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Growth and Development in the Moroccan Banking System

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Abstract: *The banking system has withheld since a long time the attention of economists following the place and role played on the economic and social level. As well, the financial crises over the past twenty years have revived research on understanding the origin of the operational world of cycles of economic activity. In this sense, the work who are interested in the study of the relationship between the Economic and the banking system, introduce several factors which bring us back to other theories relating to the concepts of social capital, psychological and to take account of the situation of the economic system and the opening of the financial system. The objective of our empirical study is to contribute to the study of the impact of the conjuncture on the banking system and to see if there is really a relationship between the economic situation and the Moroccan banking system. We have adopted a quantitative methodology to carry out our empirical study, using econometric methods to meet our study objective. The empirical results obtained allow us to see that the economic situation and the banking system are linked by the causal relations in the Granger sense in the short term. On the other hand, the application of other tests did not allow us to conclude that there is a relationship between the economic situation and the banking system for the Moroccan case. Thus, according to the results obtained from the tests carried out, we believe that we can not go further in our analysis in order to explain the relationship between the banking system and the economic situation expressed by the variables processed.*
Keywords*: Growth, Bank, economic conditions, Morocco, African economy, financial system, banking system, economic indicators, banking indicator, financial cycle, economic cycle, fluctuations and economic equilibrium, correlation, causality relation.*

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I. Introduction

This article[1] discusses the relationship between the economy and the banking system, which depends on the overall economic context, the structure of the economy and the cycles that characterize each period in an economy. However, each cycle depends on the socio-economic system that differs from cycle to another one in history, depending on the structure and characteristics of the economic structure of each country. These latter, are questioning the role and impact of economic conditions[2] on the banking system. Indeed, the financial system and precisely the banks play an important role in the functioning and cyclical situation by their participation in supporting the economy and the integration of the macroeconomic balance. Nevertheless, economic debates[3], which have marked the history of economic thinking, have focused on the importance and role of the financial system (banking system and stock markets), as well as the relationship between the financial sector and economic growth.The work of Juglar (1860), Summer William (1896), Aureus (1939), Gerschenkron (1962), Colling (1962), and Rondo Cameron (1967) deal with the origins of the bank at the beginning of industrialization. According to the latter, the proliferation of the number and variety of financial institutions, the growth of the monetary ratio and the banking assets on total output would be a universal characteristic of the process of economic development[4]. Other authors[5] argue that financial intermediation affects economic activity globally through two essential channels. The first concerns the accumulation of capital with consequences on the rate of accumulation. The second is technological innovation aimed at improving production processes. As a

[1] This article is the result of our doctoral research work supported in November 2016 at the FSJES Salé Mohammed V University in Rabat under the theme: Economic conditions and Moroccan banking system over a period of study from 1980 to 2013, doctoral thesis in sciences Economic factors; November 2016.
[2] The economic situation is driven by movements that can not necessarily be in the economic system.
[3] Between the supporters of the Banking Principle under the direction of Thomas Tooke and Stuard Mill, who oppose those of the Currency Main in the mid-nineteenth century in England.
[4] De Lima P., *Economie bancaire et croissance économique*, Paris, Editions Dunod, 2012, p.5
[5] Dornbusch R. & Reynoso A., "Financial Factors in Economic Development", *NBER*, Paper No. 2889, March 1989

result, the banking system created a rate encouraging savings and resource allocation in order to invest in profitable projects.

The theory of money, bank credit and financial markets is still a very important theoretical challenge, since social relations involve the involvement of money in a direct or indirect way. These relationships generate systematic constraints exerted by central banks in order to grasp and control the complexity of social knowledge.

Indeed, as Huerta de Soto points out: "*The intellectual backwardness of the monetary and banking theory also has serious repercussions on the evolution of the world economy, the proof of which is that, despite the theoretical and Governments, modern economies have not yet managed to get rid of recurring stages of expansion and recession. A few years ago, despite all the sacrifices made to restore Western economies in the In the 1970s, the same errors of financial, banking and monetary mess were invariably eroded, and this inevitably led to a further large-scale global economic recession in the early 1990s, of which the western economic world only recovered recently*."[6]

Moreover, at the end of 1997, a serious financial crisis affected the main Asian markets and threatened to spread to the rest of the world, and the world's major economies entered the recession in 2001.

Yet the situation in the global economy was marked by accelerated growth for the world's major economies until 2007. This situation was suddenly immobilized by a financial crisis (including the *subprime* crisis). Of course, this *subprime* crisis has posed a fundamental question about the role and contribution of banks and finance in explaining economic growth and the overall economic situation.

In this work, both theoretical and empirical research[7] is conducted. Indeed, the relationship between economic conditions and the Moroccan banking system at the macroeconomic level should be sought, based on macroeconomic and financial indicators. It is also a question of explaining the role and the impact of the conjuncture on the performance and productivity of the Moroccan banking system.

In order to understand the mechanisms linking the banking system and the economic situation, we will take a closer look at the banking system and theoretical links with the economic situation.

Our research also tries to elucidate the consequences of the economic situation, the characteristics of the banking system, its liquidity and its efficiency. The basic assumption of this work is that the financial system as a whole contributes positively to economic growth based on the work of authors such as Robinson (1952) or Shaw (1973). This idea is supported by different works[8], theoretical developments and empirical evaluations have revealed the preponderant role of the financial system in the process of growth and development.

To understand and realize the objective set in our thesis, we used an empirical test. Our empirical analysis focuses on the statistics concerning Morocco over a study period from 1980 to 2013 concerning banking system variables and macroeconomic indicators through the following points:

- ✓ A statistical correlation study of the variables representative of the banking system and those representing the economic situation. The aim of this first technique is to detect purely statistical links between the two spheres;
- ✓ A causal study between the financial sphere (represented by the banking indicators) and the real sphere;[9]
- ✓ A co-integration study to quantify the long-term effects of the banking system on economic growth;
- ✓ The basic idea behind this methodological choice is to identify the problematic empirically using different techniques that seem complementary to one another. Moving from one technique to another, with at each stage confirmation or a reversal of the assumptions adopted at a defined empirical level, allowed us to take advantage of the advantages offered by each of the techniques used throughout our job.

[6] Translated by the autor : Huerta de Soto J., *Monnaie, crédit bancaire et cycles économiques*, Editions L'Harmattan, Paris, 2011, p. 120 -121

[7] There are several methods of empirical analysis in economics, but essentially two methods are used which are best used in practice:

- ✓ Structural modeling: examining the influence of one variable on another using the data provided by the observations, using a model specifying the channels through which this influence is exerted;
- ✓ Reduced form: that examination is performed simply by directly observing the relationship that unites them.

[8] With the work of King and Levine (1993), where financial intermediaries stimulate capital accumulation and increased factor productivity and hence economic growth, and argue that financial development is an important determinant of economic growth . Levine (1997) showed that financial intermediaries improve risk management and ease of financial transactions. In addition, Galindo et al (2007) highlights the role that financial liberalization can play in the development of banks by suppressing the administrative fixation of interest rates and efficient allocation of credit.

[9] It is important to carry out this type of study in order to demonstrate the links between them and to study the nature of the relationships between their representative variables, especially since there is no consensus the impact of financial development on economic growth.

II. Economic Conditions And The Moroccan Banking System: Empirical Study

The development that follows is an empirical study based on a multi - methodological study of the impact of the economic situation on the banking system in the case of Morocco. The period chosen for the study spread from 1980 to 2013 for the variables of the banking system and that of the variables representing the conjuncture. On the other hand, throughout this work, we will present the main elements of the economic situation and of the banking system, which make it possible to identify and give a simplified representation of the existing relationship in the form of a model containing a System of data in terms of selected variables and the relationships between these variables in order to meet the purpose of our work.

We will attempt to conduct our study through three essential steps as follows:

- ✓ A statistical correlation study of the variables representative of the banking system and those representing the economic situation. The aim of this first technique is to detect purely statistical links between the two spheres;
- ✓ A causal study between the financial and the real spheres. It is important to carry out this type of study in order to highlight the links between them and to study the nature of the relationships between the representative variables in order to define the variables that play a decisive role in the functioning of the banking system On the one hand, and the banking variables which cause the functioning of the conjuncture on the other;
- ✓ And a final study based on the cointegration test in order to quantify the long-term effects of the economic situation on the banking system.

The methodological choice is based on a logic which consists in seeking to understand and explain the functioning and the impact of the economic situation on the Moroccan banking system, based on empirical study and using different techniques which appear to us Complementary to each other. Moving from one technique to another, at the same time as at each stage, a confirmation or a reversal of the assumptions adopted at a defined empirical level. To reinforce our analysis, we have tried to take advantage of the advantages offered by each of the techniques used throughout our study.

Table 1 : The variables used in the empirical study

Name of the indicator	Abbreviation
Measures of the conjuncture	
Industry, value added (% of GDP)	va_ind
External balance of goods and services (% of GDP)	Bebs
GDP growth (% annual)	cPIB
Remittances of workers' funds and earnings of employees, received (% of GDP)	Eftrs
Gross fixed capital formation (% of GDP)	fbcf
Inflation, consumer price (% annually)	if_Co
Foreign direct investment, net inflows (% of GDP))	IED
Measures of the banking system	
Domestic credit provided by the banking sector (% of GDP)	credit
Domestic credit provided to the private sector (% of GDP)	creditprive

2.1. Study of the correlation between the conjuncture and the banking system

In this section we will proceed to the calculation of the correlation coefficients and the confidence intervals asserting the reliability and robustness of the said coefficients using the chronological data.
We present the correlations between the variables representing the banking system and the variables representing the economic situation. We are interested only in the analysis of the correlation between the series representing the banking system and those representing the economic situation.[10]

2.1.1. Correlation relationship between domestic credit provided by the banking sector (% of GDP) and economic variables

[10] The values of the Student t statistic calculated are in italics.
* / ** / ***: the correlation coefficient is respectively significant at 1%, 5% and 10%.

Based on the results of the correlation test shown in Table 2, we find, with domestic credit provided by the banking sector as a percentage of GDP, the existence of three variables that are significant over several thresholds: Represents the external balance of goods and services in relation to GDP (BEBS) at the 10% threshold, the variable representing the value added of the industrial sector (va_ind) which is significant at the 5% threshold and the variable representing the growth of the gross domestic product (cPIB) at the threshold of 1%. The other variables used to explain the variables of the conjuncture are not significant.

Table 2: Correlation relationship between domestic credit provided by the banking sector (% of GDP) and the variables of the economic situation

Indicator	CPIB	BEBS	IF_CO	EFTRS	FBCF	IED	VA_IND
	-0,806415	-0,887093	-0,013536	-0,170779	1,061606	0,535605	1,632408
Credit	***-3,621445****	***-1,773091*****	***0,024741***	***-0,149916***	***1,501335***	***0,445855***	***2,553845****

1.1.2. Correlation relationship between domestic credit provided to the private sector (% of GDP) and economic variables

The second relationship allowed us to identify three significant variables that explain the relationship of the variable representing the banking sector, namely "domestic credit provided to the private sector as a percentage of GDP".

Thus, GDP growth and Gross fixed capital formation as a percentage of GDP (GFCF) are significant at the 5% threshold. On the other hand, the variable "Remittances of workers and remuneration of employees, received as a percentage of GDP" (EFTRS), is significant at the 10% threshold.

Table 3: Correlation Relationship of domestic credit provided to the private sector (% of GDP) and economic variables

Indicator	CPIB	BEBS	IF_CO	EFTRS	FBCF	IED	VA_IND
	-0.327182	-0.527827	-0.048149	-0.350472	0.854014	-0.013041	0.603531
creditprive	**-2.429049****	**0.0638*****	**-0.159141**	**-0.558709**	**2.277356****	**-0.019560**	**1.615296**

The main objective of these correlation tests is to detect a certain relationship between the different variables of the conjuncture and the different indicators of the banking system, which allow us to give a meaning to the models even with certain variables that, are not significant. Subsequently, we perform tests on time series in order to analyze the relationship in the case of Morocco. We study the causality of the variables in order to see the impact of the variables on each other. Second, we focus on verifying the quality of the relationship: is it misleading or not?

2.2. Study and results of causality tests in the sense of Granger

Regression is a tool to summarize a statistical link between variables. When considering empirical behavioral studies, the endogeneity of explanatory variables is often problematic. In our thesis project, it is therefore important to ask the question of causality between the variables explaining the conjuncture and the banking system. In this section we try to investigate and determine the existence of a causal relationship in a statistical sense between the conjuncture and the banking system. In this section, our goal is a causality study in the sense of Granger (1969).

We shall compare the results obtained which are presented in the tables below with the values of F extracted from the Fisher table with p and (T-2p-1), T = 34, the degrees of freedom, at the threshold of 5 %.

In the following, we present the results obtained for all the variables of the banking system as well as the variables of the economic conjuncture of our sample. We applied the Granger procedures on all variables.

In each table, the first column represents the indicators of the conjuncture, the second column reports optimal delay of the variable that explains the banking system. In the third column, we report the optimal delay of the variables representative of the economic situation. The fourth column presents the results of the causality tests by considering the variable of the economic conjuncture as explained variable (model 1) as well as the causality decision obtained. The fifth column shows the same results by taking the variable of the banking system as the variable explained (model 2).

i. Results of Granger's causality tests between "domestic credit provided by the banking sector (% of GDP)" and the various variables representing economic conditions

The results obtained in the table show a causal relationship ranging from the variable representing the growth of gross domestic product (cPIB) to the variable representing "domestic credit provided by the banking sector (% of GDP)".

The causality of "domestic credit provided by the banking sector (% of GDP)" (credit) is present for foreign direct investment, net inflows (FDI).

Table 4: Granger causality tests between the "domestic credit provided by the banking sector (% of GDP)" and the variables of the economic situation

Indicator of the conjuncture (Xi)	Optimal lag in domestic credit provided by the banking sector (% of GDP)	Retard optimal de la variable de la conjoncture Xi	The variable of the conjuncture Xi cause in the sense of Granger Domestic credit provided by the banking sector (% of GDP)		Domestic credit provided by the banking sector (% of GDP) cause in the sense of Granger the variable of the conjuncture Xi	
			F de Fisher	Décision	F de Fisher	Décision
CPIB	1	niveau	4,29211*	Oui	0,00705	Non
Bebs		1	0,52746	Non	0,08273	Non
FBCF		1	1,25211	Non	0,07054	Non
VA_IND		1	1,05827	Non	1,60224	Non
IF_CO		niveau	1,33367	Non	0,67388	Non
IED		1	0,27526	Non	3,48965*	Oui
EFTRS		1	0,2049	Non	1,03414	Non

ii. Results of Granger's causality tests between "domestic credit provided to the private sector (% of GDP)" and the various variables representing economic conditions

Table 5: Granger's causality tests between "domestic credit provided to the private sector (% of GDP)" and the variables of the economic situation

Indicator of the conjuncture (X_i)	Optimal lag in domestic credit to the private sector (% of GDP)	Retard optimal de la variable de la conjoncture Xi	The variable of the conjuncture Xi cause in the sense of Granger Domestic credit provided to the private sector (% of GDP)		Domestic credit provided to the private sector (% of GDP) cause in the sense of Granger the variable of the conjuncture Xi	
			F de Fisher	Décision	F de Fisher	Décision
CPIB	1	niveau	3,36828*	Oui	0,32389	Non
Bebs		1	0,67686	Non	0,4269	Non
FBCF		1	0,87782	Non	0,38147	Non
VA_IND		1	2,82618	Non	1,21369	Non
IF_CO		niveau	0,4097	Non	0,30826	Non
IED		1	0,21246	Non	3,10347	Non
EFTRS		1	0,01335	Non	0,40846	Non

The results obtained in the table show a causal relationship ranging from the variable representing the growth of the gross domestic product (cPIB) to the variable representing "domestic credit provided to the private sector (% of GDP)".

On the other hand, there is no causality of "domestic credit provided to the private sector (% of GDP)" (creditprive) to variables representing economic conditions.

2.3. Analysis by cointegration

The previous sections highlighted the relationship between the variables of the banking system and the variables representing the conjuncture taken two by two (correlation study and causality study). Despite the results obtained, we are able to confirm the limit of the procedures used in these analyzes. In this section, the emphasis is on verifying the quality of the relationship: is it misleading or not? The analysis of the long-term relationship between the variables of the banking system and the variables representing the conjuncture will be estimated using the cointegration technique. This technique allows us to exploit the temporal dimension by seeking to determine a long-term relationship between the variables present in our study. In the following, we present a description of the cointegration technique: the Johansen approach (1990).

In a first step, we apply the stationarity test (Dickey-Fuller ADF test) of the variables which indicate that they are stationary in the first difference, and therefore integrated in order 1, I(1). We then use a cointegration test to determine the existing cointegration relationships between the variables.

Once these relationships are determined, we can estimate a Vector Error Correction Model. The final step results in the analysis of the results of the estimation of the VECM model.

The optimal number of delays attributed to the model is "1", and is given in the appended table which allows to maximize the criteria (LR, FPE, SC, HQ). In addition, the series were integrated in order of 1, according to the Dickey-Fuller tests (see Dickey-Fuller test table (ADF) in appendix 3)

2.3.1. Estimation of the model linking credit with the variables of the conjuncture

The first model consists of estimating the relationship between the variable "domestic credit provided by the banking sector (% of GDP)" and the variables of the conjuncture chosen for the cointegration

relationship. The optimal number of delays attributed to the model is "1", and is given in the appended table which allows to maximize the criteria (LR, FPE, SC, HQ). In addition, the series were integrated in order of 1, according to the Dickey-Fuller tests (see Dickey-Fuller test table (ADF) in appendix 3) The following table shows the results of the estimation relationship. The adjustment factor is a negative sign, on the other hand, the variables of the conjuncture are not significant to explain the variable of money and quasi-money (M2) (% of GDP) using a vector model with correction d (VECM: Vector Error Correction Model), in addition to the adjusted coefficient of determination, R^2, is 22.20%.

Table 6 : Result of the VECM between credit and the variables of the conjuncture

variable	Adjustment factor	D(CREDIT(-1))	D(BEBS(-1))	D(FBCF(-1))	D(EFTRS(-1))	D(IED(-1))	D(VA_IND(-1)	C(8)	R^2
D(CREDIT)	-0.000231	-0.095466	-0.177212	-0.866888	0.427774	-1.207258	-1.425227	2.632552	0.221959
	0.000238	***0.236729***	***0.785478***	***1.032421***	***1.490516***	***1.300777***	0.860415	1.327671	

2.3.2. Estimation of the model linking "Domestic credit provided to the private sector (% of GDP)" and the variables of the conjuncture

The second model is to estimate the relationship between the variable "domestic credit provided to the private sector (% of GDP)" and the variables of the conjuncture chosen for the relationship of cointegration.
The optimal number of delays attributed to the model is "1", and is given in the appended table which allows to maximize the criteria (LR, FPE, SC, HQ). In addition, the series were integrated in order of 1, according to the Dickey-Fuller tests (see Dickey-Fuller test table (ADF) in appendix 3) The following table shows the results of the estimation relationship. The adjustment factor is a negative sign, but the variables of the conjuncture are not significant to explain the variable of "domestic credit provided to the private sector (% of GDP)" using a vector model with correction (VECM: Vector Error Correction Model), in addition to the adjusted coefficient of determination, R2, is 26.15%.

variable	Adjustment factor	CREDITPRIVE(-1)	D(BEBS(-1))	D(FBCF(-1))	D(EFTRS(-1))	D(IED(-1))	D(VA_IND(-1)	C(8)	R^2
	-0.014178	0.274632	0.048494	-0.403883	0.602926	-0.754239	-1.061823	1.316056	0.261521
D(CREDITPRIVE)	**-0.962112**	***1.298414***	***0.117478***	***-0.703148***	***0.748063***	***-1.082386***	-2.588372	1.755285	

III. Conclusion

The main objective of this work was to verify the empirical application of theoretical approaches. We have carried out various correlation tests, with the essential aim of detecting a certain relationship between the various variables of the conjuncture and the banking system. We then proceeded to other tests to verify the relationships found. However, the use of the causality test was to detect the cause and effect within the relationship between the variables representing economic conditions and the indicators chosen to define the banking system. The question we have tried to answer is summarized as follows: What is the economic situation causing the banking sector? Or is it the banking sector that is causing the economy? Or is there a mutual impact between the variables of the conjuncture and the variables of the banking sector? Or is there no causal relationship between the variables?

The results obtained in relation to our empirical study have shown that the economic situation and the banking system are linked by Granger causality relations in the short term. The totalities of the causal relations are verified in one direction only. On the other hand, the application of the cointegration method in order to study the existing relationship between the banking system, through its various variables, and the variables of the economic conjuncture, led us to conclude that the use of the technique of cointegration is not validated for all estimated or tested models. Thus, according to the results obtained from the tests carried out, we believe that we can not go further in our analysis in order to explain the relationship between the banking system and the economic situation expressed by the variables dealt with in the Moroccan context.

Annex 1: The database of variables used to measure the banking system

Date	credit	Creditprive
1980	37,61721359	15,00203661
1981	41,74420615	16,33317889
1982	42,4690191	16,58510049
1983	47,03387895	17,83809173
1984	45,46038182	18,23291204
1985	45,14485819	18,28590894
1986	42,30577441	18,28590894
1987	44,73291019	18,28590894
1988	41,55115887	18,28590894
1989	43,18866253	18,28590894
1990	38,45665197	17,56638508
1991	40,28530269	20,75147484
1992	44,10291838	23,46404655
1993	46,71662295	25,38992667
1994	46,3715539	25,12815281
1995	52,50211777	28,62721264
1996	48,98557796	27,61867268
1997	73,94524098	42,8351314
1998	73,5712892	43,8646149
1999	74,94846869	47,69861052
2000	81,14270898	51,00271747
2001	70,02268986	44,5540354
2002	70,71842503	43,38492549
2003	68,1674947	42,40679882
2004	67,69020006	42,60492871
2005	72,56772661	46,12047368
2006	77,68473685	48,62024828
2007	90,41960089	58,37398411
2008	97,86061135	63,17125413
2009	99,93245066	64,68414208
2010	104,2451328	68,66511079
2011	111,1340301	71,98555607
2012	115,4525199	73,40270769
2013	115,5351215	70,16907759

Annex 2: The database of variables used to measure economic conditions

Date	Bebs	cPIB	va_Ind	Eftrs	fbcf	IED	if_Co
1980	-8,332027814	3,642164853	30,48554312	4,999881305	25,39255974	0,424188551	9,408379474
1981	-11,83749576	-1,62643809	33,83266714	5,926097979	29,63950729	0,342411848	12,49252839
1982	-11,99013046	10,17345956	32,18534214	4,970693239	29,43959278	0,465304305	10,5278073
1983	-6,962298412	0,785012945	32,85197835	5,861975481	26,01535391	0,294851696	6,207935389
1984	-9,074599132	6,269478521	33,00274845	6,165576557	24,19385843	0,331585945	12,44756933

1985	-8,288898313	5,370076442	32,40645356	6,803592585	24,21529028	0,139742708	7,728638901
1986	-6,148692647	9,641771922	29,39303483	7,475663619	22,52565133	0,002933243	8,733559187
1987	-4,447636035	-1,266872219	30,52544288	7,691857821	21,32027612	0,288401227	2,698739977
1988	0,167142214	12,18991411	30,59406734	5,296133283	21,42980769	0,343679997	2,369055055
1989	-5,149410284	2,836287948	30,06946314	5,288797615	23,9676472	0,661041443	3,259969492
1990	-5,487917746	2,788213602	30,35401992	6,956970233	25	0,572560716	6,782594015
1991	-5,056493932	7,547347942	28,57409703	6,41745877	23,8896563	1,023593762	7,986166008
1992	-5,949717812	-2,907529039	29,78544491	6,773719338	23,82957569	1,318482911	5,740246629
1993	-5,5929633	-1,003258086	29,77098603	6,500586859	24,4443255	1,630766984	5,18311396
1994	-5,318979368	11,49440284	27,48041752	5,361225441	22,44236311	1,616305697	5,14167153
1995	-6,289068528	-6,328695469	28,73049054	5,296640606	22,98496934	0,248457165	6,123581648
1996	-3,162202175	13,45977869	27,32484853	5,232646601	20,71927208	0,184642512	2,986809228
1997	-3,080758288	-2,011627139	29,66497221	5,0809266	22,0199431	0,009577088	1,038198951
1998	-3,693692522	7,979380864	27,70937262	5,024129637	23,3893102	0,029657765	2,753113308
1999	-3,316999043	0,529417121	28,20459351	4,878211133	25,11493471	0,006674042	0,684782609
2000	-5,369095101	1,592567672	29,1053422	5,83733982	25,98041085	0,596261719	1,894634568
2001	-2,530710456	7,551951989	27,56814137	8,643998067	24,84439566	0,381284233	0,619801875
2002	-2,108767786	3,316035915	27,33350008	7,118825276	25,21630978	0,195864854	2,795619669
2003	-2,82838701	6,316967049	27,93004975	7,253561143	25,1146176	4,641830228	1,167733675
2004	-4,953714246	4,80186641	28,52218245	7,411734918	26,2802095	1,382056625	1,493444034
2005	-5,601511525	2,97851241	28,21970816	7,709894795	27,52734143	2,806621998	0,98264166
2006	-5,477670159	7,759852155	27,15156734	8,305318804	28,13851014	3,749079214	3,28476167
2007	-9,115559493	2,705774383	27,31425912	8,946965088	31,24896552	3,756399938	2,042085127
2008	-13,39115009	5,587056082	30,31896351	7,756590384	33,02131255	2,774759237	3,707317073
2009	-10,98834185	4,758347025	28,59067575	6,896081527	30,87955612	2,167372721	0,994825964
2010	-9,83101471	3,642974764	29,67405434	7,075570129	30,68029962	1,366770421	0,987355331
2011	-13,11040148	4,985647093	30,24653194	7,313993504	30,69920895	2,541405151	0,92236032
2012	-14,39775612	2,669166448	30,33253878	6,785875774	31,28216779	2,963342038	1,278741213
2013	-13,21370179	4,381457983	28,531095	6,627489171	30,16438071	3,236757525	1,88750188

Annex 3: Table of ADF test results of banking variables and of the conjuncture in level and first difference

	ADF	
	In Level	First difference
Banking system variables		
credit	1.888109	-6.450170
creditprive	2.411116	-4.346290
Variables of the conjuncture		
va_ind	-0.393205	-10.10253
BEBS	-0.384129	-5.929314
FBCF	0.699101	-5.041384

EFTRS	-0.246790	-6.396969
IED	-1.373187	-8.865637
IF_co	-3.795591	
CPIB	-5.266293	

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