

Methods of Regulating Non-performing Loans. The Challenge for Greece



Paris A. Patsis and Konstantinos J. Liapis

Abstract When an economy faces financial crisis, a secondary problem occurs regarding the management of Non-performing Exposures. According to EBA and BoG, several restructuring methods have been created in order to address this problem. This paper aims to analyze all the possible methods, creating at the same time a methodology to pick the best method for each case. Using sensitivity analysis on the impact of the restructuring methods to the financial ratios of the firms we analyzed, we concluded to a technique of choosing the most appropriate method for each case. This paper has practical implications, since its findings can help distressed businesses that face liquidity, solvency and productivity problem to choose the most appropriate restructuring method in order to face financial healthier conditions, which at the moment doesn't exist.

Keywords Banking · Accounting · Corporate finance · Non-performing exposures

JEL Classification Codes G21 · M41 · G30

1 Introduction

High levels of NPL have a negative impact on bank lending to the economy as a result of balance sheet, profitability and capital restrictions faced by banks that experience these high levels of NPL. The deliberate and sustainable reduction of NPLs in the banks' balance sheets benefits the economy both from a micro-prudential and a macro-prudential point of view. At the same time, it is known that economic recovery is also an important factor in the final settlement of NPLs. One of the key priorities of the European Central Bank's (ECB) Banking Supervision is to address

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to Springer Nature Switzerland AG 2021

A. Horobet et al. (eds.), *Global, Regional and Local Perspectives on the Economies of Southeastern Europe*, Springer Proceedings in Business and Economics, https://doi.org/10.1007/978-3-030-57953-1_12

issues related to asset quality. This issue was dealt with for the first time in the frame of the comprehensive assessment of 2014, which consisted of two key pillars - asset quality control and stress test. Following the comprehensive assessment, the ECB's Banking Supervision intensified its work on NPL supervision. In the course of ongoing supervisory engagement, Joint Supervisory Teams (JSP) observed that banks are taking different approaches to identifying, measuring, managing and writing off NPLs. With this in mind, a high-level group was formed in July 2015, (consisting of ECB staff and national competent authorities) with a view to developing a uniform supervisory approach to NPLs. In addition, in its supervisory priorities, ECB Banking Supervision has highlighted two key risk factors for euro area banks, namely credit risk and increased levels of non-performing loans.

Without a proper management structure or an operational framework, banks will not be able to address issues related to NPLs either in a sustainable or an effective way. In accordance with international and national regulatory guidelines, the bank's governing body should approve of and monitor the institution's strategy.¹ For banks with high levels of NPLs, the NPL strategy and operational plan is a vital part of their core strategy. Therefore, it should be approved and coordinated by the governing body. More specifically, the governing body should:

- annually adopt and regularly review the NPL strategy, as well as the Operational Plan,
- oversee the implementation of the NPL strategy,
- set administrative targets (including a sufficient number of quality objectives) and incentives for NPL-setting activities,
- monitor periodically (at least on a quarterly basis) the progress achieved in relation to the objectives and milestones set out in the NPL strategy, including the operational plan,
- establish adequate approval procedures for NPL decisions - for large NPL exposures this should require the approval of the management body,
- approve NPL-related policies and ensure that they are fully understood by the staff,
- Ensure adequate internal controls on NPL management procedures (with particular emphasis on NPL-related activities, provisioning, collateral valuations and sustainability of regulatory measures);
- have sufficient expertise in NPL management.

The governing body and other relevant executives are required to devote part of their functions to issues related to the NPL arrangement. This should be in proportion to NPL risks within the bank. Especially when NPLs are growing in volume, the bank needs to establish and clearly document defined, efficient and consistent decision-making processes. In this context, there should be an adequate second line of defense available at all times.

¹ See, also the document "SSM on the government and risk appetite", June 2016.

International experience shows that suitable operational models for NPLs are based on NPL modules that operate separately from the source of the loan. The underlying reason for this separation is the effort to eliminate potential conflicts of interest and to use specialist NPL knowledge from the level of staff to the level of senior executives. Banks with high levels of NPL should therefore constitute separate NPL workout units (WUs), ideally from the start of arrears—with a delay of up to 90 days— but no later than the classification of an NPL exposure. This split-up approach should include not only client relationship activities (e.g. negotiation of settlement measures with clients) but also the decision-making process. With this in mind, banks will have to consider establishing specific decision-making bodies for the arrangement of NPLs (e.g. an NPL committee). In cases of overlapping with the institutions, (it is rather inevitable with managers or experts involved in the lending process), the institutional framework should ensure that potential conflicts of interest are adequately constrained. It is recognized that for a number of business sectors or exposures (e.g. where specific know-how is required), the establishment of a fully segregated organizational unit may not be possible, or a longer integration period may be required. In such cases, internal controls should be applied to make sure that potential conflicts of interest are eliminated (e.g. an independent view on the creditworthiness of borrowers). Although NPL Work Units should be separated from the lending units, regular interaction between the two functions should be encouraged, for example, to exchange the information required for handling NPL inputs or to provide feedback gained from NPLs that may be important for the launch of new activities.

The purpose of this paper is to create a model that connects the Cash Flow Statement, the Profit and Loss account, the Balance Sheet the Additional Funds Need Model (AFN) (Spanos et al. 2019; Liapis and Trigkas 2019) and main Ratios. Then we will apply restructuring methods in order to evaluate how these methods affect a distressed business.

Our paper is organized as follows: After the introduction follows the Methods of addressing NPEs problem—Literature Review. Then the Methodology of addressing NPEs problem is presented followed by the Findings. Finally, conclusions are presented.

2 Methods of Addressing NPEs Problem

The main purpose of settlement measures² is to create appropriate conditions so that borrowers who are unable to pay their loans, can emerge from this situation or that borrowers paying their loans will not fall into the above-mentioned category. The aim of the settlement measures should always be to restore the exposure to a viable repayment condition. However, supervisory experience has shown that in many cases settlement solutions provided by banks to borrowers in financial difficulties are not fully in line with this objective and may therefore delay the implementation of actions needed in order to address quality issues of the assets, thus leading to an erroneous representation of asset quality in the balance sheet. This happens, for example, when regulatory measures include repeated periods of grace, but they do not address the fundamental issue of the borrower's excessive borrowing cost in relation to his capability of repaying it.

2.1 Settlement Options and Their Viability

When considering the various regulatory solutions, it is appropriate to distinguish between short and long-term settlement measures. Most solutions include a combination of different measures, possibly over a different time horizon, putting together short and long-term options. Short term regulatory measures are restructured repayment terms that are temporary and designed to deal with short-term economic difficulties, but do not deal with the final settlement of overdue debt unless combined with appropriate long-term measures. Such short-term measures should generally not last more than two years and, in the case of project finance and commercial property, one year. Short-term regulatory measures should be taken into account and provided when the borrower meets the following two criteria.

- The borrower faces a recognizable event that has temporarily compromised his liquidity. Such an event should be demonstrated in a formal manner (and not hypothetical evidence) by means of written documentation containing certain elements indicating that the borrower's income will recover in the short term or that, based on the bank's conclusion, it is not possible to provide long-term regulatory measures which are more general in nature or relate specifically to the borrower.

²The guidance provided in this chapter relates to loan settlement as defined by EBA and explained in Sect. 5.3. See, the document "EBA Implementing Technical Standards on Supervisory Reporting on Forbearance and Non-performing Exposures under Article 99 (5) of Regulation (EU) No 575/2013". Under Commission Implementing Regulation (EU) 2015/227 of January 9, 2015, amending Implementing Regulation (EU) No. (EC) No 680/2014 laying down implementing technical standards on the submission of prudential reporting by institutions pursuant to Council Regulation (EU) 575/2013 of the European Parliament and of the Council (OJ L 48, 20.2.2015, p. 1).

- The borrower has demonstrated a good financial relationship with the bank in a tangible manner (e.g.: that he has repaid a significant part of the due capital before the incident) and a clear willingness to cooperate.

The contractual terms of settlement arrangements should stipulate that the bank has the right to review the agreed settlement measures if the borrower's situation improves and therefore it would be possible to impose more favorable terms for the bank (from regulatory arrangements back to the original terms of the contract). The bank should also consider including strict penalties in the contractual terms for borrowers who are unable to comply with the settlement agreement (e.g. additional security).

2.2 Sustainable Versus Non-sustainable Regulatory Measures

Banks and supervisors are clearly obliged to make a distinction between 'sustainable regulatory' solutions, i.e. solutions that actually help to reduce the balance of the borrower's credit facilities and 'non-sustainable' solutions. General supervisory guidelines for the classification of viable adjustment measures are presented below:

- Generally, a settlement solution including long-term measures should be considered viable only when:
 - The institution can demonstrate (with reasonably documented financial data) that the borrower has the financial capacity to realistically meet the settlement solution.
 - The settlement of arrears is fully dealt with and it is expected that the balance of the borrower's debt will be significantly reduced over the medium to long term period.
 - In cases where regulatory arrangements have been granted in the past, including past long-term settlement measures, the bank should ensure that additional internal controls are in place so that these follow-up measures meet the sustainability criteria as outlined below. These controls should, as a minimum, guarantee that the Risk Control Function is explicitly informed of such cases in advance. In addition, explicit approval should be sought from the appropriate senior decision-making body (e.g. the NPL committee).
- In general, a settlement solution including short-term measures should be considered viable only when:
 - The institution can demonstrate (with reasonably documented financial data) that the borrower has the financial capacity to meet the settlement solution.
 - The short-term measures are actually provisionally applied and the institution is satisfied and able to certify, based on reasonable economic data, that the

borrower demonstrates the ability to repay the original or agreed amount (on the whole of the principal and the interest) the short-term temporary adjustment.

– This solution does not result in multiple, successive regulatory measures for the same exposure.

- As stated in the criteria listed below, the viability assessment should be based on the economic profile of the borrower and on the regulatory measure to be granted at that time. It should also be noted that the viability assessment should be carried out independently from the source of the regulation (e.g. the borrower using regulation clauses contained in the contract, bilateral negotiation of the arrangement between the borrower and the bank, public program of measures regulation provided to all borrowers for a particular case).

2.3 Types of Settlements and Final Arrangements Types of Short-Term Settlements

Short-term types of settlement are the types of regulation with a lifespan of up to and including 2 years in cases where repayment difficulties are judged, well founded, temporary. Short-term types of regulation are the types of regulation with a maturity of up to and including 2 years in cases where repayment difficulties are judged, well founded and temporary.

- Capitalization of Overdue Debets: Capitalizing on arrears and adjusting the payout schedule of the outstanding balance.
- Arrangement of Overdue Payables: Agreement on repayment of debts arrears with a predetermined timetable.
- Reduced Payment Above Interest: Reduction of the repayment amortization rate to a level exceeding that corresponding to the repayment of interest only for a specified short-term period.
- Interest Only: Only interest is paid during a specified short-term period.
- Reduced Payment Below Interest Only: Reduction of the amortization installment to a lower level than that corresponding to the repayment of interest only for a specified short-term period. Unpaid interest is capitalized or settled.
- “Grace Period”: Suspension of payments for a predetermined period. Interest is capitalized or settled. Short-term arrangements last for less than 2 years. However, arrangements that include only short-term actions, such as those mentioned above for a specific period of time that is likely to exceed two years, will be included in the short-term arrangements.

2.4 Types of Long-Term Settlements

These are types of settlement with a lifespan of more than 2 years that aim to reduce the interest rate and/or debt. They are classified, taking into account conservative assumptions about the estimated future repayment ability of the borrower up to the expiration of the repayment deal.

- “Interest Rate Reduction”: Decrease in interest rate or interest rate margin.
- “Loan Term Extension”: Extension of the repayment term of the loan (i.e., shifting the contractual date of payment of the last installment of the loan at a period later than 2 years).
- Split Balance: Splitting the borrower’s debt into two tranches: the part of the loan that the borrower is estimated to be able to repay on the basis of his current and estimated future repayment capacity; and the remaining part of the loan, which is settled at a later date, through the liquidation of property or through another arrangement, agreed beforehand by the two parties.
- Partial Debt Forgiveness/Write Off: Final deletion of part of the total claim so that the remaining debt reaches a level which is more likely to be settled smoothly.
- Operational Restructuring: Restructuring the business, making it viable and capable of smoothly servicing its debts. The reorganization may include actions such as management change, sale of property, cost containment, corporate transformation, credit renewal and/or new loans.
- Debt/equity swap: Converting part of the debt into equity so that the remaining debt reaches a level that is estimated to be able to be settled smoothly.

2.5 Final Settlement Solutions

A final settlement solution is defined as any change in the type of contractual relationship between the financial institution and the borrower, or its termination, with the aim of finalizing the institution’s claim against the borrower. This solution may be combined with a handover (whether voluntary or mandatory) of the collateral to the institution in order to reduce the total amount of the claim or even to liquidate the collateral to settle the claim. There are several examples of solutions offered in the scope of international practices, but the adoption of each of them is examined at all times in relation to the provisions of the Greek law:

- Other Out-of Court Settlements: Extra-judicial actions that do not fall into one of the following categories.
- Voluntary Surrender of assets: The borrower, who cannot meet the repayment terms of a mortgage loan, voluntarily grants (i.e. without requiring a court action on behalf of the institution) the ownership of the pledged property to the creditor. The agreement clearly stipulates how any remaining balance is to be settled. This solution may concern a residential or commercial property.

- **Mortgage to Rent/Lease:** The borrower transfers the ownership of the property to the creditor, by signing a rental/leasing agreement, which allows the latter to lease the property for a certain period of time. This solution may concern a residential or commercial property.
- **Voluntary Sale of Property:** The borrower voluntarily makes a sale of the trusted property to a third party with the consent of the crediting institution. If the sale price falls below the total amount of the debt, the agreement clearly sets out how any remaining balance should be settled. This solution may concern a residential or commercial property.
- **Settlement of Loans:** An out-of-court agreement in which the creditor receives either a lump-sum cash payment (or cash equivalents) or a series of predetermined partial payments. Within the frame of the settlement, the crediting institution may partially waive the claim.
- **Settlement of Claims Against Terminated Contracts:** Selling the loan to another credit institution, financial institution or scheme.
- **Auction—Collateral Repossession:** The creditor wins the auction by acquiring the ownership of the mortgaged property or other collateral.
- **Auction-Collateral Liquidation:** The creditor completes the auction of tangible collaterals and collects the appropriate auction.
- **Under Legal Protection:** The loan has been handed over to Enforcement Law regulations (for example Law 3869/2010, Law 4307/2014, Bankruptcy Code, etc.) which are applied following a final court decision. To avoid misunderstandings, we note that this category does not include loans for which borrowers have already applied for legal protection and the verdict is pending. Provisional arrangements in the framework of an interim order for the payment of minimum amounts within the framework of Law 3869/2010 cannot be considered as regulations.
- **Full Debt Write-off:** The creditor decides to write off the debt as long as all out-of-court and regulatory actions have been exhausted and no further recovery is expected.

All the above-mentioned restructuring methods have been summarized in Table 1.

3 Methodology for Testing the Impacts of Restructuring Methods

First, we created a model that connects a Cash Flow Statement, a Balance Sheet, an Additional Fund Need Model (AFN Model), a Profit and Loss Account and also some Ratios. Then we created a business that face financial problems (Gouma et al. 2018) in order to apply restructuring methods and see how these methods affect the business. The year noted at “t” is the baseline year the year noted as “t + 1” is the following year. Model inputs for Year “t” are calculated automatically from the Balance sheet and the Profit and Loss account (Historical Data-Brown Colour),

Table 1 Restructuring methods

Rank	Types of settlements and final arrangements	
1	Short-term settlements	Capitalization of overdue debts
2		Arrangement of overdue payables
3		Reduced payment above interest
4		Interest only
5		Reduced payment below interest
6		Grace period
7	Long-term settlements	Interest rate reduction
8		Loan term extension
9		Split balance
10		Partial debt forgiveness/write off
11		Operational restructuring
12		Debt/equity swap
13	Final settlement solutions	Other out-of court settlements
14		Voluntary surrender of assets
15		Mortgage to rent/lease:
16		Voluntary sale of property
17		Settlement of claims against terminated contracts
18		Loan sale
19		Auction-collateral repossession
20		Auction-collateral liquidation
21		Under legal protection
22		Full debt write-off

Source ECB

while Model Inputs for Year “t + 1” are produced by us, manually (Green Colour) (Table 2).

After we put the Model inputs, the balance sheet, the Profit and Loss Account and the Cash flow Statement for Year “t + 1” are produced automatically. In addition, some other model outputs are produced and are showed in Table 3.

According to this table, this business needs additional funds of 311.000 thousand euros in order to continue the operational procedure smoothly.

Now, we will test how Debt to Equity method combined with operational restructuring (Rank 11 + 12 from Table 1) affect the business. According to the base model the AFN accounts for 311.00 euros. Using restructuring methods, we will try to eliminate the Additional Funds Needs of the company.

Table 2 Base model inputs

Model inputs	t	t + 1
Target of sales (%)		5.00
Costs of goods sold as percentage of sales (%)	81.17	81.17
Depreciation expense % ratio of tangible assets (%)	6	6.00
Administrative expenses (%)	13	13.00
Amortizations—provisions (%)	1	1.00
Interest rate loans (%)	-7.65	-7.65
Interest rate for deposits and securities (%)	7	7.00
Losses from derivatives (%)	-25	-25.00
Revenues from subsidiaries and long term investments	16	16.00
Tax rate (%)	29	29.00
Cash target		80.000
Claims from customers (%)	4.67	4.67
Notes receivables (%)	3.00	3.00
Trading and AFS		120.000
Accounts receivable as percentage of sales		
Inventory as percentage of sales (%)	6.00	6.00
Accruals assets as percentage of sales (%)	0.47	0.47
Intangible assets		100.000
Tangible assets		1.600.000
Property assets in progress		16.000
Long term investments		40.000
Subsidiaries		52.000
Accounts payable as percentage of sales (%)	10.67	10.67
Notes payable as percentage of sales (%)	5.00	5.00
Accruals liabilities as percentage of sales (%)	0.53	0.53
Other short term liabilities (%)	0.80	0.80
Long-term loans and bonds		500.000
Other long-term liabilities		30.000
Derivatives fair value		16.000
Dividends to common		-
Common stock		80.000
Reserve above par		160.000
Other reserves		20.000

Source Authors own work

Table 3 Base model outputs

Model outputs	t	t + 1
NOPAT	32.660	35.390
Net operating working capital	99.000	109.733
Total operating capital	1.355	1.449.433
Free cash flows (FCF)	–	59.043
AFN		311.065
Ratios	t	t + 1
Current ratio	0.98	0.67
Inventory turnover	13.53	13.53
Days sales outstanding	27.98	28.00
Total assets turnover	1.58	1.59
Debt ratio (%)	70.19	72.64
Profit margin (%)	0.00	0.03
Return on assets (%)	0.00	0.04
Return on equity (%)	0.00	0.25
(NOPAT/Total operating capital) (%)	2.41	2.44

Source Authors own work

4 Findings

As far as the operational restructuring is concerned, the firm decided to alter the Cash Target from 80.000 to 50.000, to sell some assets with value 200.000 and alter the Trading and AFS from 120.000 to 70.000. In addition, due to Debt to Equity method of restructuring, the long-term Loans and Bond account for 300.000 from 500.000 and the Common stock accounts for 280.000 from 80.000. The second column demonstrated the “t + 1” year as shown earlier and the third column the inputs after incorporating the 2 methods of restructuring (Green Colour) (Table 4).

As far as the Model outputs are concerned (Table 5), the main change we expected and occurred is that the debt ratio decreased from 72 to 41%. Return on Equity increased from 0.25 to 3.19%. These two are the main changes from the restructuring methods applied to the company. In Cash Flow Statement, the main difference is the opening cash balance. This is due to the change to the Cash Target we assumed as part of the operational restructuring. At last, very important is the AFN before and after the restructuring methods. Before the restructuring methods the company needed 311.000 euros while after the restructuring method the company needs – 7.528 euros allowing the company to increase its capital. This shows clearly how the restructuring methods influenced the financials of the company (Tables 6 and 7).

Table 4 Model inputs

Model inputs	t	t + 1 before restructuring	t + 1 after restructuring
Target of sales (%)		5.00	5.00
Costs of goods sold as percentage of sales (%)	81.17	81.17	81.17
Depreciation expense % ratio of tangible assets (%)	6	6.00	6.00
Administrative expenses (%)	13	13.00	13.00
Amortizations—provisions (%)	1	1.00	1.00
Interest rate loans (%)	-7.65	-7.65	-7.65
Interest rate for deposits and securities (%)	7	7.00	7.00
Losses from derivatives (%)	-25	-25.00	-25.00
Revenues from subsidiaries and long term investments (%)	16	16.00	16.00
Tax rate (%)	29	29.00	29.00
Cash target		80.000	50.000
Claims from customers (%)	4.67	4.67	4.67
Notes receivables (%)	3.00	3.00	3.00
Trading and AFS		120.000	70.000
Accounts receivable as percentage of sales			
Inventory as percentage of sales (%)	6.00	6.00	6.00
Accruals assets as percentage of sales (%)	0.47	0.47	0.47
Intangible assets		100.000	100.000
Tangible assets		1.600.000	1.400.000
Property assets in progress		16.000	16.000
Long term investments		40.000	40.000
Subsidiaries		52.000	52.000

(continued)

Table 4 (continued)

Model inputs	t	t + 1 before restructuring	t + 1 after restructuring
Accounts payable as percentage of sales (%)	10.67	10.67	10.67
Notes payable as percentage of sales (%)	5.00	5.00	5.00
Accruals liabilities as percentage of sales (%)	0.53	0.53	0.53
Other short term liabilities (%)	0.80	0.80	0.80
Long-term loans and bonds		500.000	300.000
Other long-term liabilities		30.000	30.000
Derivatives fair value		16.000	16.000
Dividends to common		-	-
Common stock		80.000	280.000
Reserve above par		160.000	160.000
Other reserves		20.000	20.000

Source Authors own work

Table 5 New model cash flow statement

Cash flow statement	t + 1 before restructuring	t + 1 after restructuring
<i>Operating cash flow</i>		
Earnings before taxes (EBT)	1,222	25,308
<i>Adjustments for the reconciliation of net income to net cash flows from operating activities</i>		
Depreciations	102,300	96,300
Losses from derivatives	4,000	4,000
Revenues from subsidiaries and long term investments	-14,720	-14,720
Amortizations—provisions	31,500	31,500
Loans interest—interest and similar income from deposits and securities	59,343	41,257
<i>Increase/Decrease in</i>		
Claims from customers	7,105	7,105
Notes receivables	4,500	4,500
Inventories	9,000	9,000
Accrual assets	805	805
<i>Increase/Decrease in</i>		
Accounts payable	-16,105	-16,105
Tax liabilities	34,823	31,330
Notes payable	-7,500	-7,500
Accruals	-695	-695
Short and long term liabilities	-7,200	-7,200
Cash from Operations	208,378	204,885
<i>Investing cash flow</i>		
Intangible assets	-10,000	-10,000
Tangible assets	0	-200,000
Subsidiaries	0	0
property assets in progress	-8,000	-8,000
Long term investments	0	0
Trading & AFS	0	-50,000

(continued)

Table 5 (continued)

Cash flow statement	t + 1 before restructuring	t + 1 after restructuring
Cash from Investing	-18.000	-268.000
<i>Financing cash flow</i>		
Increase (Decrease) Debt	-71.065	447.528
Increase of share capital after deducting expenses	15.000	-185.000
Repayment of loans (interest and capital) and other changes in funds	-114.312	-149.414
Cash from Financing	-170.378	113.115
Net increase in cash, cash equivalent	20.000	50.000
Opening cash balance and cash equivalent	80.000	50.000
Opening cash balance and cash equivalent	100.000	100.000
Control point		
183.645	183.645	183.645

Source Authors own work

Table 6 New model output

Model outputs	t	t + 1 before restructuring	t + 1 after restructuring
NOPAT	32,660	35,390	39,650
Net operating working capital	99,000	109,733	26,240
Total operating capital	1,355,000	1,449,433	1,147,940
Free cash flows (FCF)		-59,043	246,710
AFN		311,065	-7,528
Ratios	t	t + 1 before restructuring	t + 1 after restructuring
Current ratio	0.98	0.67	0.88
Inventory turnover	13.53	13.53	13.53
Days sales outstanding	27.98	28.00	28.00
Total assets turnover	1.58	1.59	1.87
Debt ratio (%)	70.19	72.64	41.64
Profit margin (%)	0.00	0.03	0.57
Return on assets (%)	0.00	0.04	1.07
Return on equity (%)	0.00	0.25	3.19
(NOPAT/Total operating capital) (%)	2.41	2.44	3.45

Source: Authors own work

Table 7 New model balance sheet

ASSETS	t	Differences	t + 1 before restructuring	Differences	t + 1 before restructuring
Current assets					
Cash	100.000	20.000	80.000	50.000	50.000
Claims from customers	140.000	-7.105	147.105	-7.105	147.105
Notes receivables	90.000	-4.500	94.500	-4.500	94.500
Inventories	180.000	-9.000	189.000	-9.000	189.000
Trading & AFS	120.000	0	120.000	50.000	70.000
Accrual assets	14.000	-805	14.805	-805	14.805
Total current assets	644.000		645.410		665.410
<i>Fixed Assets</i>					
Intangible assets	110.000	10.000	100.000	10.000	100.000
Tangible assets	1.600.000	0	1.600.000	200.000	1.400.000
Accumulated depreciations	-570.000	-101.700	-468.300	-83.700	-486.300
Net fixed assets	1.030.000		1.131.700		913.700
property assets in progress	24.000	8.000	16.000	8.000	16.000
Total fixed assets	1.164.000		1.247.700		1.029.700
<i>Other non current assets</i>					
Long term investments	40.000	0	40.000	0	40.000
Subsidiaries	52.000	0	52.000	0	52.000
Total assets	1.900.000		1.985.110		1.687.110
<i>Liabilities</i>					
<i>Current liabilities</i>					
Short term loans + AFN	110.000	-311.065	421.065	7.528	102.472

(continued)

Table 7
(continued)

ASSETS	t	Differences	t + 1 before restructuring	Differences	t + 1 before restructuring
Accounts payable	320.000	-16.105	336.105	-16.105	336.105
Tax liabilities	35.000	34.823	177	31.330	3.670
Notes payable	150.000	-7.500	157.500	-7.500	157.500
Accruals	16.000	-695	16.695	-695	16.695
Other short-term liabilities	240.000	-1.200	252.000	-1.200	252.000
Total current liabilities	655.000		956.743		641.641
<i>Long-term liabilities</i>					
Long-term loans and bonds	740.000	240.000	500.000	440.000	300.000
Provisions	104.000	-31.500	135.500	-31.500	135.500
Other long-term liabilities	24.000	-6.000	30.000	-6.000	30.000
Derivatives fair value	16.000	0	16.000	0	16.000
Total long-term liabilities	884.000		681.500		481.500
<i>Equity</i>					
Common stock	80.000	0	80.000	-200.000	280.000
Reserve above par	175.000	15.000	160.000	15.000	160.000
Other reserves	20.000	0	20.000	0	20.000
Retained earnings	86.000	-867	86.867	-17.969	103.969
Total Equity	361.000		346.867		563.969
Total Liabilities	1.900.000		1.985.110		1.687.110
Required assets			1.985.110		1.687.110
Specified sources of financing			1.674.045		1.694.638
Additional funds needed (AFN)			311.065		-7.528

Source: Authors own work

5 Conclusions

Non-performing Exposures is a problem of great importance. All the methods proposed by the ECB and the banking supervising authorities are very important. In our example we showed clearly that the methods have actually impact on the company. This model can be used also for Business Plans, budgets, restructuring plans.

In future analysis we are going to test all the methods separately in order to see how these affect the distressed companies. In addition, we are going to use sensitivity analysis to test also these methods under uncertainty conditions. This research may be very helpful for banks and businesses since it may help them to make the best choices when firms face financial problem in order to restructure them.

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