# MANAGEMENT OF BANKING RISKS: ROMANIAN BANKS VERSUS EUROPEAN BANKS

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**Abstract:** The role of the banking system as essential link the saving-investment process makes of its stability a priority on the agenda of the public authorities. One of the major objectives of a central bank is to prevent the risk by promoting an efficient bank monitoring, which should contribute to the achievement of the stability and viability of the entire financial system. Thus, the central banks developed methods and processes for the continual supervising and evaluation of the banks – premises of the prevention of the apparition of a great variety of bank crisis or other unpleasant surprises regarding the entities of the banking system.

**JEL classification: G21, G24, G32**

**Key words: model, banking risk, trend analysis, rating system**

## Introduction

The bank activity involves risks which are manifested at the level of each bank entity, but which can be transmitted in the entire bank system or, in the case of the international/transnational banks, in more bank systems. The banks pursue the reaching of some objectives that are many times divergent, in that they use specific instruments both in order to raise its quota on the market, and also to attract available capitals necessary to the performance of some speculative transactions.

On the other hand, the changing environment the banks operate in, marked by the increase of the volatility, the internationalization and the liberalization of the financial markets increased the effect of contagion, as it was proven by the propagation of the effects of the financial crisis on the entire world bank system. These events determined the supervising authorities to pay an increased attention to the financial risks and, implicitly, to the administration of the systemic risk.

## The models used in the global appreciation of the banking risks

In order to prevent the systemic risk, in order to assure the stability and the viability of the entire bank system, the monetary authorities developed systems of monitoring the activity and the results of the banks. All the bank systems have at least an authority of regulation and supervising, which have responsibilities, powers of regulation and implementation of the different assumed decisions. In most of the bank systems, the regulation and supervising authority goes to the central bank. In order to be efficient, the supervising authorities must rejoice an appropriate implementation power and an adequate degree of autonomy, most of the times they having to resist the pressures exercised by the government, banks, stock holders, deponents or creditors.

The supervising authority normally uses a top down approach that is focused upon the evaluation of the manner the banks identify, quantify, administrate and control the risks, and as it is the case, establish a diagnostic for the observed problems. In the practice of the banking supervising, directed towards the evaluation of the risk and the identification of the potential problems that can affect the bank system, the authorities use instruments and procedures of global appreciation of the bank risks, known as *warning in time systems*. The most known supervising system of the bank rating is the CAMEL model, used in USA. Thus, Federal Reserve Bank evaluates the banks thanks to a category of performances included in the CAMEL system (acronym formed of the names of the composing elements of the process of examination of the safety and solidity of the banks – solvability, the quality of the assets, the management, the incomes and the liquidity). Each element is attributed grades from 1 to 5. The banks that have received the grades 4 or 5 are considered banks in difficulty, their activity being considered risky and they are exposed to bankruptcy. These are strictly supervised and forced by the bank authorities to optimize their financial behavior.

In the American approach of the risk position of a bank, the bank performance is defined by solidity, given by an appropriate adequacy of the capital. The management of the bank and the profitableness (which is the purpose of each bank) are not objectives of the Central Bank, being considered the most efficient means of minimization of the risks and covering of the exposure to the risk.

*The analysis systems of the financial indicators based upon the prudential norms* suppose the monitoring and the analysis of the main economical-financial indicators of a bank institution: the adequacy of the capital, the liquidity, the exposure to a single debtor etc. and in case they exceed the established limits, the supervising authority interferes aggressively.

*The comprehensive methods of evaluation of the bank risks* suppose an evaluation of the risk profile of the bank through the quantification of all the risks that correspond to every activity treated distinctively and the attribution of certain scores for every activity. The cores are afterwards aggregated so that the final score of the bank as a whole is obtained.

*The statistic models* have the advantage that they identify those risks that have the greatest possibility to generate situations adverse to the bank, based on the prevision of the probability of the future evolutions. These models remove all the disadvantages of using the static models in an economy characterized by dynamism. The most used models are the ones which estimate a *probability of a decrease of the grade held by the bank, predict a supervising incapacity* or *estimates potential losses* which can induce, under extreme conditions, banking bankruptcies. The misfit of these models stands in the fact that they suppose the existence of some considerable historic registers, so that the solutions prove to be veridical. At the same time, the solutions of the models depend on the right choice of the variables upon which the provision is made.

The bank rating and early warning system used by the National Bank of Romania is CAAMPL. This was implemented in 1999 in order to promote an efficient supervising, aligned to the international practices and standards. The fundamental objective of the supervising system is the identification initially of those banks that are considered inefficient, according to the evaluation criteria of the financial and operational aspects established by the monetary authority or manifest adverse trends, requiring a special supervising.

The components of analysis of the CAAMPL system are: the adequacy of the capital (C), the quality of the assets (A), the quality of the stock holding (A), the management (M), the profitableness (P) and the liquidity (L). In determining the *composed degree of classification*, from the five elements, four are analyzed in accordance to a series of indicators, each bank being attributed a composed rating and a final score, which reflects the total of points given to the indicators which define the CAAMPL components (the banks are classified into five categories, the superior level being represented by the rating 1). The final grade is obtained by summing the value of the rating for each indicator, to which is added the value of the rating for the components "the quality of the stock holding" and "the quality of the management".

From 2004 BNR has modified the modality of evaluation of the management of the banks by using some models of evaluation of the risks of the *scorecard* type which allow the calculation and the attribution of a grade for each component of the management system: the planning, the monitoring, the control, and the evaluation. These data-processing applications have been possible as a consequence of accessing the PHARE financing funds and the consultancy offered within these projects. From 2005 BNR has modified the approach in the evaluation of the L component, so that it would quantify the capacity to plan, monitor and control the bank risks, to evaluate the adequacy of the internal audit systems.

The rating system used by BNR is submitted to a continuum process of perfecting, imposed by a multitude of factors, of which we mention: the evolution of the national economy, the evolution and the vulnerability of the bank system, the necessity of the harmonization of the bank legislation to the international standards. For instance, upon the liquidity problems the Commercial Bank Unirea, Eurom Bank (e.g. Dacia Felix) or Bancorex dealt with during 1998-2000, the National Bank of Romania included two essential components (the quality of the stock holding and the management) and improved the *liquidity* component (2001) by determining the liquidity index as report between the effective liquidity and the necessary one.

In order to consolidate the supervising activity which allows bnr to plan, monitor, control the bank risks and also to evaluate the quality of the informational systems at the level of each bank, the banks rating system caampl includes a new component *the market risk sensitivity (s)*. This one evaluates the market risk and the first simulation of this component was achieved on june 30th, 2004. According to the theoretic model, the banks were submitted to some interest rate shocks consisting in the modification of the interest rate by four percents for the national currency and tow percents for the unique european currency and the american dollar. The scenario was chosen so that it would generate a loss at the level of each bank. The conclusion of the simulation was that, despite the insufficient development of the derived financial instruments meant to reduce the market risk, most of the romanian banks registered low exposures to the interest rate risk. The weakness of this simulation was the unavailability of some data necessary to the evaluation of the sensitivity for some banks. According to the model, the weight of the quantitative analysis was of 40%, the difference being represented by an analysis of qualitative type.

**Modern Approaches Of The Global Risk**

The supervising authorities, and also the theoreticians pay nowadays a special attention *to the macro prudential analysis* in order to evaluate the vulnerability of the bank systems to shocks. The novelty of this recent approach, consecrated at the end of the 90's, of the last century consists in the fact that the systemic risk is analyzed from the perspective of its interaction to the real economy, the focus of the supervising activity being on the contamination risk and the mutual exposure of the banks to macroeconomic shocks. We assist thus, to the minimization of the factors specific to each bank that can have an adverse evolution and can amplify the exposure to risk.

Practically, this approach uses aggregated macro prudential quantitative indicators at the level of the bank sector (liquidity, adequate capital, the quality of the assets) and macroeconomic indicators (the GIP level and dynamics, the evolution of the inflationist process, the policy of the incomes, etc.) which concur to the establishment of the interaction between the *real sector of the economy* and *the health* of the bank system. The macro prudential analysis frame is complete when in the model are used data regarding the entire financial system and there are used techniques of the *stress tests* type.

We consider that the efforts of applying are considerable and the success of this type of analysis depends on the degree of integration of the financial system in every country and on the creation of some international standards so that this demarche is unitarily implemented.

The decision of the Administration Council of BNR from October 2004 through which the Direction of Financial Stability is created, having a role in the elaboration of some representative financial stability indicators for the supervision of the national financial system and to assure their international comparability, denotes the fact that *the macro prudential analysis is agreeable* by the monetary authority from our country too. The problem will be difficult, considering the structure of the Romanian financial system, and also the total liberalization of the capital account, which will impose the Central Bank the enforcement of the supervision process for the assurance of the stability of the bank system.

Usually, the authorities use more warning in time systems, precisely to assure a high efficiency of the supervision. The Committee from Basel through the New Basel II Agreement set the basis of the *consolidated supervision*, considering the transnational character of the banks. Thus, the authority from the origin country must supervise, on a consolidated basis, the banks form the host countries, which do not exclude the compulsoriness of the banks from the host country in respecting the prudential norms specific to the banking market where they operate. The banks reciprocally supply themselves information regarding the management and the stock holding of these credit institutions, especially as far as the liquidity, the solvability the scheme of guarantying the deposits, the limitation of the great exposures, the accounting procedures and the internal control mechanisms are concerned.

Therefore, at the same time with the exposure of our country to the European Union, the National Bank of Romania became a member of the European System of the Central Banks, quality in which it is represented in all the its work structures. This representation supposes the participation to the regulation process at the level of the European Union which is developed on four work levels.

Among *the main benefits* of this process we can find the increase of the speed of adopting the decisions by delegating the components of technical regulation to the Specialty committees and the possibility of reaching in time the convergence in the plan of the supervision practices at the competent authorities from the E.U. Among the actions taken by BNR in order to reach the convergence in the plan of the practices of supervision of the banking activities we can find:

I. The adapting of the reporting system of the credit institutions at the COREP requirements - *Common Reporting* – standardized frame of prudential reporting in the EU – and FINREP - *Financial Reporting* – standardized frame of financial reporting used by the prudential supervision authorities from the EU – through the configuration of their reporting forms and their integration in the reporting electronic system of BNR.

II. The use of the recommendations elaborated by the Committee of the European Bank Supervisors (CEBS).

III. The signing of ten bilateral memorandums with supervision institutions from the original country of the financial groups present on the Romanian market for the flexibility of the exchange of information necessary in the achievement of an efficient supervision.

IV. The participation to the information exchange with the supervisors from South-Eastern Europe by constructing a regional platform, as a consequence of the dominant role the subsidiaries of some foreign banks play in the financial intermediation of this region.

V. The promotion of a mutual supervision through the participation to *twinning* programs, professional training seminaries, bilateral meeting between BNR as supervision authority from the host country and those from the origin country, such as Banca d'Italia, Austrian Financial Market Authority and Austrian National Bank, Hungarian Financial Supervisory Authority and Bank of Greece.

### Management of banking risks in Romania

This paragraph focuses on the types of banking risks for theory and practice of banking in Romania thus catching particular aspects worthy to note. To counteract any adverse track of bank risk, it is underlined the importance of prudential supervision and steps to improve procedures for risk based supervision.

The analysis of risk management in the Romanian banking system reveals the following aspects (as seen in the table no. 1):

1. Thus by the promoted policy, the central bank has created a sector composed of banks becoming more powerful, able to provide financial intermediation based on efficiency, the private banking segment becomes predominant. Increase the share of banks with majority foreign capital is beneficial consisting in the form of increased competition in the banking system, with a possible positive impact on interest rates on loans, but can occur adverse effects, whereas, by accessing external funding or grant credit in foreign policy promoted by the central bank money are those segments less effective;

2. Also risk exposure to the banking system may be highlighted and the evolution of the main financial indicators and caution that bank reveals the following aspects:

1. A substantial improvement of the two indicators of profitability ROA and ROE, during 2004 to 2008. In 2004 and 2005 return on assets was much lower than in the previous year, profit is generated by an exogenous factor, the intervention rate of the NBR. Also increase banks' profitability has been boosted by a capitalization process that allowed the aggressive expansion of business segments (including the sheet) and treasury products and providing solutions to modern risk management for customers;

2. Solvency experienced a slight decrease since 2004, but does not mitigate the problem of credit, but: reduced oscillation around 20% were due to the influence that could NBR rules determine the banks to be more careful in lending to population;

3. During the period 2004 -2007, the "bad loans reported to total assets", is maintained at normal levels, sub unitary, specific to any banking system. But in 2008, based on the financial crisis, the recorded values were over the unit;

4. Liquidity risk in Romania is high, well above minimum required levels (in 2007 was 2.15). Financial institutions sector non-banking (IFN) is underdeveloped, but has a considerable potential for growth. Systemic risks are low, given the small size of the sector;

**Table no. 1 - The evolution of risk indicators in Romania (National Bank of Romania, Annual Reports 2004 – 2008)**

| Crt. no. | Indicators | 12/31/ 2004 | 12/31/ 2005 | 12/31/ 2006 | 12/31/ 2007 | 12/31/ 2008 |
|---|---|---|---|---|---|---|
| 1 | Solvency report (>8%) | 20.6 | 21.1 | 18.1 | 13.78 | 12.34 |
| 2 | The ratio of the own capital | 8.88 | 9.13 | 8.26 | 6.78 | - |
| 3 | The general risk ratio | 46.83 | 47.61 | 53.01 | 56.94 | 50.74 |
| 4 | Overdue and doubtful credits / Total credits (Net value) | 0.29 | 0.26 | 0.20 | 0.22 | 0.35 |
| 5 | Overdue and doubtful credits / Total assets (Net value) | 0.18 | 0.15 | 0.14 | 0.17 | 0.31 |
| 6 | Overdue and doubtful credits / Own capitals | 2.05 | 1.34 | 1.54 | 2.28 | - |
| 7 | The ratio of credit risk | 2.87 | 2.61 | 2.81 | 4.00 | 6.52 |
| 8 | ROA (Net profit / Total assets) | 1.98 | 1.6 | 1.28 | 1.3 | 1.66 |
| 9 | ROE (Net profit / Own capitals ) | 15.6 | 12.7 | 10.2 | 11.4 | 18.11 |
| 10 | Liquidity indicator | 2.28 | 2.59 | 2.30 | 2.15 | 2.56 |

Dynamic business lending and credit quality indicators - high solvency rate, manageable level of bad loans (less than 1% of loan portfolio of banks) - indicating a reduced credit risk to the banking system and a considerable resistance of the shock up to 2007. In 2008, the credit risk increases under the influence mortgage crisis in the U.S.;

Operational risk has always been in the attention of banks, being generated in particular by the gaps of information system, monitoring the loss of customers, large fluctuations of personnel, information on suspicious transactions with possible repercussions on the image bank in question;

Currency risk is relatively minor when the short-term loans are prevailing, while the medium and long term is provided with a variable interest rate. Meanwhile, interest rates charged by banks is funding risk rate in the event's production. We believe that modifying loans granted in favor of medium and long term and reduce the spread of interest will lead to another dimension of this type of risk;

Risk of contamination on the interbank placements is insignificant whereas the interbank market were oriented central bank and the adjacent risks (currency risk, risk of interest rate and credit risk) record low. However, it can be said that Romanian banking system vulnerability to financial risks has been tested by models of stress tests, tests that have stressed the stability of the banking system, an adequate liquidity and adequate capitalization;

Gradual improvement of prudential banking indicators is the result of concentration on the side of the central bank supervision quality and sustained growth since 2000. Positive trends were sustained and increased capitalization of the banking system and strengthening the position of banks with foreign capital in the banking sector, although the profitability of assets was in 2004, 2005, 2006 and 2007 much smaller than previous year, profit is generated by an exogenous factor - the interest rate of BNR intervention.

### The degree of correlation between the European management of banking risks and the Romanian management of banking risks through the solvency indicator

We proposed ourselves to identify any correlation between the development of the indicators of solvency (IS) for Great Britain, Italy, France and Romania. To this end, we introduce sets of data recorded during 1998 - 2007 using the statistical analysis program MINITAB. We first determine the trend recorded by the indicator for the period specified and based on the deviations from trend obtained we will identify the existing correlations. Values for the solvency are presented in the following table:

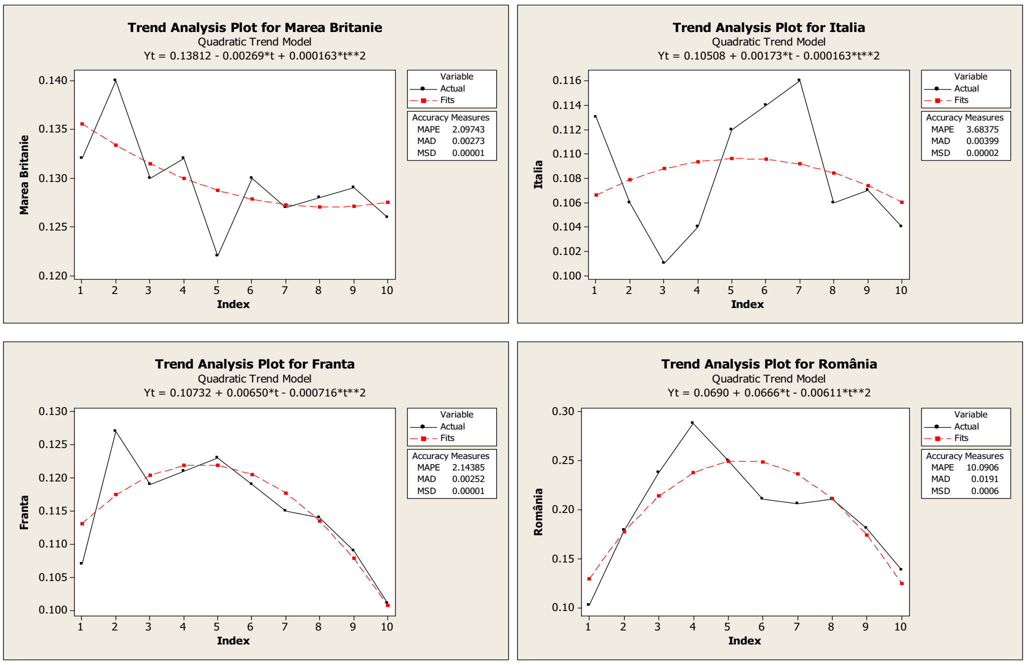


**Figure no. 1 – Trend Analysis for Great Britain, Italy, France and Romania (results obtained from Minitab)**

**Table no. 2 - The evolution of the solvency indicators (Global Financial Stability Report, October 2008)**

| Year | Great Britain | Italy | France | Romania |
|---|---|---|---|---|
| 1998 | 13.20% | 11.30% | 10.70% | 10.25% |
| 1999 | 14.00% | 10.60% | 12.70% | 17.90% |
| 2000 | 13.00% | 10.10% | 11.90% | 23.80% |
| 2001 | 13.20% | 10.40% | 12.10% | 28.80% |

| Year | Great Britain | Italy | France | Romania |
|---|---|---|---|---|
| 2002 | 12.20% | 11.20% | 12.30% | 25.00% |
| 2003 | 13.00% | 11.40% | 11.90% | 21.10% |
| 2004 | 12.70% | 11.60% | 11.50% | 20.60% |
| 2005 | 12.80% | 10.60% | 11.40% | 21.10% |
| 2006 | 12.90% | 10.70% | 10.90% | 18.10% |
| 2007 | 12.60% | 10.40% | 10.10% | 13.80% |

To estimate the trend indicator of solvency, we use the square function at the expense of the linear function because it confers a high degree of accuracy. The results obtained are presented in figure no.1.

Based on the results obtained, we identify correlations between deviations indicator of solvency and trend approximated by a square function in the UK, France and Italy and Romania using Pearson correlations.

Correlation coefficient varies between -1 and 1, this meaning that:

- When approaching -1, the modification of a variable is strongly associated with the inverse linear change of the other variables;
- When the correlation coefficient is equal to 0, this means there is no association between changes of the two variables;
- When the correlation coefficient approaching 1, this means that the modification of a variable is very strongly associated with linear direct modification of the other variables.

Pearson correlation reveals the following results:

- Correlations: RESI_UK, RESI_RO: Pearson correlation of RESI3 and RESI10 = 0.098, P-Value = 0.787
- Correlations: RESI_IT, RESI_RO: Pearson correlation of RESI5 and RESI10 = -0.879, P-Value = 0.001
- Correlations: RESI_FR, RESI_RO : Pearson correlation of RESI8 and RESI10 = 0.264, P-Value = 0.461

Therefore, one can observe a high degree of inverse correlation between risk management for solvency in the italian banking system and the risk management for solvency in the Romanian banking system, and direct correlation, but low intensity between the risk of solvency of related systems French and British banks and that for the Romanian banking system. However, since the value p - value <0.05 only if correlations Italy - Romania, France - Romania, p - value is 0461 and for Italy - Romania, p - value is 0787, the value of p is very large, it should lead us to accept the null hypothesis, that there are significant differences between the risk of solvency managed by British and French banks and managed by Romanian banks. In this context, the differences are due to random events.

In conclusion, we find that there is a possibility that the Romanian banking system could adapt quickly to new mutations and Romanian banks could be competitive on the European banking market.

## Conclusions

The recent developments focus upon sophisticated systems that use econometric techniques for the estimation of the bankruptcy probability or the deterioration of the rating. Based upon the information offered by these instruments, set off, when it is needed, inspection actions which aim for the specific identified aspects or are established the priorities in the case of the general examinations which are performed on a regulated basis. Thus, the early warning systems of the deterioration of the bank performances allow the improvement of the efficacy of the bank inspection activity and a better administration of the limited resources the prudential control authorities dispose of.

Hence, we consider that there are some challenges in the implementation of a supervision process based upon the mechanisms of evaluation of the risk management:

- The thoroughness of the qualitative aspects of the supervision process, through: a greater involvement of the management of the credit institutions in the process of risks administration; the evaluation of the credit institutions is focused upon the establishment of the risk profile of the institution; the supervision consolidated upon a tight cooperation, both between the credit institutions members of the groups, and also the corresponding supervision authorities from other countries;
- The diminishing of the conformity and the achievement of a prudential supervision based upon the evaluation of the risks of the credit institutions;
- The focusing more on the assurance of respecting the principles of corporatist governance;
- The evaluation of the stability, the accuracy and the efficiency of the process of management of the risks of the credit institutions, especially regarding: the quality of the strategy of modernization of the risks management; the efficient existence and the of the specialized and managerial support committees; the efficient functioning of an adequate internal control system; a transparent and efficient system of managerial reporting.

Therefore, the Basel II Agreement is the most important referential frame in the micro prudential nowadays. In the frame of the new approach, the supervision activity is oriented more and more towards the analysis of the risk profile of the credit institution, of the means and instruments existing at the hand of its leaders for the efficient administration of the specific risks. The rating and early warning systems, the *stress tests* and the ones of interbank contamination represent sophisticated techniques that allow the successful achievement of the previously mentioned objectives. These instruments use relevant information on the characteristics of a credit institution and its counter parties, based upon which a synthetic measure of their performances and/or vulnerability is supplied.

On the other hand, the globalized economic and financial system has changed to such an extent that central banks are on their way to becoming irrelevant. We are a long way from the supply-and-demand fundamentals of a merchandising economy, which characterized the multinationals in the 1960s and 1970s. As the credit crisis of July/August 2007 demonstrated, rather than central bankers and regulatory authorities, it is the global financial industry that holds the upper ground.

After the crisis of the subprimes started to spread to other mortgages, several experts expressed the opinion that the globalization of credit risk, and most particularly of credit derivatives, holds many surprises beyond what is already known. This has proved to be one of globalization's negatives, as money center banks and other financial entities have been making loans at any level of creditworthiness because that's simply raw material for securitizing and selling structured products world-wide.

Therefore, we agree that there is cost and benefit with global financial integration, as with any other enterprise. Worldwide access to capital is likely to bring both advantages and drawbacks. Seeking the benefits of financial integration while suffering limited costs is an impossible task – because there exist plenty of tradeoffs which make the choice of a strategy complex and uncertain.

One of the ironies is that while the global market has lots of freedom, central banks lack the freedom to take necessary measures in a timely manner. Were the West's central banks to tighten monetary policy aggressively, they would bring this process of money supply expansionism under control. But aggressive tightening is not feasible at the time of a major crisis (like the actual global financial crisis of subprimes) because it could bring the financial edifice down single-handed.

Consequently, we believe that while Western central banks lose authority, other entities are not ready to take their place. For instance, in 2006 and 2007 credit rating agencies did not act swiftly to downgrade debt. If they had done so, they would have constrained households and companies from borrowing too much, as well as having discouraged banks from buying the upper tranche of junk mortgages as Tier-1 Capital.

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