially regarding the availability of a good database on impacts. The BCB has a lot of information about the market, even in municipal level, but CADE does not have total access of this data, in a disaggregated manner.

37. Besides the evaluation of market structure, there are tests that seek to measure the "degree of competitiveness" or "market power" of the companies through its conduct. This kind of test applied to the Brazilian banking sector already used several methodologies, such as the Bresnahan and Lau 1982 methodology, the Panzar and Rosse 1987 methodology, the Jaumandreu and Lorens, 2002 methodology, among others.

38. Nakane (2002) was a pioneer in using the methodology developed by Bresnahan and Lau (1982) to test the market power of Brazilian banks in the segment of credit. As Nakane explained, this methodology has been used to analyse the market power of banks in Colombia [Barajas *et al*. (1999)], Uruguay (Spiller and Favaro (1984)], Canada [Shaffer (1993)], USA [Shaffer (1989)], Finland [Vesala (1995)] and a group of European countries [France, Denmark, Belgium, Germany, Holland, Spain and United Kingdom by Neven and Roller (1999)]. According to Nakane:

> *The empirical evidence is diverse. The above mentioned studies reach the conclusion that the banking industry is competitive in Canada, in the United States, and in Colombia. The Uruguayan banking system can be represented as a Stackelberg oligopoly model of leaders and followers. The Finnish banking system shows imperfect competition but no cartelisation. Finally, there is evidence of cartel behaviour for the European banks.*

39. This test uses an econometric tool to see how prices behave if the demand curve is rotated. It is expected to see different reactions of prices, in this particular experiment, in a perfect competition scenario and in a cartel scenario. According to empirical evidence, the measure of market power estimated for the Brazilian banking sector by Nakane (2002) λ was equalled to 0.0017. Although its magnitude was numerically small, its value was considered different from zero at 5% statistical significance. According to the test, Brazilian banks cannot be included in any of the two polar structures, admittedly perfect competition and monopoly/cartel, but they have some market power.

40. Another test to measure market power is Panzar and Rosse Test. In Brazil, Belaish (2003), Araujo and Jorge Neto (2005) and Araujo, Jorge Neto and Ponce (2005) used such methodology. This test analyses the H statistics that measure the variation of profits in respect of variation of costs. The key point

to understand this test is that the product of a monopoly and its profits decline to the extent that the marginal cost curve rises. By contrast, in perfectly competitive sectors, an increase in marginal cost is fully reflected in prices, which ends up increasing the total receipts as a whole. Between these two extremes lies the case of oligopolistic structures. After performing this test, using 12 specifications of demand, Belaïsch (2003) rejected the hypothesis of collusion. In four specifications the hypothesis of perfect competition was not rejected. Moreover, similar to the studies of Nakane pointed out, most of the tests indicated some degree of market power that would be closer to perfect competition scenario than cartel/monopoly scenario.

41. There are other alternative methods, like the model developed by Jaumandreu and Lorence and applied to the Brazilian case by Petterini and Jorge Neto (2003).It should be noted that, even using different data and methodologies, all tests (Nakane, Belaïsch, Petterini and Jorge Neto) rejected the hypothesis of collusion/monopoly, but did not reject the possibility, to some degree, of market power in the Brazilian banking sector.

42. On the other hand, Professor Alberto Salvo considered that these techniques described above (particularly that of Bresnahan-Lau) should be used cautiously, since, besides having a series of problems with bias by technical problems, the evidence pointing to perfect competition could be dubious if the cartel is under pressure from a regulator, or if it wants to avoid detection (Harrington 2004, 2005), or if it is adopting a focal price, among many other situations. Hence, Salvo stated that pricing strategies in the real world are extremely complex and it is not possible to draw conclusions from the models mentioned above if there is or not market power relying only on very specific behavioural assumptions.

43. Concerning efficiency, Wichmann and Jorge Neto argued that larger banks are more efficient than smaller banks in the Brazilian system using empirical data. However, for Belaïsch the increase in bank concentration in Brazil is not due to efficiencies. Furthermore, Berger, Demstez and Strahan (1999) are very sceptical to accept the argument that the efficiencies in banks are due to mergers. This is another empirical question that must be treated properly before CADE decides to interfere or not in this sector. So, there are a lot of technical problems regarding the relationship between competition variables in the financial system that must be clarified before any normative conclusion can be established.

44. Of course governments must act with asymmetric information, but it must be considered that there are a lot of tradeoffs in the decision of interfering in this sector.

3.5 Public Banks and Competition Policy

45. Another important tradeoff refers to mergers involving public banks. There are some authors that discuss the impact of Brazilian public banks in interest rates and in the monetary stability during crisis. For instance, Alexandre Rands BARROS understands that public Banks are inefficient institutions and do not play an important role in financial system:

> *"…Therefore, the banking market in Brazil works with two types of institutions. Both are profit maximisers, but one of them, the state owned banks, has a few additional restrictions on its strategy, which is to carry the burden of some public policies and to face some management inefficiencies. The privately owned banks, on their turn, do not have to carry such losses, but they also do not have access to some of these policies, which to some extent, and with proper choice of customers, could be profitable. Retirement benefits payments are exceptions in which they can engage. These disbursements have been reasonably profitable for POB, especially as an instrument to keep the fidelity of potentially profitable customers. (…) The major hypothesis of this paper is that when governments enforce state owned banks to bear part of the transaction costs of public policies and operational inefficiency, they force such banks in their optimal*

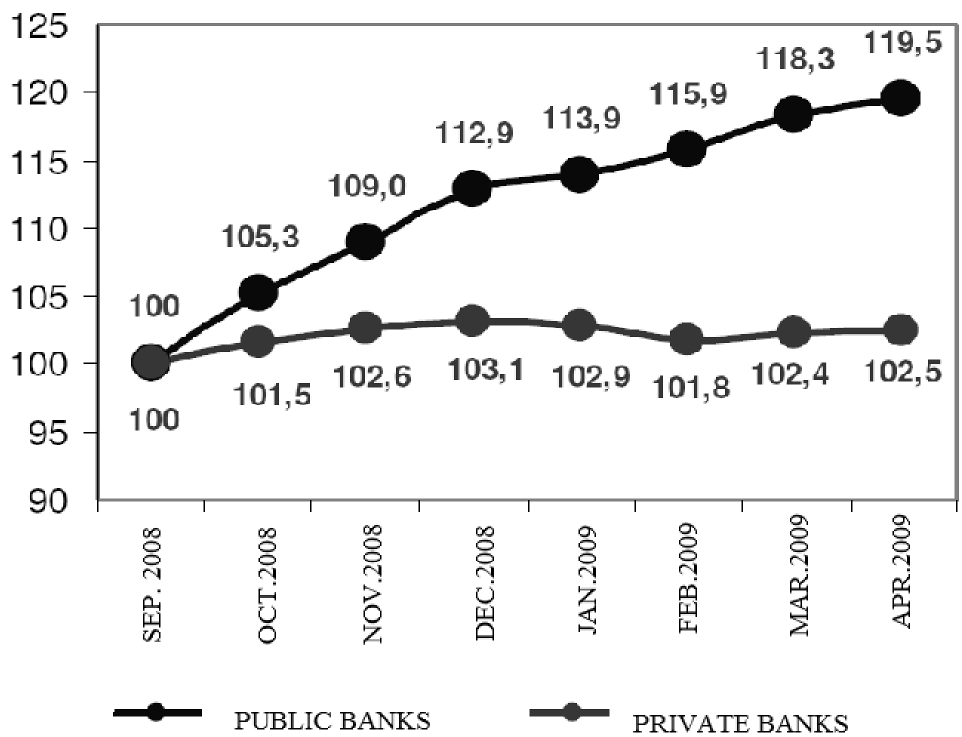
> *strategy to push prices of their services up. This increases the relative competitiveness of privately owned banks and also allows than to practice higher prices on their services, which is not matched by proportionally higher costs. Therefore, they benefit from higher profits and higher spread of interest rates paid and charged from their customers…."*

46. Presenting a very different approach, Celina Yumiko OZAWA argued that the existence of public banks improves the standard of competition environment. On her opinion, Bank of Brazil has different interests compared to private banks. After estimating residual demand, OZAWA presented evidences that Bank of Brazil did not fully exercise its market power in financial system. According to OZAWA:

> *"The difference that Bank of Brazil has from other banks in the sample is the fact that it is a public bank. This may be one of the factors that explain that despite the availability of conditions, the bank failed to fully exercise market power that it would enjoy. A private bank, with similar structural conditions for exercising market power, would certainly exercise it, because that would maximise its profits. (…) For a state bank, however, there are other objectives, which may be political and social ones".*

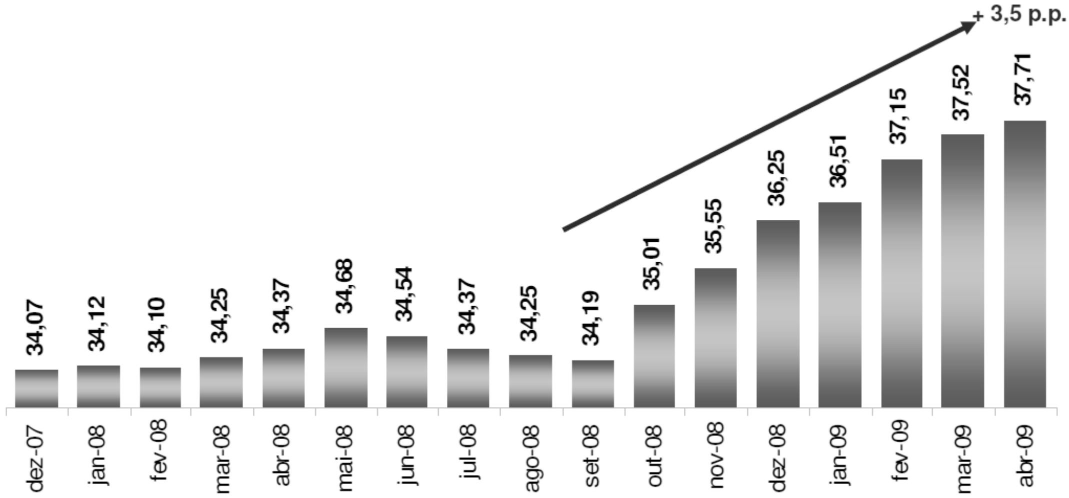
47. Also, Minister Guido Mantega understands that public banks had an important role to find exit strategies during the current crisis. According to his point of view, public banks had an important role in implementing anti-cyclic policies, fostering demand during crisis period.

Loans during Crisis (%)



Source: http://www.fazenda.gov.br/portugues/documentos/2009/p220609.pdf

Relative importance of Brazilian public banks (%)



Source: http://www.fazenda.gov.br/portugues/documentos/2009/p220609.pdf

48. By this hypothesis, the existence of commercial public banks could be justified from an economic standpoint, by the need to correct market failures in providing financial intermediation services. One of these flaws is the lack of perception of positive externalities from banking to economic growth and social welfare. The gain of each bank to offer banking services would be less than the benefit of society in having the services themselves.

49. Of course, there are many other theoretical aspects derived from this important debate, that maybe useful for competition policies.

3.6 Regulatory problems

50. Besides the problem of concentration itself, there are some regulatory problems specific to the banking system. According to Nakane and Alencar, the banking sector presents significant barriers to entry, which relate to the cost of establishing networks of banking agencies, regulatory requirements (requirements for establishing new banks, for example), the existence of economies of scale and scope, the establishments of networks of Automated Teller Machines (ATMs) - difficulty in acquiring ATMs and resistance to sharing them -, establishment of brand reputation, among others. Indeed, this is a sector that has some peculiarities, such as: (i) asymmetric information, (ii) customer loyalty, and (iii) transfer costs - switching costs, (iv) informational cost, and (v) moral hazard / adverse selection.

51. According to Nakane and Alencar, to solve some of these problems, antitrust authorities may, in specific cases, recommend both structural remedies (such as sale of branches, subsidiary banks, active lines of products) and behavioural remedies (ensuring access to share electronic networks to smaller competitors, among others)

52. In addition to the traditional competitive measures, it is possible to use the regulatory remedies to tackle the problems reported above, increasing the degree of rivalry. In this regard, BCB has taken pro-competitive steps to diminish the entry barriers in this sector, such as: credit portability investment accounts portability informational portability, etc (See, for example, BCB´s resolutions no. 2.835/2001, 3401/2006, 3279/2005, 3402/2006, 3424/2006, and BCB´s internal regulations no.3248/2004 and 3256/2004). Regarding transparency, it should be mentioned that BCB Resolution no. 2835 on the

transparency of check´s fees, determining the explanation of the effective rate charged and values to consumers in a very easy and understandable way. There is also the concern of BCB to disclose on its website information about charges and rates, and the ranking of complaints against the banks (see also BCB´s resolutions no. 2.878/2001 and 2.892/2000 on transparency issues). Finally, there are several other laudable initiatives (in relation to regulation of credit unions, non-banking financial institutions, microcredit operations) to be credited to the BCB. Such excellent measures can and should be encouraged and enhanced by the joint relationship between antitrust and monetary authorities.

4. Crisis Proof Models

53. There could be competition solutions to crisis situations, in several manners. However, as explained above, CADE has no jurisdiction to act in this particular aspect and it is very complex to have normative conclusions, considering the inherent complex tradeoffs in this kind of situation. Some policies, however, are independent of the national circumstances and could be adopted to avoid financial crisis.

54. For example, it is important to educate consumers on how to administer their finances and the consequences of their actions regarding credit. Also, it is important to protect the consumers in times of crisis. For that, it is necessary to avoid bankruptcy.

55. Also, and more importantly, it is possible to have a security mechanism, such as Fundo Garantidor de Crédito (FGC), or to have rediscount flexible mechanisms to use in times of crisis (such as the one approved by Provisional Measure no. 442/2008). It is important, also, to prosecute persons who are liable for causing troubling financial situations, especially for their bad managerial practices.

56. On the other hand, it is possible not to focus just only on national remedies, but also in some other aspects of this crisis. In the international level, for example, not withstand the merits of Triffin´s dilemma, it is important to think, theoretically, if the international financial system is correctly structured. Also, from the international point of view, the idea of creating an international body that monitors the conduct of national financial systems could be very interesting to foster accountability of national regulators.

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