WORKING PAPER 273

Implementation of Basel Rules in Brazil: What are the Implications for Development Finance?

Ricardo Gottschalk and Cecilia Azevedo Sodré
February 2007

IDS Institute of Development Studies

About IDS

The Institute of Development Studies is one of the world's leading organisations for research, teaching and communications on international development. Founded in 1966, the Institute enjoys an international reputation based on the quality of its work and the rigour with which it applies academic skills to real world challenges. Its purpose is to understand and explain the world, and to try to change it – to influence as well as to inform.

IDS hosts five dynamic research programmes, five popular postgraduate courses, and a family of world-class web-based knowledge services. These three spheres are integrated in a unique combination – as a development knowledge hub, IDS is connected into and is a convenor of networks throughout the world.

The Institute is home to approximately 80 researchers, 50 knowledge services staff, 50 support staff and about 150 students at any one time. But the IDS community extends far beyond, encompassing an extensive network of partners, former staff and students across the development community worldwide.

For further information on IDS publications and for a free catalogue, contact:
IDS Communications Unit
Institute of Development Studies
at the University of Sussex
Brighton BN1 9RE, UK

Tel: +44 (0) 1273 678269
Fax: +44 (0) 1273 621202
E-mail: bookshop@ids.ac.uk
Web: www.ids.ac.uk/ids/bookshop

IDS is a charitable company, limited by guarantee and registered in England (No. 877338).

IDS WORKING PAPER 273

Implementation of Basel Rules in Brazil: What are the Implications for Development Finance?

Ricardo Gottschalk and Cecilia Azevedo Sodré
February 2007

Institute of Development Studies at the University of Sussex Brighton BN1 9RE UK

Implementation of Basel Rules in Brazil: What are the Implications for Development Finance?
Ricardo Gottschalk and Cecilia Azevedo Sodré
IDS Working Paper 273

First published by the Institute of Development Studies in February 2007
© Institute of Development Studies 2007
ISBN: 978 1 85864 637 5

A catalogue record for this publication is available from the British Library.
All rights reserved. Reproduction, copy, transmission, or translation of any part of this publication may be made only under the following conditions:
- with the prior permission of the publisher; or
- with a licence from the Copyright Licensing Agency Ltd., 90 Tottenham Court Road, London W1P 9HE, UK, or from another national licensing agency; or
- under the terms set out below.

This publication is copyright, but may be reproduced by any method without fee for teaching or non-profit purposes, but not for resale. Formal permission is required for all such uses, but normally will be granted immediately. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, prior written permission must be obtained from the publisher and a fee may be payable.

Available from:
Communications Unit
Institute of Development Studies
at the University of Sussex
Brighton BN1 9RE, UK
Tel: +44 (0) 1273 678269
Fax: +44 (0) 1273 621202
E-mail: bookshop@ids.ac.uk
Web: www.ids.ac.uk/ids/bookshop

Printed by Imagedata Group, Brighton UK
IDS is a charitable company limited by guarantee and registered in England (No. 877338).

Implementation of Basel Rules in Brazil: What are the Implications for Development Finance?

Ricardo Gottschalk and Cecilia Azevedo Sodré

Abstract

This paper is set to examine the developmental impact of international Codes and Standards (C&S) as they are applied to the banking system in Brazil. It is driven by the questions: to what extent has compliance with international C&S affected, or may affect in the future, credit to the SMEs and the poor? Through what mechanisms? What changes (institutional, other) have occurred as a result? The paper focuses on the implementation of the Basel rules – Basel I and II. It finds strong indications that, as a result of implementation of Basel I in Brazil, credit as a proportion of the country's GDP declined gradually between 1994 (when Basel I was adopted) and early this century. The paper also argues that Basel I probably contributed to the decline in the number of banks in Brazil since 1994, and to banking concentration as well. Furthermore, the paper shows that although Basel I has affected credit in Brazil, there is no clear evidence that credit to the SMEs, to rural producers or to the urban poor was negatively affected, at least not in a major way. The paper suggests that a main reason for this outcome is that credit patterns during the period under Basel I have been influenced by directed credit policy, which in a number of cases were intended to protect the less favoured segments. In relation to Basel II, the paper shows that Brazil's regulators are proposing a gradual approach for the full implementation of these new banking rules. The paper sees this approach as appropriate for a developing country like Brazil where banks need time, resources and capacity building to be able to adopt Basel II in its entirety. But it also argues that the proposed framework lacks any countervailing mechanisms or instruments to address three key potentially negative implications concerning the new Basel rules: possible further banking concentration, concentration of banks' portfolios away from SMEs and towards big corporations, and accentuated bank credit pro-cyclicality.

Keywords: Basel Rule, development finance, SMES, the poor

Ricardo Gottschalk is a Research Fellow at the Institute of Development Studies. He is an economist with current research interest in the developmental impact of capital flows to emerging economies. Other interests include reform of the international financial architecture, macroeconomics of developing countries, the macroeconomic impacts of China and India on other development countries and their policy responses; external financial needs of developing economies and sequencing of capital account liberalisation. He has long-term work and research experience in Brazil.

Cecilia Azevedo Sodré is an economist with extensive work and research experience in financial markets. She has been a visiting student at IDS and is a PhD Candidate from the University of Campinas (UNICAMP), Brazil.

Contents

Tables

Figures

Acknowledgements

This paper was prepared as part of the project 'Codes and Standards of International Best Practice: Assessing their Impact on Development Finance', funded by the UK Department for International Development (DFID). We are thankful to DFID for their financial support and to Laura Bolton for her statistical work. The usual caveats apply.

Acronyms

BACEN	Banco Central do Brasil
BANDES	Banco de Desenvolvimento do Espírito Santo (Development Bank of Espírito Santo State)
BANRISUL	Banco do Estado do Rio Grande do Sul
BASA	Banco da Amazonia
BB	Banco do Brasil
BCP	Basel Committee's Core Principles for Effective Banking Supervision
BDMG	Banco de Desenvolvimento de Minas Gerais (Development Bank of Minas Gerais State)
BIS	Bank for International Settlements
BNB	Banco do Nordeste do Brasil
BNDES	Banco Nacional de Desenvolvimento Economico e Social
BRDE	Banco Regional de Desenvolvimento do Extremo Sul
C&S	Codes and Standards
CEF	Caixa Economica Federal
CSFI	Centre for the Study of Financial Innovation
FEBRABAN	Federacao Brasileira de Bancos (Brazil' Federation of Banks)
FSF	Financial Stability Forum
IRB	Internal Ratings Based Approach
MDBs	Multilateral Development Banks
MSEs	Micro and Small Enterprises
PROER	Programa de Estimulo a Reestruracao e ao Fortalecimento do Sistema Financeiro (Programme for the Restructuring and Strengthening of the Financial System)
PROES	Programa de Incentivo a Reducao do Setor Publico Estadual na Atividade Bancaria (Programme of Incentives for the Reduction of State Level Public Sector in the Banking Activities)
PRONAF	Programa Nacional de Agricultura Familiar (National Programme for Strengthening Family-Based Agriculture)
SMEs	Small and Medium-sized Enterprises

1 Introduction

Since the East Asian crisis, developing countries have been encouraged to implement codes and standards (C&S) of international best practice in the financial sector.[1] The main objective of this initiative has been to strengthen these countries' financial systems, thereby reducing their vulnerability to shocks and changing circumstances in the global environment. Many developing countries have made strides in enhancing their financial systems through the adoption of international C&S. Of course, initial efforts to improve banking supervision and regulation, which are part of these standards, can be detected since the late 1980s and early 1990s, when developing countries started to undertake financial liberalisation reforms.

The main purpose of this paper is to examine the developmental impact of international C&S, as they are applied to the banking system in Brazil. A parallel study has been undertaken for India, whose findings are also reported in an IDS Working Paper. The study was driven by the question: *to what extent has compliance with international C&S affected, or may affect in the future, credit to SMEs and the poor?* This question is important because efforts have been made to assess the degree of implementation of standards in Brazil, but little has been done to see if and how implementation of standards has affected the country's development finance. In addressing this question, the study focuses on the implementation of the Basel Core Principles for Effective Banking Supervision, and the Basel Capital Accords (Basel I and II).

The paper addresses in particular the following questions:

1 Through what mechanisms may the adoption of C&S affect development finance, and what institutional changes may occur as a result?

2 What is the impact of these changes on the provision of finance to SMEs and the poor?

3 If the impacts of adoption of C&S on development finance are negative, what new modalities of development finance, if any, are emerging in Brazil to overcome such shortcomings?

To address and find answers to these questions, extensive interviews were conducted in Brazil,[2] on which this paper draws. In addition, it draws on literature review, and data collection and analysis of key national financial indicators.

---

1 Of importance here are those 12 C&S the Financial Stability Forum (FSF) considers as key for sound financial systems. These are standards in monetary and financial policy transparency, fiscal policy transparency, data dissemination, insolvency, corporate governance, accounting, auditing, payment and settlement, market integrity, banking supervision, securities regulation and insurance supervision – see FSF website www.fsforum.org/Standards/KeySTds.html

The main findings are that Basel I has contributed to a sharp fall in the share of banks' credit assets in their total assets, and to a declining trend in total credit as a proportion of the country's GDP. This is in itself a worrying trend, given that in Brazil total credit as a proportion of GDP was already very low. The adoption of Basel I in Brazil probably has also contributed to a higher degree of banking concentration. This fact can have negative implications for the provision of credit to the SMEs, as the large banks in Brazil have little incentive to cater for this segment of the market.

But most worrying among the findings was that, despite international consensus that the New Basel rules (known as Basel II) may restrict credit to the SMEs, scant thought is being given in Brazil on what could be done to mitigate this effect taking place, when the new rules come into effect in early 2007. A negative impact on development finance could happen mainly through further banking concentration and the concentration of banks' credit portfolio away from SMEs and towards big companies. Moreover, little is being done to address a further likely implication, which is the increase in the pro-cyclicality of bank credit.

On the positive side, the study has found that the maintenance of a few development banks despite ample banking restructuring towards reducing the number of public banks, and of a long-standing system of directed credit, has helped protect credit levels to productive urban sectors and rural activities. Thus, both development banks and directed credit, which are key parts of the country's development finance architecture, acted as countervailing forces against the negative effects of the Basel rules on credit to the less favoured.

The paper is organised in four sections. The second section starts with a discussion on why to explore the link between C&S and development finance, and why institutions for development finance are still important. The third section looks at what steps Brazil has undertaken towards adoption of Basel I and II, and how banks have responded to that. As regards Basel I, it explains how the Brazilian government applied it to the country's banking system, how banks adjusted to it, and what the government did to help them overcome the difficulties they faced in the adjustment process. Concerning Basel II, the paper reports how the Brazilian banking authorities intend to apply it to Brazil, and how Brazilian banks are preparing themselves for the New Capital Accord. It discusses possible implications of Basel II for development finance, as well as the views and concerns of both the public and private banking sectors on the matter.

The fourth section describes the structure of Brazil's financial system, and how it together with credit has evolved in the country since 1994, when Basel I was adopted. These trends are analysed with the intent of answering some of the

2 The interviews were conducted with central bank officials, including top financial regulators based in these institutions; representatives of national associations of banks, bankers from both public and private banks, and senior financial market consultants.

questions raised in the second section, such as whether credit declined and if so to whom, and what role Basel I may have had in the process. Finally, the paper offers suggestions on ways to reduce the possible negative effects of Basel II on development finance in Brazil, as well as lessons for other developing countries.

2 Codes and standards and development finance

2.1 Why linking C&S to development finance?

C&S have the clear purpose of helping to strengthen domestic financial systems in developing countries. They are not intended to address their development financing needs. The latter should be addressed through institutional action. But C&S are not a fixed set of rules countries should adopt unquestionably. They are a package involving a number of general and specific rules for adoption, and developing country regulators have the discretion to choose those rules – and if necessary adapt them – that are most suited to their countries' needs and circumstances.

This study takes the view that within the C&S package certain rules can be inimical to growth and poverty reduction. They may contribute to the reshaping of a developing country financial system in a way that undermines the ability of the system to provide development finance. Moreover, rules change over time and new rules can sometimes be complex, making it difficult to figure out their possible implications for stability, growth or poverty reduction.

Today, developing countries are being encouraged to strengthen their financial systems through compliance with international C&S. In this context, developing country regulators are facing a key challenge: how to adopt these C&S at the national level. Concerning C&S in the banking system, the challenge has become even more difficult, as a new package of international standards – the New Basel Capital Accord (or Basel II), has been recently approved. Although there is an ongoing debate about a number of technical issues involving the adoption of these new standards, little has been discussed about their possible implications for credit provision to development-related projects.

This is worrying, because these standards are being implemented at a time when there has been scant support for developing countries to build institutions to support development finance. Where such institutions exist, in most cases efforts have been not to strengthen but to dismantle them. So, lack of attention to regulatory implications for development finance is bound to compound the problem.

2.2 Why are institutions for development finance still important?

Financial markets are characterised by market failures and missing markets. In developing countries in particular there is a lack of certain markets – for

example markets for long-term credits. This is partly due to lack of sophisticated instruments, which make it extremely hard for intermediaries to transform short-term liabilities into long-term finance, a crucial ingredient for large development projects. Moreover, in a number of cases private returns differ from social returns. Banks therefore may choose not the project that offers the highest total returns, but the one that the bank itself has the highest return (Stiglitz and Weiss 1981). Missing markets and externalities thus justify institutional action, to ensure that socially efficient projects are financed.

Financial markets suffer in particular from information asymmetry, which impairs the ability of the banking system to assess risk. The result is that credit is rationed (Stiglitz and Weiss 1981). Because markets are not cleared, the banking system ends up operating in an inefficient way. The system is moreover inefficient in how it allocates resources. Due to information asymmetry, the system becomes biased towards lending to big companies and against small borrowers.

2.3 Can C&S address the informational problems, thereby helping the banking systems overcome their lending limitations?

Financial policy transparency and data dissemination are two among the main standards in the financial sector. These are expected to improve financial stability and efficiency. Data dissemination (and therefore information availability) is a key standard in support of financial efficiency. The rationale is that lenders and investors will be able to make better informed allocation decisions. This is a key hypothesis that, if true, would in good measure help tackle the information asymmetry problems raised by Stiglitz and his followers.

However, we believe that the information asymmetry problem cannot be entirely overcome. The first reason is that information is costly, especially for banks in developing countries. Second, even if information is made available, still it is not totally exogenous. Borrowers' behaviour can be affected by the lenders' actions, for example by the level of interest rates they charge (Stiglitz and Weiss 1981; Stiglitz 1993). Given that inefficiencies arise from imperfect information, a case exists for government intervention to improve efficiency in the financial system.

Thus, greater transparency and availability of information may improve the stability and efficiency of the financial system, but not entirely. In addition, we ask the question: can certain C&S be inimical to specific development objectives, such as the levels of credit provision, and credit provision to the SMEs and the poor? Going a step further, can they even undermine stability, if not properly implemented?

The recently approved New Basel Capital Accord or Basel II has as one of its main objectives to encourage internationally active banks to adopt risk sensitive models so that credit and other risks can be more accurately measured. These risk sensitive models to work properly require the use by banks of a large set of data information on their current and prospective clients. Efforts to obtain

information about potential borrowers are seen as a positive aspect. It can reduce lenders' uncertainty about borrowers' ability to honour loan contracts, with a consequent positive impact on the cost and possibly availability of funds to projects that are economically sound.

We nonetheless believe that there is a limit to the extent to which one can obtain information about borrowers. This is especially true for small borrowers, who in developing countries are in their large majority in the informal sector, which makes it extremely difficult for banks to obtain the sort of information they need for risk assessment.

More broadly, we raise three objections in relation to Basel II and the models it proposes for adoption:

1 To the extent that risk-sensitive models are not universally adopted, but only by the larger banks, it can lead to banking concentration.

2 The use of these models can lead to concentration of a banks' portfolio away from SMEs and towards big corporations.

3 Being risk sensitive, these models can moreover increase the pro-cyclicality of bank lending.

These possible negative implications, which will serve as a guide in our study, have been pointed out by a number of international policymakers and academics, including Borio, Furfine and Lowe (2003) and Griffith-Jones (2003), and in the specific case of bank portfolio concentration away from the SMEs, acknowledged and to some extent addressed by the Basel Committee, in response to pressures from the German government.

To summarise the main points made so far, this study takes the view that (1) financial systems do not provide credit to different segments in an efficient way, due to market failures and information deficiencies. As a result, credit to the poor in particular is affected. An increase in information will not solve the problem. There is a need for institutional action. (2) C&S in the financial sector may help ensure stability of the system. But it does not contribute to an increase in credit provision to the poor. That is our main concern. In the specific case of Basel II, which is the focus of our study, the new rules may potentially have a negative effect on development finance, and even on stability.

3 Implementation of C&S, and Basel I and II

3.1 What steps has Brazil undertaken towards compliance with C&S?

The 12 standards that the Financial Stability Forum (FSF)[3] considers as key for a sound financial system can be grouped in three main areas: (1) macroeconomic policy and data transparency; (2) institutional and market infrastructure and (3) financial regulation and supervision. As said earlier, the focus of this study is on the Basel Capital Accords, or Basel I and II, which are standards under the area of financial regulation and supervision. We thus discuss Basel I and II in what follows. Information on implementation of the 12 standards more broadly can be found in Gottschalk and Sodré (2005).

3.2 The Basel Capital Accord – Basel I

The Basel Capital Accord (Basel I) is an agreed regulatory framework for capital adequacy that the Basel Committee for Banking Regulation and Supervision recommended for implementation in 1988. Its ultimate aim was to improve the soundness and stability of national banking systems and of the international financial system. This was to be achieved through the promotion of international convergence in the rules for setting minimum capital requirements for internationally active banks (Basel 1998). Of course, it was expected that national regulators would also consider such rules for other banks under their jurisdictions as well.

According to this framework, internationally active banks are expected to meet a total capital requirement of at least 8 per cent in relation to their risk-weighted assets. The required capital should have two tiers: core capital and supplementary capital. Assets (and off-balance sheet exposures) are assigned weights according to their relative riskiness, ranging from 0 per cent to 100 per cent (applied over the 8 per cent of capital). The framework was initially designed to address credit risk. In the subsequent 10 years, it was amended to include other types of risk, including market risk and concentration risk. The risk weights for different categories of assets are displayed in Table 3.1.

3 The FSF was created soon after the East Asian crisis to identify systemic risk situations and regulatory gaps in the international financial system.

Table 3.1 Risk weights for different types of assets as defined by Basel I

Weight	Loans to/Investment in:
0%	• OECD central governments • Central governments that borrow in the national currency • Borrowers with OECD central governments' collaterals or guarantees
From 0% to 50% (at the discretion of national regulators)	• Domestic public sector entities outside the central government; borrowers with such entities' collaterals or guarantees
20%	• Multilateral development banks (MDBs); borrow ers with MDBs collaterals or guarantees • OECD banks and securities firms; borrowers with OECD banks and securities firms' collaterals or guarantees • Non-OECD banks with maturity of up to one year; borrowers with non-OECD banks' collaterals or guarantees, with maturity up to one year • Non-domestic OECD public sector entities out side the central government; borrowers with such entities' collaterals or guaranteesMultilateral development banks (MDBs); borrowers with MDBs collaterals or guarantees
50%	• Mortgage borrowers who inhabit the residential property or rent it.
100%	• Private sector • Non-OECD Banks with maturity of over one year • Non-OECD central governments (unless they borrow in the national currency) • Real estate • Capital instruments issued by other banks.

Source: Basel (1998).

3.2.1 The Adoption of Basel I in Brazil

Brazil adhered to Basel I in September 1994 through the Resolution 2099 of Brazil's Central Bank.[4] The resolution established that to appropriately address credit risk, Brazil's financial institutions had to meet a minimum level of capital of 8 per cent in relation to risk-weighted assets. Later in 1997 the 8 per cent limit was raised to 11 per cent,[5] thus higher than the 8 per cent recommended by the Basel Committee, a decision justified on the grounds that Brazil's financial institutions were subject to higher macroeconomic volatility and shocks than financial institutions based in the rich countries. In addition, the risk weights assigned to different categories of assets were slightly adapted – see Table A1, annex 1. The Central Bank established in addition capital requirements for market and other types of risks, following advice from the original Basel Capital Accord document and subsequent ones that addressed these other types of risks in greater detail.

The reason given for the adoption of Basel I in 1994 was that Brazil's domestic banks were becoming increasingly exposed to the international financial markets, and therefore there was a need to adjust regulation to this new reality. But, in retrospect, it can be said that Basel I in Brazil was part of a bigger package of banking reforms undertaken in the second half of the 1990s and early this century. We thus next examine the impact of Basel I in Brazil taking a broader picture, to include analysis of the banking reform package, which interacted with the changes in the regulatory framework for the banking system.

Two major instruments were set up to undertake a major cleaning and restructuring of the banking system: the Programme for the Restructuring and Strengthening of the Financial System (PROER), and the Programme of Incentives for the Reduction of State Level Public Sector in the Banking Activities (PROES).[6] The PROER provided credit lines and fiscal incentives to support organisational restructuring that resulted in mergers and acquisitions among private banks. The PROES provided credit lines so that public banks at the State Levels could be closed, privatised or transformed into public development agencies.[7, 8]

---

4 Resolution 2099, of 17 September 1994.

5 Specifically, in June 1997 the minimum capital level was raised to 10 per cent (Resolution 2399/1997) and later in November of the same year, to 11 per cent (Circular no. 2784/1997).

6 The PROER or *Programa de Estimulo a Reestruracao e ao Fortalecimento do Sistema Financeiro,* was set up in November 1995; and the PROES or *Programa de Incentivo a Reducao do Setor Publico Estadual na Atividade Bancaria,* in September 1996. Both PROER and PROES were modified on a number of occasions thereafter.

7 Andrezo and Lima (2002) provide a descriptive summary of these programmes, and how they evolved over time.

By the end of 1997, 48 banks of a total of 270 private banks (retail, investment) were restructured and ended up being incorporated by other financial institutions, or transferred to the Federal Government under the PROER (Andrezo and Lima 2002). The restructuring process continued until into this century, with new rounds of mergers and acquisitions. During the period, large retail banks with national coverage, such as Nacional, Bamerindus, Excel-Economico and Real were acquired by Unibanco, HSBC, Bilbao Vizcaya and ABN Amro Bank, respectively.

Under the PROES, nearly all banks at the State level were either closed, privatised, had their control transferred to the Central Government, or were transformed into government agencies. The Central Government provided through the PROES up to 100 per cent of the resources to support the restructuring, but only up to 50 per cent in those few cases in which banks remained under the State Government control, as was the case of the Banrisul and Nossa Caixa (see below).

The restructuring process led to a higher degree of banking concentration and foreign ownership. Total assets held by the 10 largest banks went up from 52 per cent in 1999 to 62 per cent in 2001 and 66 per cent in mid-2004 (see Table 4.4 in the next section). The share of the foreign banks in the system's total assets increased from 7.5 per cent in 1994 to 23 per cent in 1999 and then 22.5 per cent in 2001 (see Table 4.2, also in the next section).

Furthermore, Brazil also has the public federal banks, two of which are among the largest financial institutions in the country which, similarly to many private banks and public banks at the State level, were in poor financial shape. In response to that, these banks were also re-capitalised to be able to comply with the new capital requirements, although they were not privatised.

The Banco do Brasil – the largest bank in Brazil – was recapitalised in 1996, as part of a broader restructuring process that led to new management – and again in 2001, when only by then was the bank able to meet Basel I minimum capital requirements. Today, the bank has its capital adequacy levels at 15.6 per cent. The Caixa Economica, a public bank that is also very large and that operates in the housing, sewage and infrastructure segments, went through a similar restructuring process to that adopted for the Banco do Brasil. But the bank's pathway towards compliance was even steeper, as the insolvency levels of its portfolio and its capital and provisioning deficiencies were of considerable magnitude at the early stage of the process. The bank was finally brought in line with Basel I capital requirements in 2001.

---

8 The PROES also had a clear political purpose. It was motivated by the diagnosis that public banks constituted a source of monetary and fiscal profligacy. This was explained by the existence of political pressures from State Governments for their controlled banks to lend to them (despite the existence of legal restrictions for banks to lend to their controllers), and their subsequent inability to service the debt, which was in the end re-financed by the Central Government to protect the overall stability of the financial system.

Among the development banks, the Banco do Nordeste do Brasil (BNB) was also recapitalised in 2001, which helped the bank increase its capital ratio to 16.2 per cent in the same year, and to 22.6 per cent in 2003. In 2002, the Banco da Amazonia (BASA) was in turn recapitalised, reaching the capital ratio of 52 per cent in mid-2004. The two major banks at the State levels that remained under control of the State Governments despite the PROES – Banrisul and Nossa Caixa, Nosso Banco – experienced a similar adjustment process. Banrisul (controlled by the State of Rio Grande do Sul) and Nossa Caixa, Nosso Banco (controlled by the São Paulo State) were cleaned and recapitalised, with 50 per cent of the resources coming from the State Governments, and 50 per cent from the Central Government. As a result, Banrisul reached a capital ratio of 19 per cent in 2002 (although that declined to 11 per cent thereafter as a result of rapid credit expansion) and Nossa Caixa a ratio of 25 per cent.

The private banks (national and foreign) in turn, also adjusted their capital levels to meet the Basel I requirements. This, together with the recapitalisation of those parts of the system that were in poor shape at the beginning of the process, led to a gradual increase in the system's capital level as a whole, reaching the level of 18 per cent in December 2003.

The country's compliance with Basel I and the broader restructuring process have altered dramatically the regulatory and financial system landscapes in Brazil. Each of these elements was part of an agenda of reforms that contributed significantly to the improved solidity of the financial system. That is a view broadly shared in Brazil, from top regulators to private and public bank representatives, and financial consultants.

The positive assessment is tempered by some sectors of the banking community in Brazil, particularly in regard to the Basel rules. Whilst recognising concrete benefits stemming from Basel I, such as the development of a credit risk assessment culture, some bankers from the public sector warn that the specific Basel rule on capital requirement is likely to affect public institutions' lending capacity. In the specific case of development banks, some argue that these banks should not be subject to the Basel capital requirements, since their liability structure is based on compulsory savings, not bank deposits, and that compliance with Basel is therefore not only unnecessary but counter-productive. Its implementation has the (admittedly unintended) effect of restricting these banks' capacity to support financing for developmental projects, which are at the heart of their mission. For this reason, in their view the homogeneous treatment given across private and public banks that differ in their liability structures and purposes should be reviewed.

But how have the implementation of Basel I, and the reforms more broadly, affected the levels of credit in the country?

Figure 4.1 in the next section shows that total credit as a proportion of the country's GDP declined gradually between 1994 and early this century. However, the majority view held in Brazil is that Basel I did not affect the total

level of the country's credit, or even credit to the rural sectors, the micro-enterprises or SMEs. The reason provided is that historically, credit to the private sector has been very limited in Brazil – at around 25 per cent – and that other factors explain better why this is so. These include high levels of public financing requirements, which makes government bonds the most important asset held by banks; the country's macroeconomic conditions characterised by high levels of interest rates and spreads (which did not come down with the entry of foreign banks in the system), high insolvency levels among private borrowers, the existence of government taxes (what Brazilians call the 'fiscal wedge'), high levels of deposit rates with the Central Bank, and bankruptcy law and a judiciary system that are tilted towards the interests of the debtors.

This study contests this view. Although it accepts that a number of factors explain why credit has historically been so low in Brazil, the fact is that it has declined even further since 1994, and Basel I seems to have played an important role in it. An evidence of this is that the share of credit in banks' total assets declined sharply between 1994 and 2004. This evidence is consistent with recent simulations run by Barrel and Gottschalk (2005) using a macro-econometric model for Brazil, which shows that an increase in banks' minimum capital requirements brings about a fall in banks' credit to the private sector, and an increase in the levels of government bonds held by banks. The shift in portfolio assets composition happens because whilst credit to the private sector has risk weight of 100 per cent for capital requirement purposes under Basel rules, government bonds have a 0 per cent weight – that is, these assets are risk-free. One might argue that the shift in banks' portfolio towards government bonds was due to high interest rates. But a similar shift in banks' portfolio took place in India following the adoption of Basel I in that country, under very different macroeconomic circumstances.

There is thus strong evidence suggesting that credit was indeed affected by the Basel capital rules. If credit was not so more affected, this was due to the fact that efforts towards meeting the minimum capital requirements took place mainly through banks' re-capitalisation, as indicated earlier, thereby reducing the need for credit cuts or cuts in the riskier types of credit.

As regards credit allocation, it is difficult to judge what happened to credit to SMEs or the poor, due to lack of information. But for rural credit information is available. It shows that rural credit patterns are strongly determined by directed credit schemes, which has historically been a key government policy instrument in support of the rural sector. This policy instrument clearly has countervailed any negative impacts Basel I may have had on rural credit.

3.3 The New Basel Capital Accord – Basel II

The main purpose of the New Basel Capital Accord approved in June 2004 is to further strengthen the soundness and stability of the international banking system, through encouraging banks to improve their risk management practices. To the extent that various internationally active banks have been adopting

internal models to assess different types of risks, the new accord's intent is to align the rules that determine capital allocation with what has been already practised in the markets.

The new framework has three mutually reinforcing pillars: (1) the minimum capital requirement, (2) the supervisory review and (3) market discipline. Pillars 2 and 3 relate closely to the Basel Committee's Core Principles for Effective Banking Supervision (BCP). But in this new context in which new risk management systems are encouraged for adoption, emphasis is put on supervising the quality of banks' new systems for risk assessment, and on disclosure of information on risk management practices, and on different types of risk exposures, along with disclosure of other types of information, such as banks' financial performance and financial position (Basel 2004).

But the main novelty and challenges for banks and regulators worldwide concern the new rules under Pillar 1 for capital requirements. The minimum capital adequacy level at 8 per cent recommended by Basel I is maintained, but three different approaches are suggested for determining the risk for different types of assets: the standardised approach, the foundation internal risk based (IRB) approach and the advanced IRB approach. Under the standardised approach, different risk levels can be assigned to different categories of assets, and the approach allows for external rating agencies to determine risk levels. The basic and advanced IRB approaches differ from the standardised approach in that they require the use of internal modeling techniques to measure risk. The difference between the latter two approaches is that under the foundation IRB approach banks can use their own models to determine default risk, but the parameters for loss given default is furnished by the regulatory authorities. In the case of the advanced IRB approach, banks are allowed to determine through their modeling techniques and database both default risk and the loss given default.

In addition, the new accord requires the allocation of capital for operational risk (in addition to credit, market risks, international exposure and other risks), and proposes three methods for measuring this type of risk: the basic indicator method, the standard indicator method, and the advanced measurement method.

The new framework has been designed for adoption by the G-10, and the Basel committee expects that these countries will be ready to implement the framework by the beginning of 2007. At the same time, the Basel Committee recognises that many non-G-10 countries worldwide may wish to adapt the new framework to their own national realities and circumstances, and to have their own timetable for adopting the new rules.[9] The Committee goes further

9 In this regard, the Basel Committee set up a Working Group in 2003 composed of representatives from mainly non-G-10 countries, including Brazil, to assess Basel II and provide recommendations on how supervisors might want to promote changes towards the new framework (Basel 2004).

to say that national regulators should aim to ensure the regulatory systems in their countries meet certain pre-conditions before attempting to implement the new framework in its entirety. They specifically recommend a sequencing approach, in which national regulators should aim for strengthening the country's regulatory infrastructure through the implementation of the Pillars 2 and 3, which deal with supervisory systems and market discipline, as just mentioned; only when these Pillars are firmly in place, should they focus on Pillar 1. This suggested approach reflects a main concern that many countries face limited resource capacity (human, financial) to implement Basel II, and that efforts to adopt the Pillar 1 may have the undesirable effect of diverting resources needed to ensure a satisfactory level of compliance with the BCP, many elements of which are embodied in the Pillars 2 and 3.

The new framework was approved after several rounds of consultations and debates that involved numerous stakeholders such as financial market participants, senior policymakers (national, international), national regulators and academics. In this consultative process, in addition to capacity limitation, a number of other issues were raised in relation to the proposed framework. For the purpose of this study, we highlight the following:

1 inequity leading to banking concentration;

2 loan portfolio concentration;

3 and pro-cyclicality.

1 Inequity leading to banking concentration

The inequity issue had been raised before by the Basel Committee when Basel I was created. Their concern was that if Basel I did not ensure a minimum degree of homogeneity of rules across different jurisdictions, this could grant competitive advantage to internationally active banks based in certain jurisdictions against banks based in others. The point was that if rules were applied differently across different jurisdictions, some banks would end up facing higher capital requirements than others. There was the further risk that these differences could be magnified by specific tax, accounting and other rules across jurisdictions.

Basel II provides a menu of options for calculating capital charges, and this can also cause the inequity problem mentioned above, of banks working with different levels of capital requirements. But in this case that would happen not only among banks across countries but also within countries. For example, in a same jurisdiction there could be banks adopting the IRB approach along with others adopting the standardised approach. But those banks adopting the IRB approach would be at advantage in relation to the others. This is because the IRB approach is likely to result in lower levels of capital requirements. The larger and more sophisticated banks are more likely to adopt the IRB approach and therefore to benefit from it, in detriment to smaller banks, which are more

likely to adopt the standardised approach. This type of inequity could, in turn, lead to banking concentration favouring the bigger banks, and in the case of many developing countries, it could favour the foreign banks.

2 Loan portfolio concentration

The use of risk measurement techniques to determine the amount of capital to be allocated for different types of assets is likely to result in both more expensive and rationed credit to borrowers perceived as of higher risk, and more and cheaper credit to borrowers perceived as of lower risk. For reasons such as information asymmetry, small borrowers such as SMEs are likely to be judged as of higher risk than the larger ones, such as large companies. This can cause a concentration in banks' loan portfolio away from small borrowers and towards the larger companies. Moreover, portfolio concentration implies that risk is being concentrated thereby making financial institutions more vulnerable to shocks and unexpected changing circumstances. This goes against the intended objective of regulatory measures, which is to reduce risks and vulnerabilities to which banks are normally exposed.

3 Pro-cyclicality

The use of risk-sensitive models under the IRB approach is bound to result in these models detecting an increase in the probability of default during economic downturns. As a consequence, the assets of a portfolio will be downgraded – what is called migration – which in turn will lead to higher capital charges. Recent empirical evidence supports the claim that the use of the IRB approach to measure risk may have the effect of a higher variation in the capital charge over the business cycle, as compared to the use of Basel I type of rules for measuring risk (see Goodhart and Segoviano 2005). This in itself may lead to both increased cost and reduced quantity of credit. Furthermore, the fact that it is harder to raise capital during economic downturns may reinforce the tendency in credit reduction, ultimately leading to a credit crunch and a deepening of the economic downturn, with further impacts on banks' portfolios.

A reason why the measured risk by these models tends to be so much time-variant is that even when they are forward-looking, their time horizons often are limited to one year (see Borio *et al.* 2003). These models therefore result in assigning borrowers ratings in light of their current (or over a limited time-horizon) status. That is what is called the 'point-in-time' approach. But if models could instead look 'through-the-cycle', so as to reduce or eliminate variations in the ratings caused by changing conditions during the cycle, then their pro-cyclicality effects could be avoided or at least significantly reduced.

An additional problem is that Basel II, by encouraging different banks to use similar models – VAR models – could exacerbate pro-cyclicality even further, as banks would behave and react in similar ways to the same events (Persaud

2000; Danielsson *et al.* 2001). In times of financial crises, their effects could be magnified throughout the system.[10]

The potential problems of inequity (i.e. banking concentration) and portfolio concentration show that regulatory measures are not neutral, that they can have an important impact on competitive and equity issues. Moreover, they can exacerbate pro-cyclicality of bank credit and thereby contribute to larger swings in the business cycle. The latter problem in particular should be a concern for regulators, as it also has a bearing on the stability of the financial system. Indeed, accentuated macroeconomic volatility is a major factor underlying banking crises, due to sharp variations in key prices, such as exchange and interest rates, and therefore in banks' balance sheets.

In what follows we will provide an assessment of to what extent Brazil fulfils the pre-conditions the Basel Committee has indicated, and whether the country's banking regulators, and more broadly financial market participants and academics, are showing concern, and indicating solutions, to the problems we have just highlighted.

3.3.1 Does Brazil fulfil the pre-conditions as recommended by the Basel Committee?

Brazil's compliance with C&S in the area of banking supervision is in good shape, including supervisory and monitoring capacity. Moreover, a new loan classification system, a central risk information system and an internal control system have been introduced, which are steps that respond to the specific concerns of Pillars 2 and 3 with regard to supervisory processes and market discipline.[11] More broadly, the financial system has been strengthened as a result of the restructuring process. Today the system is financially solid and meets comfortably the capital adequacy levels as established by the Central Bank. All these factors combined – strengthened supervision and financial position of the banking system – provide a platform for Brazil's banking regulators to take steps towards implementing the Pillar 1 on capital requirements of the new capital accord.

In line with this broadly positive assessment, Brazil's regulators have established the procedures for implementing Basel II, with particular attention to Pillar 1.[12]

---

10 On this point, the *Financial Times* editorial of 22 February 2005 also calls attention to a survey of financial opinion conducted by the Centre for the Study of Financial Innovation (CSFI) in 54 countries, which shows that business respondents differentiate between 'banking risk', which is the focus of Basel II, and the safety of financial institutions, which can be threatened by systemic risk, which could increase as a result of the use of similar risk assessment models by banks.

11 The report *International Codes and Standards and Development Finance: A Case Study of Brazil,* prepared for DFID provides a detailed discussion on Brazil's compliance with C&S in the area of banking supervision – see Gottschalk and Sodré (2005).

At the same time, in recognition that it is important to adapt the new framework to Brazil's specific conditions, a phased approach, consisting of five steps, has been proposed. That is, the regulatory authorities established a chronogram that covers a period of 7 years – from 2005 to 2011 – for the full implementation of the New Accord. In addition, they established that those banks with significant weight in the domestic financial system and with international exposure will be permitted to adopt the foundation IRB approach (and the advanced IRB approach at the end of the transitional process as well), while the remaining banks will have to adopt the standardised approach. The standardised approach will not draw on external ratings for determining credit risk. It will consist of an upgrading of the current approach, with the incorporation of risk mitigation instruments. The same rules will be applied to national and foreign banks. Table 3.2 provides detailed information on the chronogram proposed for Basel II in Brazil.

Table 3.2 Basel II in Brazil – announced chronogram for implementation

Period	Measures/action
Until end of 2005	Review of capital requirements for credit risk under the standardised approach; new capital requirements for those market risks still not covered by current rules; impact studies regarding operational risk.
Until end of 2007	Eligibility criteria for adoption of the IRB approach for credit risk and internal models for market risk assessment; capital requirement for operational risk.
2008–2009	Validation of models for assessing market risk; chronogram for validating the use of the foundation IRB approach; initial validation of the IRB approach and criteria for the adoption of internal models for operational risk.
2009–2010	Validation of the advanced IRB approach for credit risk and chronogram for the advanced approach for operational risk.
2010–2011	Validation of internal models for operational risk.

Source: Brazil Central Bank's Communication No 12.746 of 8 December 2004.

The adoption of the phased approach for the transition from the current to the new framework (whose time span goes considerably beyond the deadline

12 See Brazil Central Bank's Communication No. 12.746 (8 December 2004).

established by the Basel Committee for the G-10), the limitation of the IRB approach to the larger and internationally exposed banks, and the non-use of external ratings under the standardised approach, are factors that together reveal an intention by regulators to be cautious. This in all probability reflects a view that Brazil's banks and the regulators themselves still need a considerable amount of time to become ready for the IRB approach.

The proposed approach is broadly consistent with what Brazil's top regulators had indicated during our interviews on what they would do. First, that only the larger banks – in the regulators' words, between 12 and 15 – would be permitted to adopt the IRB approach at some stage, thus following the US approach to Basel II. Second, that the standardised approach to be adopted by the majority of banks would be indigenised to suit better Brazil's needs. Third, that the basic indicator method whereby capital charge for operation risk should be calculated as a percentage (e.g. of 15 per cent) over the banks' gross revenues would be adopted – although as we can see the proposed approach indicates that this will be the case only during the first years, as a timetable exists for the adoption of internal models for measuring operational risk. Finally, all banks, public and private, and regardless of their liability structure or mission, would be subject to Basel II rules.

The phased approach that Brazil's regulators have proposed for adoption looks appropriate for a developing country where banks probably need time, resources and capacity building to be able to adopt Basel II in full. However, the proposed framework lacks any countervailing mechanisms or instruments to address any of the issues outlined above – of banking concentration, portfolio concentration away from SMEs and increased pro-cyclicality. All these issues have clear macroeconomic and systemic dimensions that are lacking appropriate acknowledgement by Brazil's regulators.

This begs the question of whether Brazil's regulators, in not addressing the three issues just mentioned, are not excessively focused on micro-prudential risks (e.g. the risk facing individual banks), but not paying sufficient attention to macro risks, such as shocks or large swings in the business cycle, which are common to the whole banking system (Borio *et al.* 2003). Macro risks can be exacerbated by a banking system that has concentrated portfolios and that uses risk models that accentuate credit pro-cyclicality.

3.3.2 Views of the private sector (and academics) and what steps they are taking

A large number of financial market participants were interviewed (both private and public).[13] The questions asked included: how are they preparing themselves for the new framework? Are they considering adopting the IRB approach?

13 Most interviews were conducted in July and August 2004.

What challenges will they face in the process? How do they think Basel II may affect the financial system? What will be the welfare impact?

The private sector sees the adoption of Basel II rules in Brazil as a positive development. It believes it will lead to a strengthened capacity by banks to assess and manage different types of risk and as a result contribute to the solidity of the banking system.

The largest banks are already taking steps to adopt the internal models to assess credit risk, and to measure operational risk. The three largest private banks – Bradesco, Itaú and Unibanco – have already established Directorships of Risk Management, charged with the developments of both credit and operational risk management models, and specifically in regard to credit risk, their expectation is to be able to adopt the advanced IRB approach. They expect that their credit risk models will be up and running until the end of 2006.

Like the larger banks, the medium-sized banks have expressed interest in adopting internal models for both credit and operational risk, but accepted that whether they will be able to use these models will depend on permission being granted by the regulatory and supervisory authorities.

Brazilian banks perceive as a major challenge how best to address operational risk – specifically how to quantify this kind of risk, and the necessary capital required to protect against it. Although a good deal of losses arising from operational risk is clearly identified by banks – losses associated with labour and civil litigation and frauds, a whole universe of unidentifiable losses still exists, making their measurement very difficult.

3.3.3 Views of the public banks and what steps they are taking

A good number of Brazilian banks still remain public despite the banking restructuring and banking privatisation in the past few years. These are mainly federal banks with large retail base and development banks, although a few state-level banks still exist (see section above). All of them are taking steps to be prepared for the new capital rules. Like the private banks, the largest retail public banks hold a favourable view of Basel II, and believe that these rules should be adopted in Brazil in its entirety to the benefit of the financial system. The new instruments of risk and managerial controls and increased transparency are seen as positive developments, among other reasons because they can contribute to reduced political influence on lending decisions and thereby to greater efficiency.

But a number of medium-sized and development banks hold a more cautious position. Whilst acknowledging certain benefits, such as the strengthening of a risk management culture, they point to the operational difficulties in implementing Basel II, the high costs involved especially for the smaller banks, the potential conflict between new supervisory control on managerial practices and the social purpose of certain lending programmes, and the impact of capital requirement for operational risks on the cost and level of credit. Moreover, they

acknowledge the fact that the new rules may constrain credit to the group of borrowers perceived as of higher risk, which typically are the small businesses.

There is therefore a much higher degree of heterogeneity of views among public banks than among private banks, and within the former group this reflects a divide along the lines of size and nature of the banking activity.

The largest retail bank in Brazil – Banco do Brasil (BB) – takes a favourable view about Basel II, and is seen as leading the process in developing internal risk assessment models both for credit and operational risk. As regards credit risk, they claim to be at a considerably advanced stage in developing a model and believe that this will be ready for use by 2007. They are also investing a considerable amount of resources in developing a VAR model to measure operational risk, and in preparing the database, which will have a 5-year period coverage by 2007.

Other banks are also taking steps to be prepared for Basel II. The public banks at the state level are improving the managerial practices of their credit portfolios, through upgrading their credit risk assessment models and pursuing modeling design for operational risk. They intend to adopt internal risk models in the future and are hoping to have them fully developed and tested by 2007. Other banks have only recently created risk departments, and therefore are running behind other banks in developing risk assessment models, particularly for operational risk, and in building the required database, admittedly a task of great complexity, especially for medium-sized and small banks, which face high fixed costs in relation to the scale of their operations.

The public federal banks other than the BB – Caixa Economica, Banco da Amazonia (BASA), Banco do Nordeste do Brasil (BNB), are also attempting to improve their risk assessment systems, and intend to adopt internal models for credit and operational risk assessment. Given their limited internal capacity, they are working on these areas with the assistance of external consultancies. But even with external help, they point to the difficulties they face in taking these steps. A particular difficulty relates to how to map and quantify operational risk, and especially how to disentangle operational risks from other types of risk, including credit risk. Some institutions also fear the risk of investing in the development of internal models for risk assessment, but not having them validated by the Central Bank.

Both groups of banks – federal and state-level ones – share a number of concerns. In addition to their difficulties in developing and putting in practice new risk assessment models, and the costs that these tasks involve, especially for the smaller banks, they raise a number of other points that need to be addressed.

First, they believe the use of internal risk models will imply less capital requirement, and that if they end up not adopting these models they will find themselves at disadvantage in relation to those banks adopting them, as it will imply allocating higher levels of capital and therefore higher costs. A recent study by Carneiro *et al.* (2004) based on simulations for Brazil, shows that the use of the

IRB approach by banks would, for the majority of banks, imply a reduction in capital requirements between 0 per cent and 40 per cent. For a few banks, the needs would be reduced even more, by up to 82 per cent. This indicates that the risk envisaged here, of a few banks gaining substantial competitive advantage through use of the IRB approach, is very real.

Second, banks are worried that the capital requirement for operational risk, by increasing the banks' total capital requirement, will lead to higher costs, which are likely to be reflected in more expensive credit. The larger banks might be permitted to adopt the standardised model at some point, which means measuring risk by type of business and thus requiring less capital. But the smaller banks will have little alternative but to adopt the basic indicator method (i.e. capital required corresponding to 15 per cent of banks' gross revenues) and therefore will face higher capital requirements, both in absolute terms and relative to other banks adopting a more advanced method. There are therefore two problems arising from the need to allocate capital for operational risk: (1) overall higher level of capital requirements with banks facing higher costs as a result,[14] and (2) the competitive effect affecting negatively those banks adopting the simplest approach.

Third, some of these banks (especially the retail ones at the state level) believe they have a relatively homogeneous portfolio of clients to which credit extension is in many cases consigned, which reduces the credit risk they face. Their current risk controls may not be among the most sophisticated ones, but are deemed as sufficient in light of their customer profile. However, to the extent they attempt to expand their client base to include clients with different and riskier profiles, they fear that the new risk control systems will inhibit this process from taking off. That is, the system will delimit the sorts of products offered by the bank and therefore affect its business activities. There would thus be a heightened conflict between different areas of the bank. This indicates that elements of Pillar 2, such as stricter supervisory controls and monitoring, are likely to restrain credit expansion policies. (In relation to Pillar 3, banks have pointed out that there is a need to clarify better what sort of information needs to be disclosed, and within that, to clearly separate strategic information and information that can be made available to the markets. The underlying concern is that excessive information disclosure might be harmful to banks and the system as a whole.)

Fourth, public banks have a social mission. In line with that, many of their lending programmes derive from Federal and State level social policies. But the New Basel rules are likely to exacerbate the tension between profit maximising and social objectives, as the latter should be expected to involve activities deemed as of higher risk. As it is put in a IADB report, '[p]ressures for prof-

14 It has been noted that banks adopting the IRB approach for credit risk could end up requiring less capital for this type of risk, thus offsetting the added capital for operational risk. But banks adopting the standardised approach would not be able to generate this balancing effect – see IADB (2005, chapter 16).

itability may induce public bank managers to deviate from their social mandate and mimic private banks in their credit allocation criteria' (IADB 2004: 144, footnote 8, based on De La Torre 2002). Moreover, the new rules may also constrain the ability of public banks to play a counter-cyclical role, when needed.[15]

A final point that relates closely to the previous one is that development banks, such as the BNDES, BASA, BNB and BDMG, believe they should be given a differentiated treatment. They recognise that the recent restructuring process involving cleaning and recapitalisation provided public banks with conditions to compete with private banks on an equal basis, but they firmly believe there is a need to recognise the specific features of development banks, such as their distinct liability structure and their development financing role. Accordingly, it would be important to make the C&S related rules more flexible to this group of banks. That could include a lower capital adequacy requirement, whose minimum level in Brazil is higher at 11 per cent compared with the 8 per cent determined by the Basel Committee for the G-10. The BNDES goes further to propose that the bank should not be subject to the New Accord, partly due to its liability structure based on compulsory savings, partly because its lending operations consist in large measure of passing resources on to other financial institutions (banks and development agencies) which are the ones that ultimately bear the risk.

The banks' views are that there is a lack of debate in the country on a number of important issues, such as the need for differentiated treatment across the banking system, and the impact of Basel II on the system and on credit provision in particular. There is a feeling that Brazil's regulators have missed the opportunity to raise these issues more forcefully in international fora and with the Basel Committee. There is a debate of some of these issues domestically within the Febraban, as well as at national and international fora, but this has been limited. It is therefore felt that more needs to be done.

Thus, the views between the private sector and public banks on the potential benefits but especially costs of Basel II diverge fairly significantly. This divergence reflects their differences in terms of size, capacity to adopt more advanced risk assessment approaches, and their nature and purpose. But a particular concern that emerges very strongly and that reflects public banks' social concerns is that credit can be affected by Basel II rules through a variety of mechanisms. Unfortunately, this aspect has received very little attention so far.

15 This point has been made mainly by academics. Moreover, an IADB study presents evidence that public banks in Latin America are less pro-cyclical than private banks in extending credit (IADB 2004: 23 and chapter 11).

4 C&S and trends in the financial system in Brazil

This section discusses in more detail some of the points raised or explored only to a limited extent in the third section: what impact has Basel I had on the structure of the financial system? Has it affected the levels of credit, and if so, to what sectors? To what extent have institutional factors helped counter-balance the negative effects of Basel I?

4.1 General trends and the current structure of the financial system

The financial system in Brazil has undergone major changes in the past two decades. Between 1988 and 1994 – that is, a period of just 6 years – the number of banks increased from 106 to 246. Since the mid-1990s, however, a steady decline in the number of banks has taken place, reaching the total of 164 banks in 2003 (see Table 4.1). Thus, in a space of just 15 years or so, two marked trends were observed: an upward one between 1988 and 1994, and a declining one between 1995 and 2003.

The increase in the number of banks in the late 1980s and early 1990s can be attributed to the government's decision undertaken in 1988 to allow financial non-banking institutions to become banks, and to permit commercial and investment banks to become universal banks.[16] The number of banks, which jumped from 106 to 179 between 1988 and 1989, and continued to increase steadily in the early 1990s, was a phenomenon that can in addition be explained by an environment of high inflation, which permitted banks to expand in size and numbers through a business strategy that combined low loan levels with high profits derived from the high inflation-related revenues.

But the upward trend was reversed from 1995 onwards. As seen earlier, the reversal in the trend has been the result of the banking restructuring process, driven by a government aiming to strengthen the banking sector through the recapitalisation, mergers and acquisitions, privatisation and the entry of foreign banks. An underlying component of this process was the government's adoption of prudential regulation determining minimum capital requirements for banks (Basel I).

The restructuring process undertaken from 1995 onwards changed the ownership structure of the banking system, with the number of public banks declining from 32 to 14 between 1995 and 2003, and of private national banks from 172 to 88. During the same period, the number of foreign banks increased from 38 to 62 (see Table 4.1).[17]

16 See Resolution 1.524 of 21 September 1988, from the Central Bank of Brazil. Also, as Troster (2004) observes, Brazil's 1988 Constitution reduced barriers to entry.

Table 4.1 Number of banks in Brazil 1988–2003

Selected years

Year	1988	1989	1990	1992	1994	1995	1998	2001	2003
Total	106	179	216	234	246	242	204	182	164
Public banks						32	22	15	14
Private national banks1						172	123	95	88
Foreign banks 2						38	59	72	62

Source: Central Bank of Brazil. (1) Includes national banks with foreign participation.
(2) Includes foreign banks' branches in Brazil.

Table 4.2 Participation of banks in the banking system's total assets 1995–2004

%

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Public banks	52.2	50.9	50.1	45.3	43.0	36.6	32.0	34.7	37.2	34.4
Private national banks 1	38.9	38.3	36.8	35.3	33.1	35.2	37.2	36.9	40.8	41.7
Foreign banks 2	8.7	10.5	12.8	18.4	23.2	27.4	29.9	27.4	20.7	22.4

Source: Central Bank of Brazil. (1) Includes national banks with foreign participation.
(2) Includes foreign banks' branches in Brazil.

The reduction in the number of public banks was reflected in a substantial fall in the share of their assets in the banking system's total assets, from 52 per cent in 1995 to 34 per cent in 2004. Despite the decline in their numbers, the percentage share of private national banks in the total assets of the banking system went up from 39 per cent to 42 per cent during the same period. Among foreign banks, their assets' share went up from 8.7 per cent to 22 per cent (see Table 4.2).[18]

17 For an analysis of the growing foreign ownership of Brazil's banking system, see Carvalho (2001).

18 In truth, the share of assets held by private banks went first down to 33 per cent in 1999, and then up to 42 per cent in 2004, while of foreign banks went up to 30 per cent in 2001, and down to 22 per cent in 2004. These inflexions were due to purchases of foreign banks by domestic ones, as the former started leaving the country due to fierce competition.

The sharp decline in the proportion of assets held by public banks reflected mainly a steep fall in the share of assets of the state-level banks, from 21.9 per cent in 1995 to 5.2 per cent in 2004. Of course, this was the result of the fact that nearly all such banks were either closed or privatised during the period, as discussed earlier. At the same time, the federal public bank Banco do Brasil, witnessed an increase in its percentage share from 13.9 per cent to 17.4 per cent, while the other large federal public bank, Caixa Economica, had its share declined from 16.4 per cent to 11.5 per cent (see Table 4.3).

Table 4.3 Participation of different categories of public banks in the banking system's total assets 1995–2004

%

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Public state-level banks	21.9	21.9	19.1	11.4	10.2	5.6	4.3	5.9	5.8	5.2
Banco do Brasil	13.9	12.5	14.4	17.4	15.8	15.6	16.8	17.1	18.4	17.4
Caixa Economica Federal	16.4	16.5	16.6	17.0	17.1	15.4	11.0	11.7	13.0	11.5

Source: Central Bank of Brazil.

The reduction in the total number of banks also led to a higher degree of banking concentration in the system. Between 1999 and mid-2004, the percentage of assets held by the largest 10 banks in the total assets of the financial system went up from 52 per cent to 66 per cent; when the largest 20 banks are considered, the percentage of assets went up from 62 per cent to 77 per cent (see Table 4.4).

Table 4.4 The largest banks in Brazil 2000–2004

% of total assets [1]

	1999	2000	2001	2002	2003	Jun/2004
Largest 10	52.0	59.8	62.1	65.5	67.6	66.1
Largest 20	61.7	74.6	75.3	77.2	76.9	76.8
Largest 50	Nd	83.8	85.1	84.7	82.9	83.0

Source: Central Bank of Brazil. (1) Excludes BNDES. Years 2003 and 2004 also exclude Volkswagen, BRDE, GM and CNH Capital. Excluding these latter banksfor the years up to 2002 alter the results only marginally. For the years 2001 and 2002, the 50th largest bank was assumed to hold the same value of assets as the 49th largest bank.

The trend in banking concentration is less clear when measured by credit operations. In national terms, the trend points to the opposite direction. For the largest 10 and 20 banks, their share in the total credit operations in the financial system declined slightly between 1999 and mid-2004. For the largest 50 banks, it declined more pronouncedly between 2000 and mid-2004 (see Table 4.5). These findings are similar to those obtained by Troster (2004) – concentration of assets and de-concentration of credit between 1999 and 2003, and between 1994 and 2003 as well, using the Herfindahl index to measure banking concentration.

Table 4.5 The largest banks in Brazil 2000–2004

% of total credit operations [1]

	1999	2000	2001	2002	2003	Jun/2004
Largest 10	67.4	65.9	61.3	63.2	65.1	66.0
Largest 20	77.8	78.5	75.4	75.1	73.6	74.6
Largest 50	Nd	85.6	84.2	82.2	77.3	78.7

Source: Central Bank of Brazil. (1) Excludes BNDES. Years 2003 and 2004 also exclude Volkswagen, BRDE, GM and CNH Capital. Excluding these latter banks for the years up to 2002 alter the results only marginally. For the years 2000–2002, the 50th largest bank was assumed to hold the same value of assets as the 49th largest bank.

The process of concentration in the past 10 years or so follows one of strong deconcentration, between 1980 and 1993 (see Rodriguez de Paula 1998).

In regional terms, a clear trend in credit concentration can be observed. For the north and north-east regions, which are the smallest regions in terms of bank deposits and credit operations, and the poorest ones in terms of income per capita levels, the decline in credit operations between 1997 and 2003 was from 1.9 per cent to 1.4 per cent and from 13.6 per cent to 6.2 per cent, respectively (see Table 4.6). For the Centre-West region, the decline was from 12.3 per cent to 8.7 per cent. By contrast, the south-east and south regions, the wealthiest ones in income per capita terms, witnessed an increase in credit operations in the period 1997–2003 from 59.4 per cent to 70.9 per cent and from 12.7 per cent to 12.8 per cent, respectively. Interestingly, regional concentration has not happened when measured by level of deposits, which increased for the north and centre-west regions, and declined only slightly for the north-east region (see also Table 4.6).

Thus, the restructuring of the banking system from 1995 onwards led to (1) a significant reduction in the number of banks operating in the country (2) a reduction in the public sector participation in the banking system (when measured by share of assets in total assets), (3) an increase in the participation of private domestic and especially foreign banks; and (4) a higher level of banking concentration, both in terms of asset holdings by the largest 10 and 20

banks, and in terms of regional credit distribution. As regards the latter, the concentration of credit away from the poorest regions and towards the richest ones was quite dramatic. The lack of concentration of credit by the largest banks might be explained by the sharp reduction in credit by the Caixa Economica Federal (which has figured among the largest 10 banks over the years), from 18.9 per cent in 2000 to 6.2 per cent in mid-2004. It is likely that, within private banks, credit concentration was the case.

Table 4.6 Participation in total banking deposits and credit operations, by regions 1997–2003 % total

Regions	1997		1999		2001		2003	
	Deposit	Credit operation	Deposit	Credit operation	Deposit	Credit operation	Deposit	Credit operation
North	1.2	1.9	1.5	1.5	1.4	1.2	1.3	1.4
Northeast	7.6	13.6	7.2	9.0	7.1	5.8	6.1	6.2
Southeast	71.3	59.4	69.5	64.2	67.2	72.2	65.9	70.9
South	10.0	12.7	10.6	12.6	10.2	11.2	10.0	12.8
Centre-West	9.9	12.3	11.2	12.8	14.2	9.6	16.7	8.7

Source: Central Bank of Brazil (www.bcb.gov.br)

4.4.1 Where does the financial system stand today?

In June 2004, the total assets of the financial system in Brazil were equivalent to 87 per cent of the country's GDP, a proportion that has not varied much in the last few years, but that was much higher than in 1995, when total assets reached a low of 48 per cent of the GDP (see Table 4.7). This means that, since the period of strong adjustment in the financial system in the early period of the Real plan, the banking system has expanded quite strongly.

Table 4.7 Total assets of the financial system as a proportion of the GDP

Year	%	Year	%
1989	116.7	2001	88.6
1993	148.8	2002	91.5
1994	71.1	2003	85.6
1995	47.6	2004 1	87.4
1997	44.6		

Source: Central Bank of Brazil, and de Paula (1998), Table 5, for the 1989–1997 period. (1) June 2004.

Of the total assets held by the banking system, 33.7 per cent were total credit operations. The other main components of total assets were cash and inter-bank loans at 14 per cent, bonds and stocks at 26 per cent, and other assets at 22 per cent (see Table 4.8).

Table 4.8 Components of total assets % total

	Jun 2002	Dec 2002	Jun 2003	Dec 2003	Jun 2004
Cash and inter-bank loans	9.8	13.8	11.4	14.7	13.6
Bonds and stocks	30.3	27.1	27.7	27.5	26.4
Credit operations	30.7	30.1	31.2	33.9	33.7
Permanent assets	6.4	5.3	5.1	4.9	4.8
Other assets	22.8	23.7	24.6	18.9	21.5

Source: Financial Stability Report, Central Bank of Brazil, various issues.

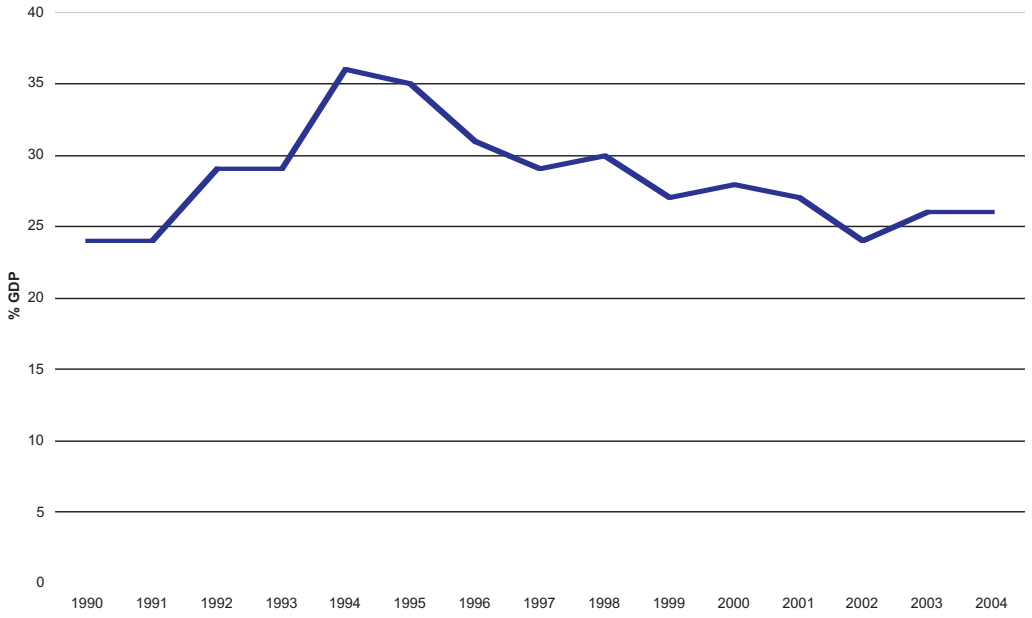
According to Soares (2002), before the implementation of the Real Plan in 1994, the proportion of credit in the banks' total asset was constant at around 44 per cent, declining sharply to 33 per cent in 1999. His explanation for this decline is the adoption of Basel I in 1994, which encouraged banks to move away from credits and towards acquiring government bonds, whose risk weight is 0 per cent thereby making it easier to meet the minimum capital requirements determined by the new regulatory framework (see below for a further discussion of this point). The decline in the share of credit in banks' total assets, in turn, can help explain why concentration trends measured in assets and credits diverged, as reported earlier.

Thus, since the adoption of the Real plan, one can observe a rapid expansion of the banking system's total assets as a proportion of the GDP, but within that a fall in the participation of credit in total assets. That takes us to the central question: what has happened with total credit as a proportion of the country's GDP since the Real plan?

4.2 The evolution of credit in Brazil since the adoption of Basel I and before

As of November 2003, total credit in Brazil as a proportion of GDP was at 26 per cent. This level is fairly low when compared with other countries around the world. But how does that compare with the long-term levels of credit in the country, and how has it evolved over time? Tracing this information back to 1990, one can see a similar level of credit. But between these two points in time, it is also possible to detect an upward increase in credit between 1990 and 1994, from 24 per cent to 36 per cent of the country's total GDP, and since then a gradual declining trend down to 26 per cent.

Figure 4.1 Credit in Brazil 1990–2004 as a proportion of total GDP %



Source: Central Bank of Brazil.

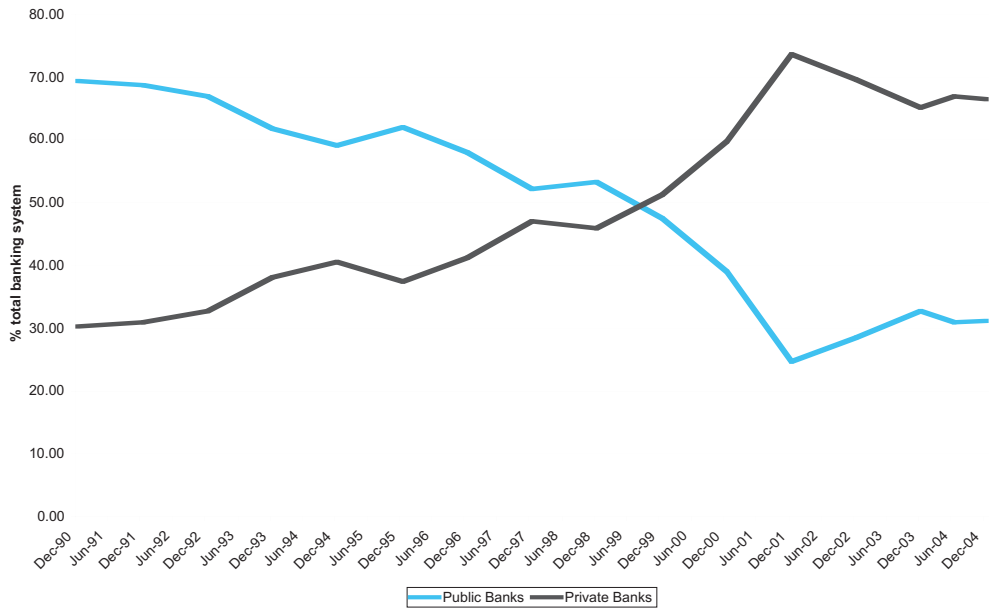
The decline in credit from 1994–1995 onwards reverses an upward trend until then. The reversal coincides with the adoption of the Real stabilisation plan, and is opposed to what analysts expected at the time. The expectations were that, with stabilisation, banks would lose a major revenue source derived from high inflation, and would thus expand credit as an alternative. Indeed, that is what happened in the first few months of the adoption of the Real plan. However, this process was aborted by the drastic monetary tightening adopted by the government in response of the Tequila crisis. Since then, the economy has been hit by a number of shocks – the Asian crisis, the Russian crisis, Brazil's devaluation of early 1999, and so on. In this context, credit really has never regained a path of sustained recovery.

Given that credit declined between 1994–95 and 2004, the next question is: was this decline uniform across the banking system?

Turning to the composition of credit between the private and the public sectors, one will see that the share of credit by the public banks, which were already on a downward trend in the early 1990s, continued to decline, and quite sharply, from 62 per cent in 1995 to 31 per cent in 2004. Of course, a good deal of this decline simply reflects the fact many public banks were either closed or privatised during the period. At the same time, the share of credit by the private banks increased steadily, from 38 per cent to 67 per cent during the period.

Figure 4.2 Public and private banks' share in total credit by the banking system 1990–2004

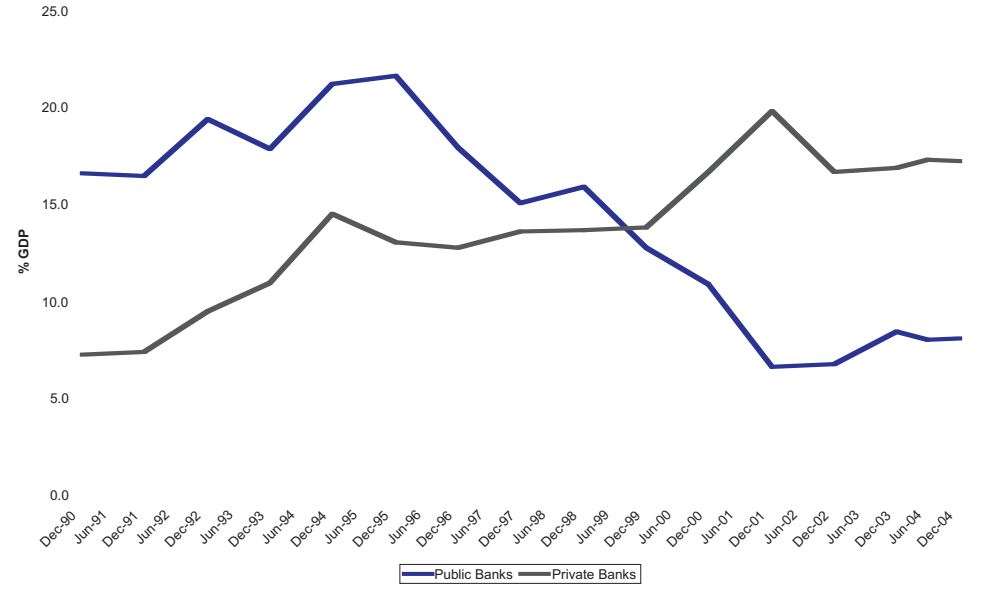
%



Source: Cosif, Central Bank of Brazil

In the context of declining credit levels in proportion of the GDP, credit granted by public banks clearly declined, and quite sharply. But what happened to credit granted by the private banks?

Figure 4.3 Credit by private and public banks as % GDP 1990–2004



Source: Cosif, Central Bank of Brazil

If we assume that the proportion of credit by the banking system remained more or less constant in relation to credit by the financial system as a whole, then we can cross information from Figures 4.1 and 4.2, and obtain information of credit by private and public banks as a proportion of total GDP. By doing so, we can see from Figure 4.3 that credit by private banks, which was on a steep increase until 1994, declined between 1994 and 1996 (from 14.6 per cent to 12.8 per cent), and then increased gradually until 2001,reaching nearly 20 per cent, to fall slightly again until 2004, when it was at 17.3 per cent. Overall, it went up between 1994 and 2004, although not very much.

As seen earlier, the post-1994 period was a very turbulent one in Brazil, not least because of the many shocks the economy was subject to. A key feature in this period has been the high real interest rates in a context of historically low inflation. This factor, together with a number of other constraints (see previous section) probably inhibited the expansion of credit in Brazil, which was expected to take place as a consequence of stabilisation. Moreover, it was a period of banking restructuring, in which the participation of the public banks in the banking system was drastically reduced. As a result, credit from this segment alone was drastically reduced.

These factors altogether seem sufficiently important to explain why credit did not expand from 1994 onwards. But, as Soares (2002) argues, not only did credit not expand, a pre-1994 expansion phase was interrupted in the post-1994 period. In his analysis, credit remained stable in real terms between 1994 and 1999, which is consistent with our data, which shows a decline when measured as a proportion to a growing GDP. In the face of these developments, what it seems is that a key factor in explaining why credit did not continue to expand as expected is the adoption of Basel I in September 1994, which was in itself very strict and turned even stricter in the subsequent years with additional regulatory measures adopted by the Central Bank of Brazil.

Basel I was stricter than what was recommended by the Basel Committee, as initially applied and later amended between 1994 and 1999. First, a minimum absolute level of capital (which was higher than the prevailing ones) had to be observed by banks to be able to operate. Second, the minimum capital requirements to risk-weighted assets were set at 11 per cent rather than 8 per cent. Third, swap operations and market risk had to be included in the calculus of minimum capital requirement as well. Fourth, the risk weight for tax credit, initially set at 20 per cent, went up to 300 per cent (Soares 2002).

A good way to see if Basel I had a major impact on credit in Brazil is through looking at the banks' credit to total assets ratio. Between 1994 and 1999 this ratio fell from 44 per cent to 33 per cent (Soares 2002), which was a critical period of banks' adjustment to the Basel rules. Moreover, looking at the broader period 1994–2004, Table 4.7 shows that total assets of the banking system increased from 71.1 per cent to 87.4 per cent of the country's total GDP, a huge increase that contrasts drastically with the decline in credit for the period, from 36 per cent to 26 per cent. This means that the credit to total

assets ratio fell from 50.6 per cent to 29.7 per cent (and from 73.5 per cent if the year 1995 is taken as a base).

Data on the Basel index of capital ratios are not available in aggregate terms for the 1990s. But for three of the largest five banks in Brazil – Banco do Brasil, Caixa Economica Federal and Unibanco – data are available both for 1995 – the first year of Basel in Brazil, and 2004. These are displayed in Table 4.9. The Table shows that an inverse relationship exists between the Basel index and the credit-total assets ratio for all the three banks.

Table 4.9 The Basel Index and the credit-total assets ratio – selected banks %

	Banco do Brasil		Caixa Economica Federal		Unibanco	
	Basel Index	Credit to assets ratio	Basel Index	Credit to assets ratio	Basel Index	Credit to assets ratio
Dec 1995	7.9	42.4	9.8	48.8	17.3	30.0
Sep 2004	15.6	31.9	18.4	18.7	15.4	34.9

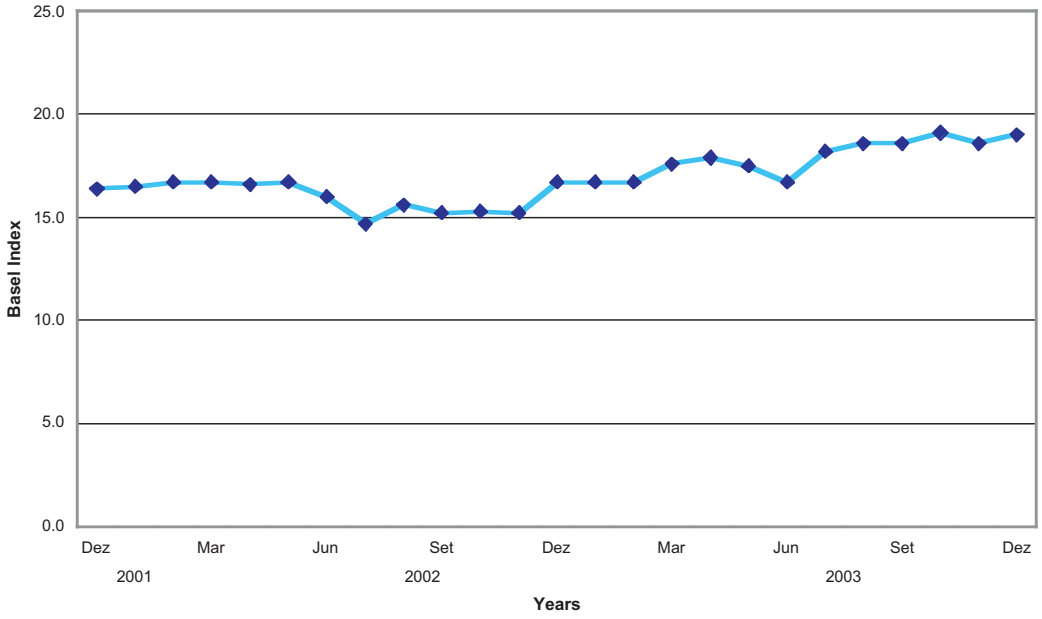
Source: Brazil's Central Bank.

High real interest rates from 1995 onwards may partly explain the change in banks' asset composition away from credit, and towards federal government bonds. But clearly, efforts to comply with Basel I have also certainly been an important factor in explaining the change in banks' portfolio composition, as it induced banks to acquire risk-free government bonds, for which no capital is necessary for meeting the minimum capital requirements.

The biggest effort of adjustment by banks to the Basel rules occurred mainly in the second half of the 1990s. For the largest five banks, the Basel Index went from 9.8 in December 1995 to 12.03 in 1999, and then 13.6 in 2001.

For the whole banking system, the index, available from December 2001 onwards, showed further increases between then and December 2003, from 16.4 to 19.0 – see Figure 4.4, which displays the trend in the Basel Index for the Brazilian banking system for this latter period, on a quarterly basis. But, unlike the previous period, the credit to total assets ratio for the banking system exhibited stability, remaining at around 30 per cent over the 2001–2003 period.

Figure 4.4 The Basel Index in Brazil Dec 2001–Dec 2003



Source: Central Bank of Brazil.

But were trends across banks uniform – that is, with portfolio composition remaining constant as capital requirements continued to go up, as the overall data suggests? To see if trends across banks were uniform or not regarding their portfolio composition over the later period, we tested for the correlation between the Basel Index and the credit-total assets ratio for the 50 largest banks in 2001 for the Dec-2001–Sep 2004 period, for which data are available on a quarterly basis for individual banks.

Changes did occur, and the direction of change across banks was rather mixed, which conforms with the aggregate pattern of credit-total asset ratio stability, as trends in opposite directions probably have cancelled each other. But can we draw a coherent story by grouping the individual banks in broad banking categories, and thus looking at trends across these different categories?

The answer is clearly positive. Among public banks, the correlation is positive for some, negative for others. Apparently, this was the case because some public banks succeeded in raising their capital requirements through government re-capitalisation. Among foreign banks, a mixed picture is also found; but most importantly, for the majority of private domestic banks, a negative correlation is found, which indicates that for this category of banks, further portfolio adjustments took place in response to their efforts to further increase their capital ratios. It would be interesting to extend the exercise to the totality of private banks, to see if a negative correlation indeed dominates. Moreover, further research involving a multi-variable econometric exercise would be desirable, to control for the effects of other factors affecting the banks' portfolio composition.

4.3 Credit allocation across sectors: what has been the impact on the SMEs and the poor?

In the context of overall credit decline between 1995 and 2004, how was total credit distributed across sectors? Which sectors increased their share in total credit, and which sectors lost access to credit?

Tables 4.10, 4.11 and 4.12 show respectively how total, private and public credit is distributed across different sectors of activities, and how distribution shares have evolved since 1994, when financial reforms started and Basel I was adopted.

Table 4.10 Total loans from the financial system – distribution by sectors [1]

as percent % of total

	Public sector	*Private sector*						
		Industry	**Housing**	**Rural**	**Commer-cial activities**	**Individuals**	**Other services**	**Total**
1994	15.2	22.4	21.2	9.4	11.4	8.3	12.1	84.8
1995	14.9	23.9	19.8	9.6	13.1	6.5	12.1	85.1
1996	17.9	23.9	19.0	7.5	11.2	8.9	11.6	82.1
1997	9.5	26.0	19.4	8.6	11.2	13.1	12.2	90.5
1998	7.6	26.2	19.6	9.0	9.2	12.6	15.7	92.4
1999	6.1	29.3	18.5	8.9	10.0	13.9	13.3	93.9
2000	3.9	26.8	17.5	8.5	9.9	19.0	14.4	96.1
2001	3.0	29.7	7.2	7.9	10.9	23.3	18.0	97.0
2002	3.6	30.6	6.4	9.2	10.5	21.6	18.2	96.4
2003	3.7	28.5	6.1	10.9	10.5	23.0	17.3	96.3
2004[2]	4.1	26.1	5.4	11.0	11.2	25.2	16.9	95.9

Source: Central Bank of Brazil. (1) December – balance end of period. (2) October 2004.

It can be seen from Table 4.10 that the share of total credit from the financial system to the public sector fell dramatically between 1994 and 2004 – from 15 per cent to 4 per cent, while the share of credit flowing to the private sector increased from 85 per cent to 96 per cent over the same period. The decline in the share of credit to the public sector, in the context of overall decline in credit as a percentage of the GDP, can be explained mainly by the reduction of public banks, which were the main lenders to the public sector, which constrained the ability of governments, especially at the sub-national levels, to borrow from the financial system. This happened along with new fiscal rules constraining the state-level governments capacity to borrow. The latter is evidenced by the fact that lending to the public sector by private banks also declined during the period – see Table 4.12. The decline is also reflecting the

fact that a good deal of public enterprises was privatised. The increase in the share of credit to the private sector benefited mostly individuals (e.g. consumer credit, others) and other services (telecommunications, transport, education and culture, press, informatics) with their shares in total credit going up from 8 per cent to 25 per cent and 12 per cent to 17 per cent, respectively. Other sectors whose shares in total credit increased were the industrial (which may be a statistical effect due to privatisation) and rural sectors. Credit to housing, which refers mainly to mortgage lending, fell sharply.

Table 4.11 Loans from the private financial system – distribution by sectors [1]

as percent % of total

	Public sector	*Private sector*						
		Industry	**Housing**	**Rural**	**Commer-cial activities**	**Individuals**	**Other services**	**Total**
1994	2.0	29.4	12.1	2.9	18.9	13.9	20.8	98.0
1995	3.0	33.4	10.2	2.7	21.9	9.8	19.1	97.0
1996	2.6	34.7	8.8	3.8	19.3	14.5	16.3	97.4
1997	1.8	33.1	7.1	4.5	17.5	20.5	15.6	98.2
1998	1.2	33.2	7.4	4.3	15.1	21.9	16.9	98.8
1999	0.9	34.0	6.4	3.8	15.6	21.0	18.3	99.1
2000	1.0	29.5	5.6	4.5	14.3	25.7	19.4	99.0
2001	0.9	28.9	4.3	4.8	13.2	27.7	20.2	99.1
2002	1.1	28.7	3.6	6.1	13.4	27.0	20.1	98.9
2003	0.8	27.6	3.4	6.7	13.6	29.8	18.1	99.2
2004[2]	1.2	25.9	2.8	7.4	14.3	31.8	16.7	98.8

Source: Central Bank of Brazil. (1) December – balance end of period. (2) October 2004.

These trends are broadly similar between private and public credit, with the big difference being that whilst the share of private credit to industry and other services declined, the share of public credit to these activities went up. But the latter may just be reflecting a statistical effect, as big state-owned companies that fall under these categories were privatised.

It is difficult to say whether the SMEs and the poor benefited or not from these trends. But it is possible to cautiously suggest that the increase in the share of credit to the rural sector and to individuals may have benefited small rural producers, and reached less wealthy individuals. At the same time, productive and commercial activities lost financing from the private banks, and this may have harmed mostly the SMEs. So, what could be said is that the redistribution of credit across sectors seems to have been in the form of a slight

shift from productive and commercial activities to consumer credit. Thus, a preliminary hypothesis is that, whilst Basel I together with broader financial sector reforms have affected the level of total credit negatively through requiring banks to raise capital to meet the Basel rules for capital requirements, the redistribution of credit across sectors may not have discriminated against the less favoured households, though it may have affected the SMEs negatively.

Table 4.12 Loans from the public financial system – distribution by sectors [1]

as percent % of total

	Public sector	*Private sector*						
		Industry	**Housing**	**Rural**	**Commercial activities**	**Individuals**	**Other services**	**Total**
1994	25.3	17.0	28.2	14.4	5.6	4.0	5.5	74.7
1995	24.6	16.3	27.6	15.1	6.1	3.9	6.4	75.4
1996	30.1	15.3	27.2	10.4	4.8	4.5	7.7	69.9
1997	16.7	19.4	31.0	12.5	5.3	6.1	9.0	83.3
1998	12.8	20.6	29.4	12.8	4.5	5.1	14.8	87.2
1999	11.1	24.7	30.3	13.9	4.5	7.1	8.5	88.9
2000	7.7	23.3	32.8	13.6	4.3	10.3	8.0	92.3
2001	6.9	31.2	12.6	13.6	6.7	15.0	14.1	93.1
2002	7.6	33.7	10.8	14.2	5.8	12.8	15.1	92.4
2003	7.8	29.6	10.1	17.1	6.0	13.1	16.3	92.2
2004[2]	8.8	26.6	9.5	16.6	6.5	14.9	17.2	91.2

Source: Central Bank of Brazil. (1) December – balance end of period. (2) October 2004.

4.4 The role of directed credit as a countervailing force

Whilst it is difficult to assert how new credit distribution patterns affected the SMEs and the poor, one clear fact is that the changing patterns closely follow what happened to directed credit in Brazil. This sort of credit accounts for a large part of total credit. In the 2000–2004 period, it varied between 36 per cent and 44 per cent; if directed credit to the housing sector is excluded, it stayed around 30 per cent.

As can be seen from Table 4.13, directed credit explains why total credit to the Hoing sector fell so dramatically between 2000 and 2004, and why rural credit expanded. Indeed, during the period, it contributed to nearly 90 per cent of the fall in the housing sector credit, and 100 per cent of the increase in rural credit. Also, the BNDES, which figures as the largest development bank in Brazil,

accounting for about 20 per cent of total directed credit in the country,[19] may well explain why credit from the public sector to the industrial sector expanded between 2000 and 2004, thus largely offsetting the decline in credit to the sector by private banks (see Tables 4.10–4.12).[20] For the purpose of this study whose focus is on SMEs and the poor, it is important to notice that the BNDEs traditionally lends to large projects and companies, not the SMEs (although resources it lends through other banks and development agencies may reach the SMEs).

Table 4.13 Directed credit as a proportion of total credit 2000–2004

%

	Housing	Rural	BNDES [1]	Other	Total	Total minus housing
Dec–2000	15.7	8.5	17.8	2.0	44.0	28.3
Dec–2001	6.4	7.9	19.7	1.6	35.6	29.2
Dec–2002	5.7	9.2	22.4	0.8	38.1	32.3
Dec–2003	5.6	11.0	22.2	1.0	39.8	34.2
Oct–2004	5.1	11.0	20.0	0.8	36.8	31.7

Source: Central Bank of Brazil.(1) Includes bo th direct resources and resources passed to other banks.

So, where credit may have benefited the SMEs and/or the poor, this was due to directed credit. For example, there is no directed credit in Brazil to the SMEs, which therefore may have lost (apart from directed credit to micro-businesses implemented in 2003, which may have reached small business, but mainly through credit to individuals); where the poor may have gained, for example small rural producers through the expansion of rural credit, this was due to increases in directed rural credit.

But has the increase in the share of rural credit been accompanied by more credit to small producers? It is hard to gauge this, due to lack of available data. But information on credit by size of credit, which bears some correlation with size of the rural producer, suggests that, at least for 2001–2003, no discernible

19 This includes both direct resources provided by the BNDEs and those resources the bank distributes via other banks. Direct resources account for 48 per cent of total resources managed by the bank in October 2004.

20 Credit by the BNDES accounted for 12.2 per cent of total credit in Brazil in December 2004. If to that we add credit by the other four major development banks – BNB, BASA, BRDE and BDMG – the proportion of credit provided by Brazil's development banks in total credit goes up to 13.8 per cent.

change took place. This is true both for total and free rural credit – see Table 4.14. The only noticeable change is a relative decline in credit to small producers through PRONAF (National Programme for Strengthening Family-Based Agriculture) – from 15 per cent of total rural credit in 1999 to 10 per cent in 2003.

Table 4.14 Total and free rural credit, by size of loans [1]

Credit as a percent % of total credit				
	I	**II**	**III**	**IV**
2001	40.9	21.3	7	30.8
2002	35.8	25.15	8.9	30.1
2003	42.7	15.8	11.2	30.3
Free credit as a percent % of total credit				
2001	2.6	0.8	0.3	0.3
2002	2.6	1.1	0.4	1.1
2003	3.1	0.7	0.4	1.1

Source: Central Bank of Brazil.(1) Category I, II, III and IV correspond respectively to the ranges 0 to 40.000 Reais; 40.000 to 150.000 Reais; 150.000 to 300.000 Reais; and above 300.000 Reais; for the year 2003, the value 40.000 is increased to 60.000.

The main message is that directed credit in Brazil is a powerful factor in determining credit patterns in the country, and may have had an important countervailing role to credit decline as a result of financial reforms and Basel I. Moreover, although the credit share by public banks (including development banks) has been drastically reduced, they still seemed to have a crucial role in credit provision for productive urban sectors and rural activities.

So, what it seems is that financial reforms and Basel I did not have a major impact on credit allocation in ways that harmed the poor or the SMEs – at least not in a major way – due the maintenance of two key institutional factors that have historically strongly featured in Brazil's financial system: large public and development banks, and directed credit. Whilst the presence of public banks in Brazil has been downscaled, with no plans to change it, directed credit remains as seen by the government as an important instrument for credit promotion and allocation towards the less favoured segments.

This is so much the case that the Brazilian government has recently undertaken a number of initiatives in support of micro-business and the poor in Brazil through the creation of a number of mechanisms that include directed credit to individuals and micro-business.[21] However, scepticism has been raised as to whether private banks will really use this type of directed credit as a starting point to penetrate the SMEs market, or whether they would simply deposit the resources with the Central Bank. The question thus still remains of how to

make mainstream lending more widespread across income groups, and how to ensure that the new regulatory framework for capital adequacy does not work as a limiting force for the expansion of credit in Brazil, especially to the SMEs and the poor.

5 Conclusions and policy recommendations

The Brazilian government is taking a number of initiatives to provide banking services to larger segments of the country's population, and credit to micro-business. These initiatives are welcome in light of the reduced levels of credit in Brazil, and to counteract possible negative effects on credit expansion of the new capital accord. But we hold the view that the new regulatory framework for the banking system should be better aligned with the governments' policy aims.

Our assessment is that this is not the case at present. The New Basel rules, as Brazil's regulators intend to apply in the country, may have at least three effects that can affect credit to the SMEs and the poor negatively: further banking concentration, banking portfolio concentration away from the SMEs, and increased credit pro-cyclicality. Our research shows that these possible effects are not part of the concern of Brazilian regulators. The banking community, in its turn, is too busy in its efforts to be prepared for the new rules when these come into effect in early 2007, and therefore is not addressing these issues either.

But it is important to do so. Looking at the current capital rules (or Basel I) as adopted in Brazil, it was possible to see that these rules have contributed to the banking concentration observed in the late 1990s and early this century, to a sharp decline in the share of credit in banks' portfolio of assets – and related to that, to a decline in credit as a proportion of total GDP in the ten years since the mid-1990s. The India study undertaken in parallel (IDS Working Paper) shows that, under different economic circumstances, there too credit share in banks' total assets has declined as a result of Basel I; it moreover shows that credit to small enterprises declined sharply relative to total credit.

The effects of Basel I both in Brazil and India thus clearly demonstrate that changes in the regulatory framework for banks can have important effects on the structure of the banking system and on credit patterns. It is therefore important to avoid a repeat of the negative consequences that often

21 The other initiatives include the creation of cooperatives to benefit its associates, mainly in the rural sector, and the so-called *correspondente bancario*, which is aimed at providing financial services in regions and locations that do not have access to such services. For a detailed discussion of these initiatives, see Gottschalk and Sodré (2005).

accompany the introduction of new banking rules. Particularly at a time international efforts are being made to reduce poverty worldwide, it is important to raise awareness – and encourage the debate on the possible negative implications of the new capital rules – or Basel II – which will come into effect in early 2007, for the SMEs and the poor. The debate could help create a consensus around measures that could be implemented to address the shortcomings of the new rules; in particular, measures that can help remove or at least reduce the potential bias of such rules against credit, especially to the neediest segments.

Since 1999–2000, when discussions on the initial proposals for a new capital rules started, a number of ideas have emerged on how to mitigate the possible negative impacts of the new rules on credit patterns and pro-cyclicality. For example, a menu of options exist on how to reduce the pro-cyclicality of credit, which developing countries in particular should worry about, due to the fact that economic volatility in these countries are higher than in the OECD countries. Of course, there are some technical challenges associated with each proposal, which require careful examination. Nonetheless, the options exist and are feasible. What really seems to be missing is lack of political initiative, which can be partly explained by a lack of debate on these issues, as this study on Brazil suggests.

In what follows, we refer to a few possible measures for adoption put forward and discussed in international academic and policy circles, which could address the issues raised in this study.

- To address inequity arising from the use of the IRB approach by the large banks and the standardised approach by the remaining banks, an equalising factor could be applied over the banks adopting the IRB approach, so as to level up their capital requirements. That would address inequity issues, and could have the additional benefit of discouraging banks from changing their portfolios away from smaller borrowers, typically the ones deemed as riskier. That would be moreover consistent with the Basel Committee's primary intention to address relative rather than absolute risk.

- To address portfolio concentration, in addition to the application of a factor as proposed above, regulators could work on a formula to smooth the risk curve for SMEs, as the Basel Committee has done in the past between the Consultative Papers CP2 and CP3. As said earlier, this could be done in a number of ways, but would it would be up to the country's regulators to choose which method might be the most appropriate one; the decision could be based on technical studies to assess the impacts of alternative measures on credit to the SMEs.

- To deal with pro-cyclicality, the smoothing of the risk curve proposed above would be beneficial for that purpose. In addition, other counter-cyclical measures could be adopted, such as to encourage the use by banks of different models (Persaud 2000), and the use of models that 'look through the cycle', as opposed to the most utilised models that look at one point of the cycle. A further measure would be to reward portfolio

diversification. The reason for the latter is that, in addition to reducing risk for a given level of return (which is why diversified portfolios are desirable in the first place), portfolio diversification could contribute to reduced cred it pro-cyclicality (IADB 2004; Griffith-Jones, Spratt and Segoviano 2004). This is because a negative event would affect only that part of a bank's portfolio that share similar characteristics and therefore is vulnerable to the same types of shocks, not the entire portfolio.

The measures proposed thus far address the three issues this paper has highlighted as key ones that are receiving little attention in Brazil. In addition to these, a number of other issues constitute a major challenge for Brazil's regulatory authorities.

For example, will the regulators have the capacity to validate models and monitor them adequately within the proposed time frame? Is the timetable proposed by Brazil's regulators long enough? Should regulators not need more time to be able to adequately validate and monitor risk assessment systems adopted by banks, especially those that will opt for the most advanced models? Should the proposal for adopting internal models for measuring operational risk not be eliminated, given the sheer complexity of measuring operational risk and the difficulties regulators would face to monitor their use? And in the case it is adopted, could a factor not be equally employed to avoid that some banks end up with lower capital requirements for operational risk than others?

Also, it would be important that the regulatory authorities could take account of the fact that the risk management practices should be effective, but not excessively intrusive to the point of inhibiting lending activities and programmes that have a social purpose.

This study on Brazil thus shows that implementation of Basel rules poses a number of challenges to national banking regulators, and to the country at large. But what lessons can we learn from the Brazilian study for other developing countries?

The Brazil study shows that the Basel rules are not neutral, and this should be borne in mind when a country is considering adopting such rules. In this regard, it is important that measures being considered for adoption are carefully examined, and that their implications for development finance are identified and properly addressed. But the Brazil study also shows that, had the country not had its development finance architecture in place, the impacts of Basel I on development finance would have been far bigger. For example, although Basel I did affect credit in Brazil, there is no evidence that the credit to the SMEs, to rural producers or to the urban poor was negatively affected, at least in a major way. A main reason for this outcome is that credit patterns during the period under Basel I have been influenced by directed credit policy, which in a number of cases were intended to protect the less favoured segments.

From this, the lesson we can draw for other developing countries is that institutions that support development finance are key and should therefore be preserved, as there is nothing indicating that an entirely market-based banking

system will serve the financing needs of the small businesses and the poor. This is even more so under Basel I and especially Basel II, as the latter has a clear bias against perceived higher risk borrowers, which usually are the small businesses and the poor. But many poor countries do not even have development finance institutions, in a number of cases because they have reformed their banking systems and in the process dismantled such institutions.

The lack of such institutions makes prudence towards the adoption of Basel rules even more necessary for these countries. One should not forget that capital markets in poor countries are still very small and that the banking sector is still the major source of finance to the economy. Of course, one may contend that microfinance in poor countries managed by foreign NGOs and other organisations have had an important role in providing resources to the small businesses and the poor. However, mainstream finance should also be able to reach these segments, and to finance projects (large or otherwise) that can benefit them indirectly as well. It is thus important that the system is regulated in ways that it can serve both the economy and the most needy as well.

Annex 1

Table A1 Basel I in Brazil: risk weights for different categories of assets

Weight	Loans to/investment in:
0%	• Brazil Central Government's bonds • Foreign currencies deposited with the Central Bank • Compulsory deposits with the Central Bank
20%	• Bank deposits in other banks • Gold • Deposits and credits in foreign currencies • Tax related credits (then raised to 300% in August 1999, through Circular no. 2916).
50%	• Government bonds outside the Central Government • Inter-bank deposits with own resources • Foreign currencies abroad • Mortgages
100%	• Private bonds with own resources • Investments in variable income assets • Investments in commodities • Operations linked to stock exchanges and future markets • Exchange operations • Diverse credits

Source: Annex IV, Resolution No. 2.099 of 17 August 1994. Available at: www.bcb.gov.br

References

Andrezzo, A.F. and Lima, I.S. (2002) *Mercado Financeiro: Aspectos Históricos e Conceituais,* 2nd edition, São Paulo: Thompson Learning

Barrel, R. and Gottschalk, S. (2005) 'The Impacts of Capital Adequacy Requirements on Emerging Markets: The Cases of Brazil and Mexico', National Institute of Economic and Social Research (NIESR), unpublished, June, London

Basel (2004) *Implementation of Basel II: Practical Considerations,* Basel Committee on Banking Supervision, July

—— (1998) *International Convergence of Capital Measurement and Capital Standards (July 1988, updated to April 1998),* Basel Committee on Banking Supervision, April

—— (1997) *Core Principles for Effective Banking Supervision,* Basel Committee on Banking Supervision, September

Borio, C., Furfine, C. and Lowe, P. (2003) *Procyclicality of the Financial System and Financial Stability: Issues and Policy Options,* BIS Papers No 1

Carneiro, F., Vivan, G. and Krause, K. (2004) 'Novo Acordo da Basiléia: Estudo de Caso para o Contexto Brasileiro', Resenha BM& F 63, São Paulo

Carvalho, F.J.C. (2001) *The Recent Expansion of Foreign Banks in Brazil: First Results,* University of Oxford Centre for Brazilian Studies Working Paper CBS-18-01

Danielsson, J., Embrechts, P., Goodhart, C., Keating, C., Muennich, F., Renault, O. and Shin, H.S. (2001) *An Academic Response to Basel II,* Special Paper 130, London: LSE Financial Markets Group

de la Torre, A. (2002) 'Reforming Development Banks: A Framework', PowerPoint presentation given at the World Bank Staff Workshop on Reforming Public Sector Banks, 10 December, Washington, DC

de Paula, L.F.R. (1998) 'Tamanho, Dimensao e Concentracao do Sistema Bancário no Contexto de Alta e Baixa Inflacao no Brasil', *Nova Economia* 8.1, July/December: 87–116

Goodhart, C. and Segoviano, M. (2005) 'Basel and Procyclicality: A Comparison of the Standardised and IRB Approaches to an Improved Credit Risk Method', unpublished, London: London School of Economics

Gottschalk, R. and Sodré, M.C. (2005) *International Codes and Standards and Development Finance: A Case Study of Brazil,* Final Report for the project 'Codes and Standards of International Best Practice: Assessing Their Impact on Development Finance', September, Brighton: IDS

Griffith-Jones, S. (2003) 'How to Prevent the New Basel Capital Accord Harming Developing Countries', paper presented at the IMF-World Bank Annual Meetings at Dubai, September

Griffith-Jones, S., Spratt, S. and Segoviano, M. (2004) 'CAD 3 and Developing Countries: The Potential Impact of Diversification Effects on International Lending Patterns and Pro-cyclicality', unpublished, IDS

IADB (2005) *Unlocking Credit: The Quest for Deep and Stable Banking Lending, Economic and Social Progress in Latin America and The Caribbean,* 2005 Report, Washington, DC: Banco Inter-Americano de Desenvolvimento

—— (2004) *Unlocking Credit: The Quest for Deep and Stable Banking Lending,* 'Economic and Social Progress in Latin America and the Caribbean', report, Washington, DC: Inter-American Development Bank

Persaud, A. (2000) 'The Disturbing Interaction Between the Madness of Crowds and the Risk Management of Banks', paper presented at the Commonwealth Secretariat conference on 'Developing Countries and Global Financial Architecture', London, 22–23 June

Rodriguez de Paula, L.F. (1998) *Tamanho, Dimensao e Concentracao do Sistema Bancário no Contexto de Alta e Baixa Inflacao no Brasil,* Revista Nova Economia 8.1 Jul–Dec: 87–116

Stiglitz, J. (1993) *The Role of the State in Financial Markets,* Proceedings of the World Bank Annual Conference on Development Economics: 19–52

Stiglitz, J. and Weiss, A. (1981) 'Credit Rationing in Markets with Imperfect Information', *The American Economic Review* 71.3, June: 393–410

Soares, R.P. (2002) 'Evolução do Crédito de 1994 a 1999: Uma Explicação', *Planejamento e Políticas Públicas* 25, Jun/Dec: 43–87

Troster, R.L. (2004) 'Concentracao Bancária', unpublished, Febraban