# Brazilian Credit Co-operatives and Financial Banks: A Ten-Year Performance Comparison

**Marina Teixeira Trindade, Francisco de Assis Ferreira Filho and Sigismundo Bialoskorski Neto**

The present paper aims to analyse credit co-operatives' financial performance in the last ten years compared to other financial institutions. The analysis was based on financial position and percentage of assets, net equity, deposits and credit operations, the most representative accounts in the balance sheet of a financial institution, as well as financial rates such as net return on investment, total financing costs, return on assets rate and self-sustainability. The study also analysed macroeconomic data such as GDP, GDP *per capita*, inflation, interest and exchange rates during the period to investigate whether banking institutions' growth was significant in different economic scenarios.

## Introduction

The Brazilian National Credit Cooperatives Association (Associação Nacional das Cooperativas de Crédito) (2007) considers that the economic stabilisation consolidated financial institutions' growth, including credit co-operatives in general, which have expanded their credit, deposits and services since the second half of the 1990s.

The present paper aims to analyse credit co-operatives' financial and economic growth from 1996 to 2005, discussing whether their growth was transitory or was going to be sustainable in the long term by comparing it to national private banks' performance. To achieve this goal, the authors firstly analysed credit co-operatives' economic growth in the period and GDP, GDP *per capita*, inflation, interest and exchange rates influence in credit co-operatives' and national private banks' assets, net worth, deposits, and credit operations. After that, a specific financial analysis of the twenty biggest Brazilian credit co-operatives and three of the five biggest Brazilian commercial banks was done based on net return on investment, total financing costs, return on assets rate and self-sustainability.

## Credit Co-operatives and Brazil's National Financial System

In Brazil, the first and still existing credit co-operative, Caixa Rural de Nova Petrópolis, was established in 1902 by the Swiss priest Theodor Amstadt in Rio Grande do Sul state. The National Co-operative Credit Bank (Banco Nacional de Crédito Cooperativo) was created in 1951 to provide assistance and support co-operatives but was closed in 1990. Since 1988, a variety of laws and resolutions in the new Brazilian Constitution have guaranteed the credit co-operative sector consolidation in Brazil. Bansicredi and Bancoob, the two Brazilian credit co-operatives' banks, were created in 1995 and 1996 respectively and in 2003 a governmental resolution made room for credit co-operativism, since it allowed the constitution of co-operatives with free admission of associates.

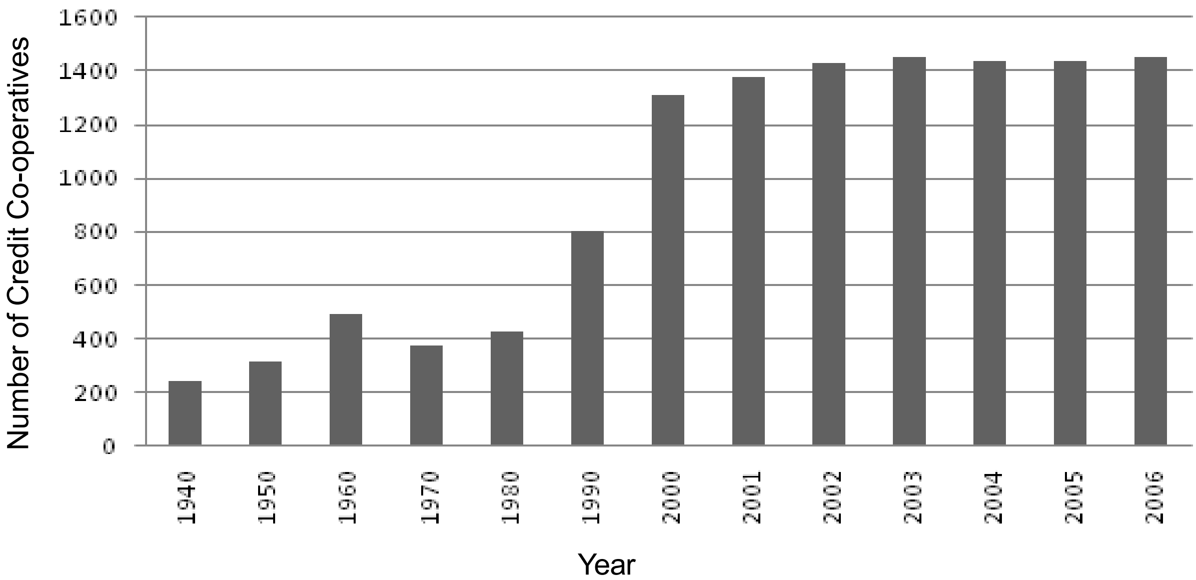
Credit co-operatives are considered non profit organisations established to provide financial services to their associates, such as offering credit, collecting deposits in cash and at term, checks, charging services, and custody besides other specific operations.

Based on Figure 1, it is possible to observe that the number of credit co-operatives has increased in the last decades, mainly in the 1990s.

Credit co-operatives are part of Brazil's national financial system, which, according to Assaf Neto (2008) is constituted by private and public financial institutions, with the National Monetary Council (Conselho Monetário Nacional - CMN) as its highest organ.

The national financial system manages the relation between surplus and deficit agents. Surplus agents create savings by deriving lower expenditure and investments than their revenue, while deficit agents expended and invested more than their revenue. According to Fortuna (2008), the national financial system has been structured by different laws in Brazil. The Banking Reform Law (Lei de Reforma Bancária) created the National Monetary Council and Brazil's Central Bank and established principles and procedures to subject the monetary entities. The Capital Market Law (Lei de Mercado de Capitais) established principles and procedures to

**Figure 1:** Evolution of the number of credit co-operatives. Source: Brazil's Central Bank




structure the investment system aiming to support national development and credit demand. The Multiple Banks Law and the New Limited Liability Law (Lei de Criação dos Bancos Múltiplos and Nova Lei das Sociedades Anônimas) consolidated diverse articles from the Securities Commission Law and the Limited Liability Law (Lei da CVM and Lei das Sociedades Anônimas), increasing protection to minority stock owners and SC's power as a capital market regulatory and supervisory body, including investment funds and derivatives.

The national financial system division, proposed by Assaf Neto (2008), is composed by two subsystems. The first, a normative one, includes bodies managing financial market operations and its institutions by controlling and regulating it. For example, the National Monetary Council, Brazil's Central Bank, Brazil's Securities and Exchange Commission (Securities Commission – SC) and other special institutions, like Banco do Brasil, the National Bank for Social and Economic Development (Banco Nacional de Desenvolvimento Econômico e Social – BNDES) and Caixa Econômica Federal. The second, intermediation, can be divided in five groups:

1) Banking financial institutions, represented by commercial banks.
2) Non-banking financial institutions, represented by investment banks, development banks, real estate credit societies and, according to Assaf Neto (2008), credit co-operatives.
3) The Brazilian Savings System (Sistema Brasileiro de Poupança - SBPE), compounded by Caixa Econômica Federal, real estate credit societies, saving and leasing associations and multiple banks, which constitute the Brazilian housing financial system.
4) Auxiliary institutions represented by the stock exchange, brokers, distributors and independent investment agents.
5) Non-financial institutions represented by factorings and insurance companies.

This classification contextualises the scenario where credit co-operatives are inserted, serving as basis to analyse their performance and detail the characteristics that supported their growth.

| Type | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Banks | 210 | 205 | 194 | 180 | 174 | 169 | 164 | 153 | 143 | 141 | 139 | 138 | 137 |
| Commercial Banks[1] | 34 | 35 | 38 | 36 | 28 | 25 | 28 | 28 | 23 | 23 | 24 | 22 | 21 |
| Credit Co-operatives | 946 | 980 | 1018 | 1120 | 1198 | 1253 | 1311 | 1379 | 1430 | 1454 | 1436 | 1439 | 1452 |

**Table 1:** Evolution of the number of multiple banks, commercial banks and credit co-operatives. Source: Brazil's Central Bank, 2007.

## Comparison of credit co-operatives and national private banks

The number of Brazilian credit co-operatives has increased in recent years, according to Table 1.

It is important to point out that while the number of credit co-operatives has increased, the number of commercial and multiple banks has decreased. This contradiction can be explained by different growth strategies used by the latter, mainly based on mergers and acquisitions, to increase their scale and reduce costs, while credit co-operatives are based on organic growth.

Therefore, it is necessary to compare credit co-operatives' and national private banks' growth to know whether these institutions have followed the national economic performance in the last years and how each type of institution has behaved in economic growth scenarios.

Initially, it is necessary to verify whether those institutions are comparable, given that they have different operations, services and objectives. Furthermore, the influence of macroeconomic variables such as Gross Domestic Product (GDP), Gross Domestic Product *per capita* (GDP per capita), National Ample Prices to Consumer Index (Índice Nacional de Preços ao Consumidor Amplo-IPCA official inflation index in Brazil), interest rate (Selic – target interest rate in Brazil) and exchange buy rate over credit co-operative's balance, specially assets, net equity, deposits and credit operations must be analysed. The data analysed refers to the period between 1996 and 2005.

The variables were chosen based on their relevance:

1) GDP measures the national economic growth, so it is expected that credit co-operatives and national private banks follow its behaviour. In other words, their growth should be directly correlated to the economic growth;
2) IPCA has been the official Government index to measure inflation goals since July, 1999, and it is used to measure the correlation between the balance variables and the Brazilian inflation rate;
3) Selic is the basic interest rate in Brazil, defined by the Monetary Politics Committee (Comitê de Política Monetária – COPOM). An inverted correlation between Selic rate and credit co-operatives' and national private banks' profitability is expected;

**Credit Co-operatives**

| | GDP | GDP *per capita* | Inflation Rate (IPCA) | Interest Rate (Selic) | Exchange Rate (Buy rate) |
|---|---|---|---|---|---|
| Assets | *0,988 | *0,912 | 0,146 | -0,627 | *0,806 |
| Net Equity | *0,987 | *0,911 | 0,133 | -0,627 | *0,796 |
| Deposits | *0,954 | *0,825 | 0,264 | -0,628 | *0,897 |
| Credit Operations | *0,989 | *0,923 | 0,121 | *-0,634 | *0,790 |

**National Private Banks**

| | GDP | GDP *per capita* | Inflation Rate (IPCA) | Interest Rate (Selic) | Exchange Rate (Buy side) |
|---|---|---|---|---|---|
| Assets | *0,986 | *0,930 | 0,104 | -0,620 | *0,774 |
| Net Equity | *0,972 | *0,873 | 0,172 | -0,616 | *0,838 |
| Deposits | *0,973 | *0,941 | 0,068 | -0,567 | *0,707 |
| Credit Operations | *0,983 | *0,944 | 0,137 | *-0,669 | *0,760 |

* There is significant linear correlation between the variables for a critic value of 0,632 and a significance level of 5%

**Table 2:** Pearson's correlation coefficient between macroeconomic variables and the main variables of credit co-operatives' and national private banks' balances

4) The Exchange rate is used to intermediate commercial and financial relations among countries, so it is extremely useful for Brazil's economy. The analysis examined whether there is correlation between that rate and the balance variables of credit co-operatives and national private banks. Only the exchange buy rate was used.

The analysis used Pearson's correlation coefficient to measure the linear correlation intensity between them. The results are presented in Table 2.

Based on correlation coefficients it is possible to observe that both credit co-operatives' and national private banks' balances variables are correlated similarly to changes in macroeconomic variables. In both cases, there was significant linear correlation between main balance accounts and GDP,

**Financial institutions representation in total national financial system assets**

| Institution | 1996 | 2005 | Variation |
|---|---|---|---|
| Public Banks (including State banks) | 21.92% | 5.09% | -16.83% |
| Banco do Brasil | 12.52% | 15.36% | 2.84% |
| Caixa Econômica Federal | 16.47% | 12.05% | -4.42% |
| National Private Banks | 38.28% | 43.12% | 4.84% |
| Banks under Foreign Control | 10.51% | 22.89% | 12.38% |
| Credit Co-operatives | 0.30% | 1.49% | 1.19% |

**Financial institutions representation in total national financial system net equity**

| Institution | 1996 | 2005 | Variation |
|---|---|---|---|
| Public Banks (including State banks) | 12.40% | 4.74% | -7.66% |
| Banco do Brasil | 11.86% | 9.30% | -2.56% |
| Caixa Econômica Federal | 8.85% | 4.39% | -4.46% |
| National Private Banks | 54.21% | 54.15% | -0.06% |
| Banks under Foreign Control | 11.41% | 24.56% | 13.15% |
| Credit Co-operatives | 1.27% | 2.86% | 1.59% |

**Financial institutions representation in total national financial system deposits**

| Institution | 1996 | 2005 | Variation |
|---|---|---|---|
| Public Banks (including State banks) | 21.50% | 5.98% | -15.52% |
| Banco do Brasil | 14.53% | 16.51% | 1.98% |
| Caixa Econômica Federal | 23.14% | 14.26% | -8.88% |
| National Private Banks | 33.36% | 41.61% | 8.25% |
| Banks under Foreign Control | 7.17% | 20.27% | 13.10% |
| Credit Co-operatives | 0.30% | 1.37% | 1.07% |

**Financial institutions representation in total national financial system credit operations**

| Institution | 1996 | 2005 | Variation |
|---|---|---|---|
| Public Banks (including State banks) | 23.48% | 4.05% | -19.43% |
| Banco do Brasil | 10.62% | 18.46% | 7.84% |
| Caixa Econômica Federal | 23.99% | 8.01% | -15.98% |
| National Private Banks | 31.87% | 40.84% | 8.97% |
| Banks under Foreign Control | 9.51% | 26.37% | 16.86% |
| Credit Co-operatives | 0.53% | 2.27% | 1.74% |

**Table 3:** Evolution of financial institutions representation in the national financial system. Source: Brazil's Central Bank and SISBACEN

GDP *per capita* and exchange buy rate. Therefore, there is insufficient evidence of linear correlation between these accounts, inflation, and interest rate variables, except for credit operations, which have an expected significant correlation: the higher interest rate (Selic) is, the lower the volume of credit operations realised in both cases.

Therefore, it is possible to claim that the comparison between credit co-operatives and national private banks is viable, given that their balance variables correlate similarly with macroeconomic variables.

## Credit co-operatives' representation in the national financial system

Credit co-operatives' participation in the national financial system has increased in the last years, confirming the sector growth. *Table 3* below shows the percentage of that representation variation for each type of organisation within the financial system, based on their main balance accounts between 1996 and 2005.

Both credit co-operatives and national private banks increased their representation in the national financial system assets, deposits and total of credit operations during the period, with the national private banks' representation increasing more than that of credit co-operatives. While credit co-operatives increased their representation in these accounts by 1.19%, 1.07% and 1.74%, respectively, national private banks increased theirs by 4.84%, 8.25% and 8.97%, respectively. It is worth mentioning that the participation of national private banks in the national financial system net equity reduced by 0.06%, even with their growth in the Brazilian system while credit co-operatives increased their participation by 1.59%. It is also possible to observe that banks under foreign control had the highest representation growth, above 12%, on all accounts analysed.

It is possible to consider credit co-operatives' representation growth as significant, but less intense than other institutions' growth.

## Financial performance analysis of the twenty biggest credit co-operatives

Out of the 1,452 credit co-operatives that compound the Brazilian Financial System the twenty biggest ones were chosen based on 1995's total assets, representation in 1996's Brazilian Financial System, and continuity in the ten years studied. These twenty credit co-operatives represented, in 1996, 24.62% of assets, 16.36% of deposits, 23.22% of credit operations and 21.70% of total net worth of all Brazilian credit co-operatives. As benchmarks, using the same criteria – representation and continuity – three of the biggest national private banks, Bradesco, Itaú e Unibanco were chosen. Two different analyses were done to measure their performance: a horizontal analysis of patrimonial accounts and a financial indicators analysis. These indicators evidence results to qualify the credit co-operatives analysed. For Matarazzo (1995, page 153), an indicator

> ... is the relation between financial demonstration, individual or aggregate accounts that bespeaks certain economic or financial aspects of a company.

Each analysis is described below.

### Horizontal analysis

An analysis based on the annualised percentage evolution, based on the previous year, of the most significant patrimonial accounts for financial institutions. The period analysed was from 1996 to 2005, and the accounts analysed were credit operations, which represent a significant percentage of total investments in financial institutions and their clients' portfolio; deposits, which represent a significant part of a financial institution's funds; total assets, which make a global growth analysis possible; and net worth, which represents the evolution of the owner's investments in the company.

### Financial indicators analysis

The financial indicators analysis is fundamental to this paper, since it contributes to arriving at a conclusion about credit co-operatives' and national private banks' financial performance. Each indicator used is described below.

### Net Return on Investments

This indicator represents the net return of a company's investments and exhibits a total return analysis of the company's total assets. It sums the profitability of:

1) Revenue from Credit operations divided by their average, multiplied by their Average in relation to total assets.
2) Revenues from Bonds, Securities and Derivatives divided by their average, multiplied by their average in relation to total assets.
3) All operational revenues, except the two mentioned above, minus all operational expenses, except captation expenses and loans and rehearse obligations expenses, divided by total assets average.

To emphasise, the total assets average was considered by weighing all balance accounts averages.

**Total Financing Costs**
This indicator considers the total company's cost of debt to third parties, not taking into account the cost of equity, and represents the debt onerousness to the company. By calculating the difference between the net return on investments and the total cost of debt it is possible to identify the company's earnings or losses and how it uses third party's capital to finance leverage.

Such calculation comprehends captation expenses plus loans and rehearse obligations expenses divided by deposits average plus loans and rehearse obligations average and other obligations average added together minus the permanent. The sum of net return on investments and total financing costs results in financial operation's spread; in other words, the financial institution profit with its operations versus its costs to finance its administrative and financial operations.

**Self-Sustainability**
This indicator makes the analysis of a financial institution possible using the profit and loss statement perspective, considering its total values. The paper uses the self-sustainability indicator model proposed by Naves (2007). This indicator calculates the financial intermediation income plus services rendering income and other operational incomes, divided by financial intermediation costs plus administrative and other operational costs.

According to Pischke (1999), efficient and stable institutions increase the financial market performance, and markets with good performance are essential to increase society's long term well-being. Moreover, financial markets are fundamental to the

Cooperativa de Crédito dos Plantadores de Cana de Sertãozinho-Cocred
Cooperativa de Crédito de Livre Admissão Cataratas do Iguaçu
Cooperativa de Credito de Livre Admissão Maringá
CCR* Alto Uruguai Catarinense-Crediauc
CCR Região de Varginha-Cafeic
CCR Conquista Limitada-Credic
CCR Coonai
CCR Credicitrus
CCR de Erechim
CCR do Norte de Minas
CCR dos Plantadores de Cana da Zona de Guariba
CCR dos Plantadores de Cana de Alagoas
CCR Fornecedores de Cana e Agropecuários da Região de Piracicaba
CCR Nova Petrópolis
Cooperativa de Crédito Vale do Itajai-Viacredi
Cooperativa Goiana **ECM dos Profissionais da Saúde
Cooperativa Coperforte ***CECMF de Instituições Financeiras Públicas Federais
Cooperativa Regional de Crédito do Sudoeste Mineiro
Credicoamo Crédito Rural
Credicorol Cooperativa de Crédito Rural

*CECMF: Cooperativa de Economia e Crédito Mútuo dos Funcionários
**ECM: Economia e Crédito Mutuo
***CCR: Cooperativa de Crédito Rural

**Table 4:** List of the twenty biggest credit co-operatives. Source: Brazil's Central Bank and SISBACEN

economic development since they connect all other markets.

### Return on Assets Rate

According to Martins (1986), this is one of the most important indicators of a company's financial profitability. It is calculated by a relation between net earnings (leftover, in the credit co-operatives) and total assets average.

The present analysis considers the credit co-operatives in Table 4.

Between 1996 and 2005, the analyses previously described were made for these twenty credit co-operatives and the three banks. Table 5 shows the indicators averages and their variation from 1996 to 2005.

Credit co-operatives' credit operations average growth varied from a minimum of 19.12%, maximum of 51.26%, median of 31.70% and average of 31.22%. The commercial bank with the highest growth in the period had an average growth of 23.88%; the one with the lowest had an average growth of 16.60% and the credit operations average growth for the banks was 20.50%.

Credit co-operatives had a higher deposits average growth than banks , but their variation had a great decline given the fact that 1996 presented a 99.46% growth while in 2005 growth was below average.

The variation in credit co-operatives' average growth by net worth had a positive variation four times higher than national private banks, with an average growth of 26.46% - 9% higher than national private banks' average growth. This fact shows a real expansion of credit co-operatives' stockholders.

Regarding assets, both types of institution had a negative variation, but both had a positive average growth, with an average of 31.65% for credit co-operatives and 19.81% for banks.

Net return on investments had a negative variation in both cases, with banks showing a higher average profitability than credit co-operatives, which was expected due to the not-for-profit nature of credit co-operatives.

Both types of institution had an average variation in their total financing costs- around 7%- showing that in both cases the institutions can now contract less onerous debts than in the past. However, the average financing costs of credit co-operatives were slightly lower than banks'.

Credit co-operatives had a small negative variation of 3.01% in their average self-sustainability index while banks improved this indicator by 22.2%. However, In the period's average, credit co-operatives' self-sustainability index was higher than national private banks', evidencing their operational efficiency.

The variation in return on assets rate dropped 3% for credit co-operatives and had a slightly positive increase of 1.25% for banks. Meanwhile, credit co-operatives' average return on assets rate was significantly higher than the national private banks', a fact that can be explained by credit co-operatives' tax incentives.

## Final remarks

First, it is important to point out that credit co-operatives have different growth strategies from those adopted by banks. Even though both types of institution showed growth in the

| | Credit co-operatives average | National private banks average | Credit co-operatives average | | | National private banks average | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1996 | 2005 | Variation | 1996 | 2005 | Variation |
| Credit operations | 31.22% | 20.50% | 35.99% | 18.23% | -17.76% | 20.77% | 25.78% | 5.00% |
| Deposits | 46.55% | 17.26% | 99.46% | 19.27% | -80.19% | -3.34% | 11.97% | 15.32% |
| Net worth | 26.46% | 17.47% | 17.34% | 36.68% | 19.34% | 12.11% | 17.99% | 5.88% |
| Assets | 31.95% | 19.81% | 41.89% | 23.12% | -18.77% | 21.30% | 14.87% | -6.43% |
| Net Return on Investments | 12.61% | 15.71% | 20.27% | 12.50% | -7.77% | 17.5% | 13.64% | -3.82% |
| Total Financing Costs | -12.04% | -13.40% | -17.85% | -10.72% | 7.12% | -16.3% | -8.93% | 7.35% |
| Spread | 0.57% | 2.30% | 2.43% | 1.78% | -0.65% | 1.2% | 4.71% | 3.53% |
| Self-Sustainability | 1,251 | 1,170 | 1,284 | 1,254 | -3.01% | 1,109 | 1,331 | 22.20% |
| Return on Assets Rate | 4.19% | 2.90% | 7.31% | 4.33% | -2.98% | 2.6% | 3.85% | 1.25% |

**Table 5:** Analysis of horizontal and financial indicators of the twenty biggest credit co-operatives and three national private banks from 1996 to 2005

accounts, the national private banks had a higher growth than credit co-operatives, which can be a consequence of their distinctive strategies.

The balance accounts of both types of institutions respond similarly to economic variations: a growth in GDP, GDP *per capita* or exchange rates also increases the results in assets, net worth, deposits, and credit operations for these institutions, and vice-versa. An increase in interest rate decreases their credit operations, and vice-versa. This finding shows that credit co-operatives can use the Brazilian economic growth and the lower interest rates scenario to increase their financial performance and their participation in the National Financial System.

There was a significant increase in the number of credit co-operatives during the 1990s, and consequently an increase in their participation in the National Financial System due to a reduction in the number of public banks and Caixa Econômica Federal participation in the system. However, it is possible to consider that co-operatives' increased representation the in National Financial System was lower than that of foreign banks, and could probably have been higher if the foreign banks' participation in the System had not increased significantly.

Based on a specific analysis of the twenty biggest credit co-operatives, it is possible to observe that while the three national private banks sought to preserve a positive evolution in their main balance variables, besides the drop in the assets growth rate, the credit co-operatives' growth rate fell in most accounts, except the increase in net worth growth. Based on that fact, it is impossible to conclude whether the credit co-operatives' growth is momentary or sustainable in the long term, in spite of their favourable financial performance.

Analysing the average of all financial indicators proposed it is possible to notice that even though credit co-operatives had a lower net return on investments than Brazilian private banks, their total financing cost was lower. The national private banks had slightly higher spread than credit co-operatives, but their spread was satisfactory and in harmony with the co-operatives' principles of not-for-profit organisations.

The credit co-operatives' self-sustainability was positive and shows that their operational objective of financial intermediation had been realised efficiently, showing an even higher index than that of national private banks.

The credit co-operatives' net return on assets also showed a satisfactory index, higher than private banks', probably due to tax incentives enjoyed by credit co-operatives.

To summarise, the credit co-operatives, even through with different principles, objectives, services and strategies, behaved similarly to national private banks in the economic scenarios. The credit co-operatives had a significant increase in their assets, net worth, deposits and credit operations representation, but below the national private banks' representation growth. Moreover, they had a favourable financial performance, which evidences the sector's likelihood to continue to expand its participation in the National Financial System, even though it is not possible to conclude if its growth is sustainable in the long term.

**Marina Teixeira Trindade, Francisco de Assis Ferreira Filho and Sigismundo Bialoskorski Neto are at the University of Sao Paulo, School of Economics, Business Management and Accounting at Ribeirão Preto.**

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