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RESEARCH ARTICLE

Sovereign Risk and Banking Stability: A Two Way Avenue

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Abstract

The study aims at investigating the interplay between the sovereign risk and the banking stability, by constructing a financial satellite based on systems of simultaneous equations method. The econometric results confirmed that the quality of banking book is highly sensitive to CDS rate developments. Additional challenges could be raised via the net interest income channel, as empirical findings suggest a higher sensitivity of interest expenses to changes in sovereign risk than that of interest income. Furthermore, the risk of entering into a vicious spiral is not negligible, since material feedback effects from banking stability to sovereign risk were identified. The analysis highlighted also a possible similarity of pass-through features between the CDS rate and policy rate on money market interest rates, in terms of both impact interval and level. One policy implication would perhaps be to add the CDS rate among the macro-stability indicators, and consequently to develop a structured and permanent CDS targeting process. This study made also an attempt in this direction, taking into consideration both internal fundamentals and possible regional contagion effects.

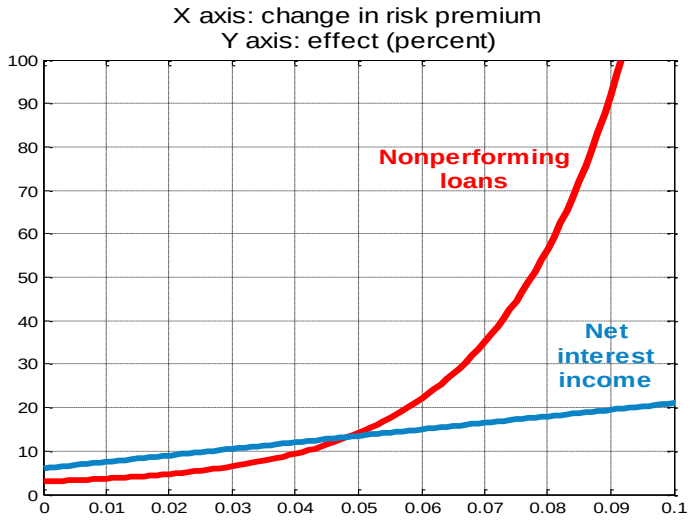
Keywords: *Banking stability, CDS rate, Net interest margin, Nonperforming loans ratio, Sovereign risk.*

Introduction

The ongoing financial crisis is showing that the fates of a country's banking sector and of its public finances are strongly intertwined. On the one hand, the financial safety net is backstopped by national treasuries so that a banking crisis entails potentially huge fiscal costs. Moreover, even though a financial turmoil does not entail bank failures that might endanger financial stability, the real sector may be faced with a hard landing. Consequently, the budget revenues suffer materially, while the expenses are driven by inertia. On the other hand, the yields of government bonds are indicative for interest rates within an economy. Should higher sovereign risk premium be required by investors, non-financial companies and households alike would face higher financial obligations. Furthermore, government debt is a key asset category in banks, so a sovereign debt crisis can cause widespread bank distress.Understanding the linkages between sovereign risk and the banking sector and how policy makers should deal with these linkages is of critical importance [1]. Even though stylized facts on the spillovers between sovereign risk and financial stability were widely discussed by market participants and academics alike, empirical investigations are at their infancy, especially in emerging markets. This section goes to the heart of the academic discussion on sovereign risk and financial crises. Michael Davies & Tim Ng [2] assessed the impact of sovereign credit risk on bank funding conditions. Adrian Blundell-Wignall [3] explored the implications of the interaction between bank losses and fiscal deficits on the one hand, and the feedback that any debt haircuts anticipated by markets could have on bank solvency through trading portfolio. Empirical findings on how the sovereign and banking crises are serving to exacerbate each other, drawing on the intense interaction between bank CDS and sovereign CDS spreads. The paper elaborated on the interplay of market concerns about the jump-to-default of sovereign risks and on the impact the increased financial volatility might have on banks. ECB [4] reported increasing risks to financial stability in euro area, stemming from sovereign risk crisis and its interplay with the banking sector amid an environment of weakening macroeconomic growth prospects.Besides funding strains and significantly lower bank equity prices, contagion and negative feedback between the vulnerability of public finances, the financial sector and economic growth, ECB warns on higher credit risks in the banking book and second-round effects through a reduced credit availability in the

economy. The latter challenge represents the core of the analytical modeling of this research work. The output aimed here is to construct a quantitative framework for investigating the reciprocity between the sovereign risk and banking stability development, including the feedback effects via nonperforming loans.The remaining of the paper is structured as follows. Section two describes the transmission mechanism of sovereign risk to both nonperforming loans ratio and net interest margin in Romania. The corresponding estimation method is also presented. Section three outlines the data employed in the study and describes both the economic rationale and the statistical evidence that led to the selection of the explanatory variables. Section four gives an overview of the key empirical issues on constructing a financial satellite model which favours the derivation of the impact of CDS rate on banking stability. The final section presents the main findings and avenues for further research work.

Methodological Framework



Note: the provided figure is theoretical example using exponential function for nonperforming loans and linear representation for net intrest

Fig. 1: Non performing loans versus net intrest income and rising risk premium

The impact of sovereign risk on banking stability is assessed in terms of the effects of CDS rate on both nonperforming loans ratio and net interest margin. The nonperforming loans reaction to shifts in risk premiums (in broad sense) is defined by an exponential function. We basically assume that a second increase of risk premium having the the same dimension compared to the first one would generate a larger effect. The approach is eligible in terms of the economic rationale stating that the relationship between bank loan default rates and the economic context takes a non-linear form [2, 5]. This model is generally valid not only in the case of sovereign risk premium (Fig. 1), but also for other components of credit risk margin, such as expected losses due to sectoral developments in real economy [6]. The functional link between the dynamic of net interest income and that of risk premium is considered linear. The economic theory indicates a positive relationship. The reason behind this thinking is that banks adjust risk premiums hoping to offset the effects of growing provision expenses by higher net interest revenue. However, this is not always validated. Depending on the banking sector particularities of financing structure, the interest rate expenses could rise more than interest income. Such a development was seen in the case of banks over-exposed to the money market funds during the transatlantic financial crisis. When the share of interbank resources in the balance sheet is high, the sensitivity of interest expenses to sovereign risk is generally larger than that of the interest income. Furthermore, should the competition on both attracting savings and refinancing loans be strong, the adjustments in the interest rate on liabilities become larger than those on assets, pushing down the net interest income. The transmission mechanism of sovereign risk to the quality of the credit institutions' banking book and P&L comprises three stages (fig. 2). Furthermore, a fourth stage was considered for emphasising the feedback effects from banking stability to sovereign risk.

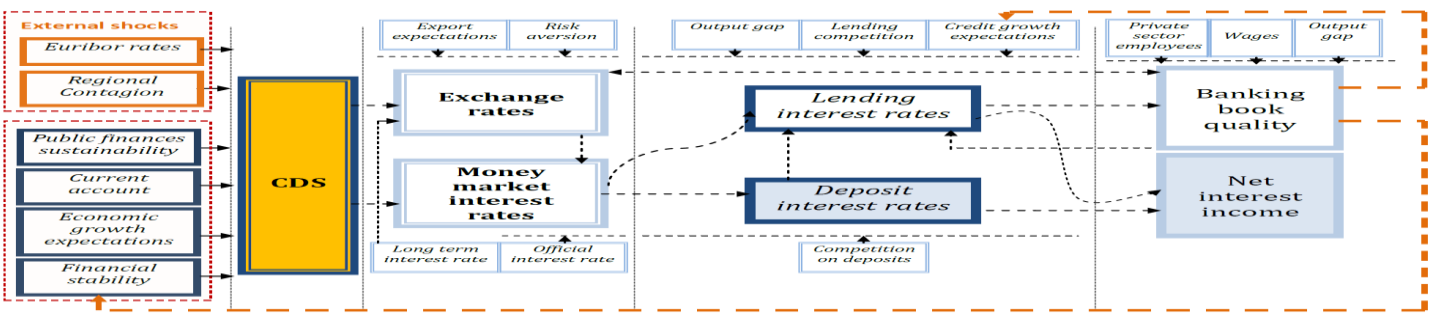


Fig. 2: Transmission mechanism and feedback effect

The first stage corresponds to the impact of CDS developments on exchange rate and money market rates. In both cases it is assumed that the relationship is positive. Hence, whenever the CDS increase the exchange rate depreciates and the ROBOR rates increase. The impact through financial assets' prices was not considered in the framework. Since the bulk of securities acquired by credit institutions are treasury bills held-to-maturity, no material effects on financial statements of banks would be expected through mark-to-market valuation.

The second stage reflects the further effects on lending and deposits' interest rates. These variables have effect later on both the quality of the banking book and the net interest income (third stage). Both historical and foreseen developments were considered. The expectations on the developments in key variables are deemed rational in the short term, while the impact of historic development might have a lag of up to one year.

Moreover, feedback effects from banking stability to sovereign risk were also considered (stage four), since the deterioration of the banking book quality would raise concerns over creditworthiness of the sovereign.

In order to ensure a robust identification of the impact of CDS rate over banking stability, the operational framework assumed to establish a simplified financial satellite by modelling the banking performance indicators together with the changes in CDS rate, exchange rate and interest rates. The corresponding system of equations is given by the relation (1).

$$\begin{cases} \Delta ER_t = \delta_1 \times CDS_{t-s} + \sum_{i=1}^{n} \alpha_{1i} \times M_{t\pm l_{2i}} + \sum_{j=1}^{m} \beta_{1j} \times B_{t\pm l_{2j}} + \varepsilon_{ER} \\ \Delta IR_t = \delta_2 \times CDS_{t-p} + \sum_{i=1}^{n} \alpha_{2i} \times M_{t\pm l_{1i}} + \sum_{j=1}^{m} \beta_{21j} \times B_{t\pm l_{1j}} + \varepsilon_{IR} \\ \Delta(\log(NPL_t)) = \sum_{j=1}^{p} \alpha_{3j} \times d(M^{j}_{t-c4}) + \sum_{k=1}^{m} \beta_{3k} \times d(B^{k}_{t-a4}) + \varepsilon_{NPL} \\ \Delta(NIM) = \sum_{k=1}^{m} \beta_{4k} \times d(B^{k}_{t}) + \varepsilon_{NIM} \\ \Delta CDS_t = \sum_{b=1}^{s} \gamma_b \times FACT\_EXT_{t\pm l_b} + \sum_{a=1}^{r} \delta_a \times FACT\_INT_{t\pm l_a} + \varepsilon_{CDS} \end{cases} \quad (1)$$

The first equation of the system structures the functional form for exchange rate (ER) determinants. Along with CDS, macroeconomic and banking variables were also considered. A similar philosophy was used to describe the second equation, which synthesises the structure of each component of the interest rates block (IR). Under this setting are included the functional forms for money market, lending, and deposits interest rates. The next two equations of the system represent the explanatory functions for the nonperforming loans ration (NPL) and net interest margin (*NIM*). The latter equation is structured only on banking variables, namely lending and deposits interest rates. The fifth equation is aiming to endogenize the CDS dynamic based on both internal and external factors.

We assume linear relationships and the dependent variables incorporate information on expectations as well as historic developments ($t \pm l$), except for the NPL equation, where the exponential transformation was used. Under this setting, the functional form of the model captures both the elements to which investors display a proactive/forward-looking behaviour and the indicators to which market operators exhibit a reactive/adaptive stance.

The individual impact of the determinants on the simultaneous movement of dependent variables was assessed based on first differences by employing the Seemingly Unrelated Regression (SUR) method, proposed by Arnold Zellner in [7]. SUR is a generalization of a linear regression model that consists of several regression equations, each having its own dependent variable and potentially different sets of exogenous explanatory variables. The model can be estimated equation-by-equation using standard ordinary least squares (OLS). Such estimates are consistent, however generally not as efficient as the SUR method, which amounts to feasible generalized least squares with a specific form of the variance-covariance matrix. The SUR model is estimated using the feasible generalized least squares (FGLS) method. This is a two-step method where in the first step we run ordinary least squares regression. The residuals from this regression are used to estimate the elements of matrix Σ: $\hat{\sigma}_{ij} = \frac{1}{T}\hat{\varepsilon}_i'\hat{\varepsilon}_j$. In the second step, we run generalized least squares regression using the variance matrix $\hat{\Omega} =$ [illegible]. The output is the following: $\hat{\beta} = \left[X'\left(\hat{\Sigma}^{-1}\otimes I_T\right)X\right]^{-1}X'\left(\hat{\Sigma}^{-1}\otimes I_T\right)y$. This estimator is unbiased in small samples assuming the error terms ε_{it} are symmetric distribution; in large samples it is consistent and asymptotically normal with limiting distribution $\sqrt{T}\left(\hat{\beta}-\beta\right) \xrightarrow{d} \mathcal{N}\left(0, \left(\frac{1}{T}X'\left(\Sigma^{-1}\otimes I_T\right)X\right)^{-1}\right)$.

The estimation procedure follows the approach that was suggested by the stylized representation in figure 2. A backward procedure was applied.

The Data Employed

The empirical analysis uses quarterly information covering Q4 2003 – Q3 2011 period. The starting point was chosen based on available information on CDS data for Romania. It is worth mentioning that starting with Q4 2003 it is also appropriate from a data quality perspective, since this leaves behind challenges induced by the structural changes in the Romanian banking system prior to 2004. It may be asserted that 2004 saw the completion of the process of cleaning up and restructuring of the banking system, which started in 1998, when banking legislation was improved. The time frame used is, however, longer in the case of exogenous macroeconomic variables working with lags.

The sovereign risk premiums (CDS 5Y on Romania and Greece) were extracted from the Bloomberg platform, while the macroeconomic data was provided by the National Institute of Statistics (economic growth, aggregated consumption, governmental consumption, households consumption, current account on GDP, exports, imports, and gross wages). The financial stability indicators (overdue loans ratio - proxi for nonperforming loans ratio, net interest margin, credit to private sector) were provided by NBR statistics, together with exchange rate, policy rate, international reserves, money market interest rates (Robor and Euribor rates for maturities up to one year), as well as lending and deposits interest rates (both denominated in local currency and euro).

The candidate indicators for structuring the financial satellite model and their expected impact on the dependent variables together with the applied transformation are provided in Appendix 1.

Stationarity of the considered indicators was tested. All indicators were I(0) after the appropriate transformation and the first difference. Furthermore, the univariate OLS regression was used to make the first selection of variables based on statistical relevance. The applied procedure tested variables on one-by-one basis up to four lags, including the contemporary impact, for each explanatory variable. For those variables with forward looking component four leads were considered. A short list of variables was created for all equations, based on results of univariate analysis. These results are available upon request from the author in order to save space. In the next step, multivariate analysis was performed. For each explanatory variable contained in the short list maximum four of its lags and/or leads of those found statistically relevant were considered.

The impact of sovereign risk on both nonperforming loans ratio and net interest margin was assessed by a unifactorial sensitivity analysis. The working scenarios reflect a set of threats to the Romanian banking sector stability, which would materialise during Q2:2012 with rather low but similar probability of occurrence. These sources of risk have foreign origin and consist in the following potential developments:

- Sovereign risk increase amid regional contagion (exogenous shock), whose magnitude would be +3 pp in CDS rate.
- Trade balance deepening amid recession in euro zone expressed by an exogenous shock of - 5 pp in balance of trade as share in GDP.
- Financing costs increase amid inflationary pressures in euro zone expressed by an exogenous shock of + 2 pp in EURIBOR 3M.

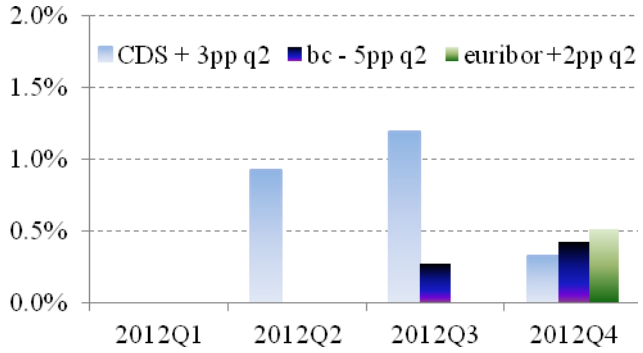
The corresponding effects are expressed in terms of deviations from the baseline scenario's output. In this respect, a sluggish economic growth and rather stable developments for the remaining macroeconomic determinants were considered.

Empirical Analysis

The operational target undertaken by this research work is to structure a functional form for modelling simultaneously the sovereign risk with indicators of the quality of banks' assets, along with net interest income developments.

The multivariate selection procedure followed the approach described in section II. Hence, the variables selected after univariate regression were introduced in the backward procedure. In order to control the robustness of estimations for each specification, the coefficients of all regressions were estimated simultaneously by using the SUR method. The estimation output is available in appendix 2.

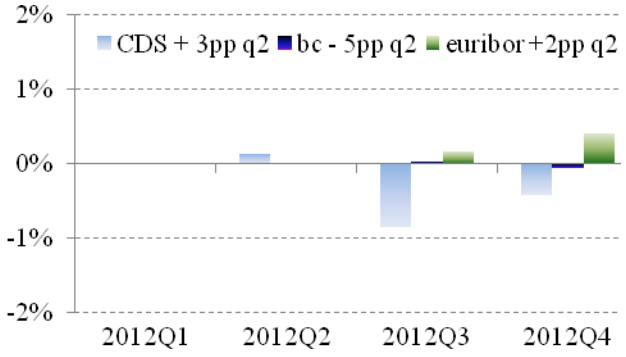
The sensitivity analysis provides evidence on the material impact of CDS developments over nonperforming loans ratio. An exogenous shock of +3 pp in CDS rate during Q2:2012 would raise instantaneously the nonperforming loans ratio with 0.9 pp more than the estimated level in baseline scenario. Furthermore, the difference increases to 1.3 pp one quarter later (fig. 3).



Source: Author's estimation

Fig. 3: Nonperforming loans ratio's sensitivity to considered scenarios (change against baseline)

Additional concerns are raised by the net interest income channel. An exogenous shock in CDS of +3 pp during Q2:2012 would squeeze the net interest income during the third quarter by approximately 0.8 pp more than the value estimated under the baseline scenario (figure 4).



Source: Author's estimation

Fig. 4: Net interest income's sensitivity to considered scenarios (change against baseline)

The negative effects seem to continue for another quarter (Q4 2012). Nevertheless, the impact dimension is only one half of the previous quarter.

The results of remaining scenarios confirm their inferiority in terms of potential severity when compared to CDS developments. Both the trade balance deficit and Euribor rates changes induce significantly lower effects on NPLs than CDS. Moreover, these effects are marked further away in time as compared to CDS shocks. Furthermore, while the CDS rate increase puts pressure on net interest margin, empirical estimations suggests that positive effects on net interest income follow after Euribor rate goes up.

The projections for the remaining dependent variables are presented in appendix 3 [8-11].

Conclusions

The innovative purpose of this research work is the development of a new mechanism for assessing the challenges induced by sovereign risk to banking stability in Romania, by modelling simultaneously the nonperforming loans ratio and net interest income along with the CDS rate developments.

The econometric results confirmed that an amplification of sovereign risk determines a rapid and material deterioration of banking book's quality. The main transmission channel was that of financing costs, while the one for the foreign exchange seemed to be rather small. However, this result should be read in cautious terms, since the evolution of the exchange rate in the recent part of the time series was fairly stable.

Banking stability is threatened via developments in net interest margin also. The negative effects of CDS increases on earning capacity of banks are material and last for few quarters. It seems that the sensitivity of interest expenses is larger than that of interest income to changes in CDS rate amid intense competition among banks both on attracting deposits and debtors with a clean payments history. However, additional efforts are needed to strengthen the accuracy of the net interest margin model.

Moreover, empirical support was obtained for validating the presumption of feedback effects from banking stability to sovereign risk. Approximately 70 percent of the expected development in nonperforming loans ratio over the next quarter is internalized by the current evolution of CDS rate. Therefore, the risk of entering into a vicious spiral is not negligible. Furthermore, econometric results point towards a possible similarity of pass-through features (in terms of both impact interval and level) between the CDS rate and policy rate on money market interest rates. These two findings provide reasonable arguments for adding the CDS rate to the set of explicit objectives for macroeconomic stability. One policy implication would perhaps be to develop a structured and permanent CDS targeting process. An avenue in this respect could be paying attention to both its internal and external determinants. This study made also an attempt in this direction. The functional form derived within this paper suggest that trade balance and economic growth are the major macroeconomic explanatory variables. Nevertheless, the international context is also an important driving force of the Romania's CDS. The combined impact of EURIBOR 3M dynamic and the regional developments in terms CDS

explain as much as one third of the variance of Romania sovereign risk premium that was captured by the estimated functional form.

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APPENDIX 1

Table 1: The candidate explanatory variables and the corresponding equations

	Independent factors	Decision making	Expected sign
Equation 1: CDS			
Internal factors			
1	Balance of trade (log transformation)	(A)	+
2	Real GDP (log transformation)	(F/A)	-
3	Governmental consumption in constant prices (log transformation)	(F/A)	+
4	Non-performing loans ratio	(F/A)	+
External factors			
5	Euribor 3M	(A)	+
6	Change in CDS 5Y – Greece	(A)	+
Equation 2: Exchange rate (log transformation)			
Macroeconomic determinants			
1	CDS 5Y	(F/A)	+
2	Inflation rate	(A)	+
3	International reserves (log transformation)	(F/A)	-
4	Aggregated consumption in constant prices (log transformation)	(F/A)	+
5	Export (log transformation)	(F/A)	-
6	Import (log transformation)	(F/A)	+
7	Foreign direct investment (log transformation)	(F/A)	-
8	Money market interest rate differential (ROBOR 3M – EURIBOR 3M)	(F/A)	-[1]
9	Long-term interest rate (EMU convergence criterion bond yield)	(F/A)	-
10	Expected inflation rate	(F/A)	+
Banking stability indicators			
11	Overdue loans ratio	(F/A)	+
12	Foreign liabilities – banking sector (log transformation)	(A)	-
Equation 3: ROBOR 3M			
Macroeconomic determinants			
1	CDS 5Y	(A)	+
2	Policy rate	(A)	+
3	Inflation rate	(A)	+
4	Governmental consumption in constant prices (log transformation)	(A)	+
5	Household consumption in constant prices (log transformation)	(A)	+
6	Exchange rate (log transformation)	(F/A)	+
7	Change in log transformed exchange rate	(F/A)	+
8	Expected inflation rate	(F/A)	+
Banking stability indicators			
9	Overdue loans ratio	(F/A)	+
10	Euribor 3M	(A)	+
Equation 4: Deposit rate (LEI)			
Macroeconomic determinants			
1	Inflation rate	(A)	+
2	Exchange rate (log transformation)	(F/A)	+
3	Expected inflation rate	(F/A)	+
4	Gross wages (log transformation)		
Banking stability indicators			
5	HHI Deposits	(A)	-
6	ROBOR 3M	(A)	+
7	EURIBOR 3M	(A)	+
Equation 5: Deposit rate (EURO)			
Macroeconomic determinants			
1	Exports (log transformation)	(F/A)	-
2	Gross wages (log transformation)	(F/A)	+
Banking stability indicators			
3	HHI Deposits	(A)	-
4	ROBOR 3M	(A)	+
5	EURIBOR 3M	(A)	+

[1] However, the money market interest rate differential, a well known determinant of exchange rate dynamics, provided counterintuitive results. While the economic theory provides strong arguments for a negative relationship, the univariate analysis results show a strong positive sensitivity of exchange rate to the gap between Robor3M and Euribor3M.

6	Foreign liabilities – banking sector (log transformation)	(A)	-
Equation 6: Interest rate on LEI loans			
Macroeconomic determinants			
1	GDP growth	(F/A)	-
2	Gross wages (log transformation)	(F/A)	-
3	CDS 5Y	(F/A)	+
Banking stability indicators			
4	HHI Loans	(A)	-
5	ROBOR 3M	(A)	+
6	EURIBOR 3M	(A)	+
7	Credit to private sector (log transformation)	(A)	-
8	Risk premium for FX denominated loans	(A)	+
9	Deposit interest rate (LEI)	(A)	+
10	Non-performing loans ratio	(F/A)	+
Equation 7: Risk premium for FX denominated loans			
Macroeconomic determinants			
1	GDP growth	(F/A)	-
2	Output gap	(F/A)	-
3	CDS 5Y	(F/A)	+
Banking stability indicators			
4	HHI Loans	(A)	-
5	EURIBOR 3M	(A)	+
6	Credit to private sector (log transformation)	(A)	-
7	Risk premium for FX denominated loans	(A)	+
8	Deposit interest rate (EURO)	(A)	+
9	Non-performing loans ratio	(F/A)	+
Equation 8: Nonperforming loans ratio			
Macroeconomic determinants			
1	GDP growth	(A)	-
2	Output gap	(A)	-/+
3	Squared Output gap	(A)	+
4	CDS 5Y	(A)	+
5	Gross Wage (log transformation)	(A)	-
6	Private sector employees (log transformation)	(A)	-
7	Public sector employees (log transformation)	(A)	-
Banking stability indicators			
8	Interest rate on LEI loans	(A)	+
9	Risk premium for FX denominated loans	(A)	+
10	EURIBOR 3M	(A)	+
Equation 9: Net interest margin			
Banking stability indicators			
1	Deposit interest rate (LEI)	(A)	-
2	Deposit interest rate (EURO)	(A)	-
3	Interest rate on LEI loans	(A)	+
4	Risk premium for FX denominated loans	(A)	+
5	ROBOR 3M	(A)	-
6	EURIBOR 3M	(A)	-

APPENDIX 2

Table 2: Specifications of the set of explanatory models for inflation dynamics

Variable	CDS	Exchange rate	ROBOR 3M	Deposit rate (LEI)	Deposit rate (EURO)	Interest rateon LEI loans	Risk premium on EURO loans	Overdue loans ratio	Net interest margin
D(CDS)			0.4928		0.1034			4.6694	
			(0.0006)		(0.0002)			(0.0331)	
D(CDS(-1))		2.0258			0.1210		0.0975	3.9103	
		(0.0001)			(0.0000)		(0.0169)	(0.0962)	
D(D(CDS_GR))	0.1903								
	(0.0667)								
DLOG(Exchange rate)			0.1134						
			(0.0069)						
D(Reference rate)			0.7191						
			(0.0001)						
D(ROBOR 3M)				0.4452					
				(0.0000)					
D(ROBOR 3M(-1))				0.3929					
				(0.0000)					
D(ROBOR 3M(-2))						0.0793			
						(0.0538)			
D(EURIBOR_1M(-3))									0.4540
									(0.0803)
D(EURIBOR_3M)								0.2069	
								(0.0493)	
D(EURIBOR_3M(-1))		-1.6910	1.1733						
		(0.0161)	(0.0001)						
D(EURIBOR_3M(-2))	1.1063				0.4725				
	(0.0001)				(0.0000)				
D(Deposit rate - LEI)						0.8064			
						(0.0000)			
D(Deposit rate - EURO(-1))									-1.1103
									(0.0003)
D(Interest rate on LEI loans)									0.2352
									(0.0002)
D(Interest rate on LEI loans(-1))								1.642	
								(0.0000)	
D(Risk premium on EURO loans(-0))								0.2069	
								(0.0493)	
D(Risk premium on EURO loans(-2))						0.4760			0.6095
						(0.0483)			(0.0042)
D(D(Bond yields (-1)))		1.3373							
		(0.0002)							
D(HHI Loans (-6))							-0.2671		
							(0.0756)		
D(HHI Deposits (-4))				-0.4578					
				(0.0303)					
DLOG(Credit to private sector (-1))						-4.1272			
						(0.0000)			
DLOG(Credit to private sector (1))							-0.0189		

							(0.0002)		
D(Overdue loans ratio(1))	0.6961	2.4276					0.3659		
	(0.0048)	(0.0007)					(0.0003)		
DLOG(Private employees)								-6.1939	
								(0.0016)	
DLOG(Gross Wage)								-1.0302	
								(0.0000)	
DLOG(GDP(1))	-0.1899								
	(0.0025)								
D(GAP_ PIB (-4))							0.2236		
							(0.0000)		
(GAP_ PIB (-3))^2								0.5966	
								(0.0014)	
DLOG(EXPORTS(4))		-0.2690							
		(0.0000)							
D(Balance of trade (-1))	-0.2516								
	(0.0003)								
DLOG(Governmental consumption (-4))	1.3459								
	(0.0468)								
Adjusted R squared	61.79%	67.76%	80.39%	83.51%	79.74%	77.52%	60.96%	57.43%	39.25%
Durbin-Watson stat	2.1458	2.1292	2.1997	1.8076	1.4271	1.5773	1.9682	1.3026	2.4535

Note: Coefficients and p-values in parentheses from SUR estimation. Positive numbers in parentheses are due to leads (meaning expected levels) and negative numbers due to lags (meaning delayed impact).

APPENDIX 3

Fig. 5: Projections of dependent variables based on considered scenarios

CDS rate
Error! Not a valid link.
Deposit rate on RON denominated liabilities
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Lending interest rate (RON)
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ROBOR 3M
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Exchange rate EUR/RON
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Deposit rate on euro denominated liabilities
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Risk premium on euro denominated loans
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