

# INFORMATION AND COMMUNICATION IN BANKS - KEY ELEMENTS OF THE INTERNAL CONTROL SYSTEM – AN EMPIRICAL ANALYSIS BETWEEN ROMANIAN, AMERICAN AND CANADIAN MODELS OF CONTROL

**Palfi Cristina**

*Babeş-Bolyai University, Faculty of Economics and Business Administration, Teodor Mihali Street, no. 58-60, 400591, Cluj-Napoca, Romania, cristinapalfi@yahoo.com, 0740-137578*

**Boța-Avram Cristina**

*Babeş-Bolyai University, Faculty of Economics and Business Administration, Teodor Mihali Street, no. 58-60, 400591, Cluj-Napoca, Romania, botaavram@gmail.com, 0745-512459*

*The purpose of this paper is to focus on one of the most important aspect of the internal control in banking system – information and communication - trying to identify on which of the two well-known international models of control (COSO or CoCo) is our national one most appropriate to.*

*The research methodology is based on an empirical analysis between Romanian regulation and the models already mentioned. To reach to a conclusion we tried to identify several key issues closely related to information and communication, and to determine the degree of similarities and dissimilarities between the three selected frameworks, by using statistical indicators.*

*The paper has some limitations, too, because it only approaches formal harmonization. So, those issues analyzed through the regulations' perspectives need to be closely quantified in matters of their actual implementation, which offer us outlooks of future research.*

*Keywords: Information, Communication, COSO model, CoCo model, Romanian framework*

*Cod JEL: G21, M42*

## 1. INTRODUCTION

The necessity of a stronger internal control system consists on the main management's objectives (to maintain a reliable system, to ensure timely preparation of reliable information, to safeguard assets, to optimize the use of resources and prevent and detect error and fraud), which were along time the subject of many international studies<sup>503</sup>.

Both well-known COSO and CoCo models for an efficient and effective internal control system have been, as well, the subject of various research papers<sup>504</sup> along time.

As internal control frameworks, most authors<sup>505</sup> reached to the conclusion that the two models (COSO and CoCo) complement each other. All these authors see internal control as a process designed to facilitate and support the achievement of business objectives, which covers consideration of significant risks in operations, compliance and financial reporting, and which are mainly focused on the same objects, such as improving business effectiveness.

Romanian internal control system framework is a newer one, dated from 2003, when the our National Bank settled the regulation regarding internal control system and audit in banking field,

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503 Alvin A, Lemon W.M and Loebbecke J., Auditing: An Integrated Approach, Scarborough, ON: Prentice Hall Canada Inc., 5th Edition, 1993; FMCBC, Enhancing Management Involvement with Internal Control, Financial Management Capacity Building Committee, 2005, pg. 2.

504 Gramling A., Internal Control Systems, Encyclopedia of Business, 2nd Edition, 1990, [http://findarticles.com/p/articles/mi\\_gx5209/is\\_1999/ai\\_n19125759](http://findarticles.com/p/articles/mi_gx5209/is_1999/ai_n19125759); Callaghan J.H., Savage A. and Mintz S., Assessing the Control Environment Using a Balanced Scorecard Approach, The CPA Journal Online, March 2007; Rezaee Z., What the COSO report means for internal auditors, Managerial Auditing Journal, vol. 10, no. 6, 1995, pg. 5-9

505 Rittenberg E. L, Martens F. and Landes C.E, Internal control guidance – not just a small matter, Journal of accountancy, March 2007; Hirth R.B.Jr., Better internal audit leads to better controls, Financial Executive, November 2008, [www.financial executives.org](http://www.financial executives.org); Kinney W.R.Jr., Research Opportunities in Internal Control Quality and Quality Assurance, Auditing - A Journal of Practice & Theory, Vol. 19, Supplement, 2000, pg. 84

emphasizing their importance in managing significant risks. Even if this framework is an implementation of the Basle Committee on banking Supervision's settlement, it designs an internal control system, so there has to be a more or less similarity between it and the two international well-known models, which is going to be the aim of our research.

## 2. AIM OF THE STUDY AND RESEARCH METHODOLOGY

Our empirical study is aimed to identify on which of the international internal control models (COSO or CoCo) is based the Romanian internal control system framework for credit institutions, as regards *information and communication*. In order to reach to a conclusion, we made an analysis with character of comparison between the two international models, as well as our national regulation and each of them. In this study, we focused our attention on aspects related to information and communication, one of the most important components on any internal control system.

Our empirical analysis was performed by testing the similarities and dissimilarities between the three sets of regulations regarding information and communication – the internal control system's component analyzed, taken two at a time in order to reach to a conclusion about the comparability degree existent between them.

The source of information for our research was the three regulations mentioned above which were codified and assayed by using a statistical method, which is being detailed in the chapter dealing with the comparative approach of the national framework by reference to the two international internal control models.

The findings of our study, which come from analyzing formal harmonization in the area of internal control system, are correlated to the literature review, but as every other research, our paper has some limitations, too, which offer us outlooks of future research. We should not forget that our study is only about a formal harmonization, which needs to be broadened to the current development stage of the national banking system, focusing on the degree in which the regulation is put into practice and its purpose is being achieved.

## 3. LITERATURE REVIEW

Internal control has different meanings to different parties. That is why, it is very difficult to give an only-one definition of the internal control system, because it can be seen from different angles. In the followings we are going to focus our attention on two of the most important international models of control.

The first one is **COSO's** model<sup>506</sup>, which tries to establish a common definition. Under COSO's report, *internal control* in its broader sense is defined as a process affected by an organization's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of *objectives* in the following categories: (a) effectiveness and efficiency of operations; (b) reliability of reporting and (c) compliance with applicable rules, laws and regulations.

The second model of *internal control* is the **CoCo's** one, which is focused on behavioral values rather than control structure procedures as the fundamental basis for internal control in a company<sup>507</sup>. According to this, *internal control*<sup>508</sup> is put into the context with how a task is performed, defining it as those elements of an organization (including its *resources, systems,*

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506 COSO, Internal Control – Integrated Framework, Committee of Sponsoring Organizations of the Treadway Commission, 1992, [www.aicpa.org](http://www.aicpa.org) / [www.coso.org](http://www.coso.org)

507 Protiviti Independent Risk Consulting, An Overview of the COSO Internal Control – Integrated Framework, 2004, [www.knowledgeleader.com](http://www.knowledgeleader.com)

508 CICA, Guidance on control, Criteria of Control Board, The Canadian Institute of Chartered Accountants, 1995, [www.cica.ca](http://www.cica.ca)

*processes, culture, structure and tasks*) that, taken together, support people in the achievement of the *objectives*.

If COSO divided internal control into five main components, CoCo uses four essential elements as groupings within which it articulates 20 criteria of control. These criteria create the basis for understanding control in an organisation and for making judgements about the effectiveness of it, a characteristic, which was from the very old time the subject of many studies<sup>509</sup>.

#### **4. EMPIRICAL COMPARATIVE APPROACH REGARDING INFORMATION AND COMMUNICATION BETWEEN ROMANIA, AMERICA AND CANADA**

##### **4.1 The Romanian banking internal control system framework on information and communication vs. COSO and CoCo models**

**Internal control**, as it was defined by the Basel Committee on Banking Supervision<sup>510</sup>, as well as by the National Bank of Romania<sup>511</sup> represents "*a continuous process in which takes part the board of directors, senior management and all level of personnel, and whose aim is to ensure that all the established goals will be reached.*" We have to stress that internal control is not just a procedure or a policy, performed at a certain point in time, but rather it is a continually operating action at all levels within the bank.

In order to reach the internal control goals, credit institutions must design a system based on five inter-related *elements*, the same as those from COSO's model of control, one of these being **information and communication**.

Firstly, adequate information and effective communication are essential for a proper functioning of the internal control system. From our National Bank perspective, in order to be essential, information must accomplish the following *qualitative characteristics*: *relevance* (imposed by both international models of control), *reliability, completeness and opportunity* (recommended by CoCo's criteria of control), *accessibility* (required by COSO) and *comparability*.

Secondly, when we talk about *information* we have to refer both to the *internal* ones (financial or operational) and the *external* ones (related to other events or circumstances relevant to decision making process). Similarly, according to COSO, the information needs to be determined if it is for the employees and elected officials of the municipality or the citizens, and if it is financial or non-financial.

Furthermore, a critical component of every bank's activity is to establish and maintain an *informational system* and to issue and implement *procedures for the use of information*. Even if there are not retrieved such stipulations in COSO's model, the CoCo's one consider that there have to exist information systems, which should be reassessed as objectives change or as reporting deficiencies are identified, as well as follow-up procedures, which should be established and performed enabling control to remain effective. Moreover, the National Bank of Romania stipulates the necessity of an *alternative plan for safeguarding information*.

Finally, as regards *communication*, all three frameworks consider that banks should implement *communication channels*, whereby employee's duties and responsibilities should be effectively communicated, and it is required to be designed in two-ways. Moreover, COSO considers that

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509 Turnbull Report, Internal Control Guidance for Directors on the Combined Code, 1999, [www.ecgi.org](http://www.ecgi.org); Tongren J.D., CoActive control, Internal Auditor, 1995, pg. 42-44; Gibbs J. and Keating P. Reengineering Controls, Internal Auditor, 1995, pg. 46-49

510 Bank for International Settlements, Basle Committee on Banking Supervision, Framework for internal control systems in banking organisation, 1998, [www.bis.org](http://www.bis.org)

511 National Bank of Romania, Regulation no. 17/18.12.2003 regarding the organisation and internal control of the banks' activities and the administration of the essential risks, as well as the organisation of the internal audit activity in banks, published in M.O. no. 47/20.01.2004, art. 3, lit. c)

communication should be separately handled as internal (among the employees and managers) and external (communication with the citizens).

#### 4.2 Empirical comparative approach of the Romanian framework for information and communication in credit institutions, by reference to international COSO and CoCo models

In order to achieve our aim - to identify on which of the international internal control models (COSO or CoCo) is based the Romanian framework for establishing the most efficient information and communication in credit institutions, we conducted an empirical study based on an analysis with character of comparison between the three sets of regulations (the two international models and the Romanian one).

We have started from the main principles for control activities required by COSO and the criteria of control also related to this aspect, as these are defined by CoCo, trying to establish the link between them. Thus, we have identified a series of issues regarding information and communication, which we organized within four main topics as follows: (1) *qualitative characteristics of information*, (2) *the area of information*, (3) *informational system and procedures for the use of information* and (4) *communication's characteristics*.

Starting from these topics, we proceeded to compare aspects related to information and communication, one of the most important component of the internal control system, as it appears within the three frameworks. Thus, we have allocated the 1 or 0 values for each possible and/or existent requirement within at least one of the considered regulation, where the 1 value shows that the requirement exists within that framework, and 0 value is given for the situation when the requirement is not found within the considered framework.

**Table I. Exemplification of the analysis method used for the considered topics**

Information & Communication - Analyzed elements	The character of the requirement		
	COSO	COCO	Romania
<b>Qualitative characteristics of information</b>			
- <i>reliability</i>	0	1	1
- <i>relevance</i>	1	1	1
- <i>completeness</i>	0	1	1
- <i>opportunity</i>	0	1	1
- <i>accessibility</i>	1	0	1
- <i>comparability</i>	0	0	1

In the above table (Table I.) there are presented the 1 and 0 values that have been allocated to each requirement of the four components analyzed.

In order to achieve the proposed comparison, we have considered that the best analysis, in case of this type of approach, is represented by the nonparametric correlation and the association degree between two or more than two considered variables. Thus, we have used for our research the Jaccards' association coefficients, which have been used before in studies focused on comparisons between different sets of regulations. On the other hand, the two Jaccard's coefficients offer the possibility of quantifying both the association degree and the dissimilarity degree between different sets of requirements regarding information and communication, taken into consideration for analysis.

So, in order to dimension the compatibility degree or, in other words, the association between two or more internal control systems, the calculation formula for the Jaccards' coefficient shows as follows:

$$S_{ij} = a / (a + b + c) \quad \text{and} \quad D_{ij} = (b + c) / (a + b + c)$$

where:

- $S_{ij}$  represents the similarity degree between the two sets of analyzed frameworks;
- $D_{ij}$  represents the degree of dissimilitude or diversity between the two sets of analyzed frameworks;
- a represents the number of elements which take the 1 value for both sets of frameworks;
- b represents the number of elements which take the 1 value within the  $j$  set of frameworks and the 0 value for the  $i$  set of frameworks;
- c represents the number of elements which take the 0 value within the  $j$  set of frameworks and the 1 value for the  $i$  set of frameworks.

The information and communication elements analyzed in this empirical study are there fore given the 1 value for containing a certain requirement and the 0 value for non-containing that considered requirement.

As a result of the effective measurement of the comparability degree between the Romanian framework and the international models COSO and CoCo, based on Jaccard's coefficients, we have reached to the conclusion that our national regulation is much more similar to CoCo's model of control rather that to the COSO's one, as presented in the following table (table II).

**Table II. Comparison analysis based on Jaccards' coefficients**

<b>Information &amp; communication</b>	Romania vs. COSO		Romania vs. COCO		COSO vs COCO	
	$S_{ij}$	$D_{ij}$	$S_{ij}$	$D_{ij}$	$S_{ij}$	$D_{ij}$
Qualitative characteristics of information ( <i>reliability, relevance, completeness, opportunity, accessibility, comparability</i> )	0,333	0,667	0,667	0,333	0.200	0.800
The area of information ( <i>internal / external; financial / non-financial</i> )	0,333	0,667	0,000	1,000	0,000	1,000
Informational system and procedures for the use of information ( <i>informational system, follow-up procedures, alternative plans</i> )	0,000	1,000	0,667	0,333	0,000	1,000
Communication's characteristics ( <i>internal / external, two-ways</i> )	0,333	0,667	1,000	0,000	0,333	0,667
<b>TOTAL</b>	0,250	0,750	0,583	0,417	0,133	0,867

## 5. FINDINGS AND CONCLUSIONS

The results of our analysis show the level of similarities between the national framework and the two international regulations. As it can be seen, the Romanian stipulations regarding information and communication issued by our National Bank is closer to CoCo model rather than to the COSO's one. Also, the values of the statistical coefficient used in our study demonstrate that there is also a high degree of dissimilarity between COSO and CoCo models, higher than the one between Romanian regulation and COSO's model as it is also shown in the table above, we can conclude that the Romanian framework is a complex one, including a various types of characteristics and requirements needed for ensuring an effective information and communication in banking sector.

According to the literature review regarding the two international models of internal control system, there isn't any kind of assessment on which of these models is better, or which of these is good and which is bad. Starting from this argument, we could reach to the conclusion that Romanian banking system is well settled as regards information and communication, in accordance to very well known international models and, also, to the international supervising authority that we should not forget - the Basle Committee on Banking Supervision.

In the end we need to mention the limitations of our study. First of all, we should not forget that that our empirical research only approaches formal harmonization in the area of internal control systems, more exactly regarding information and communication – the analyzed issue. In order to diagnose not only the existence of a “system” for information and communication, but also the functionality of it we need to go deeper and to continue our research. Only an empirical analysis on insights of the banks internal controls, based on the information provided by credit institutions, would show the degree to which the foresights of the international models of control, which seem to have been assumed by the national regulation, are actually put into practice and respect their purpose. These would show the level of material harmonization which should be analyzed in correlation to the formal one, which was the subject of this study. So, all these offer us outlooks of future research.

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