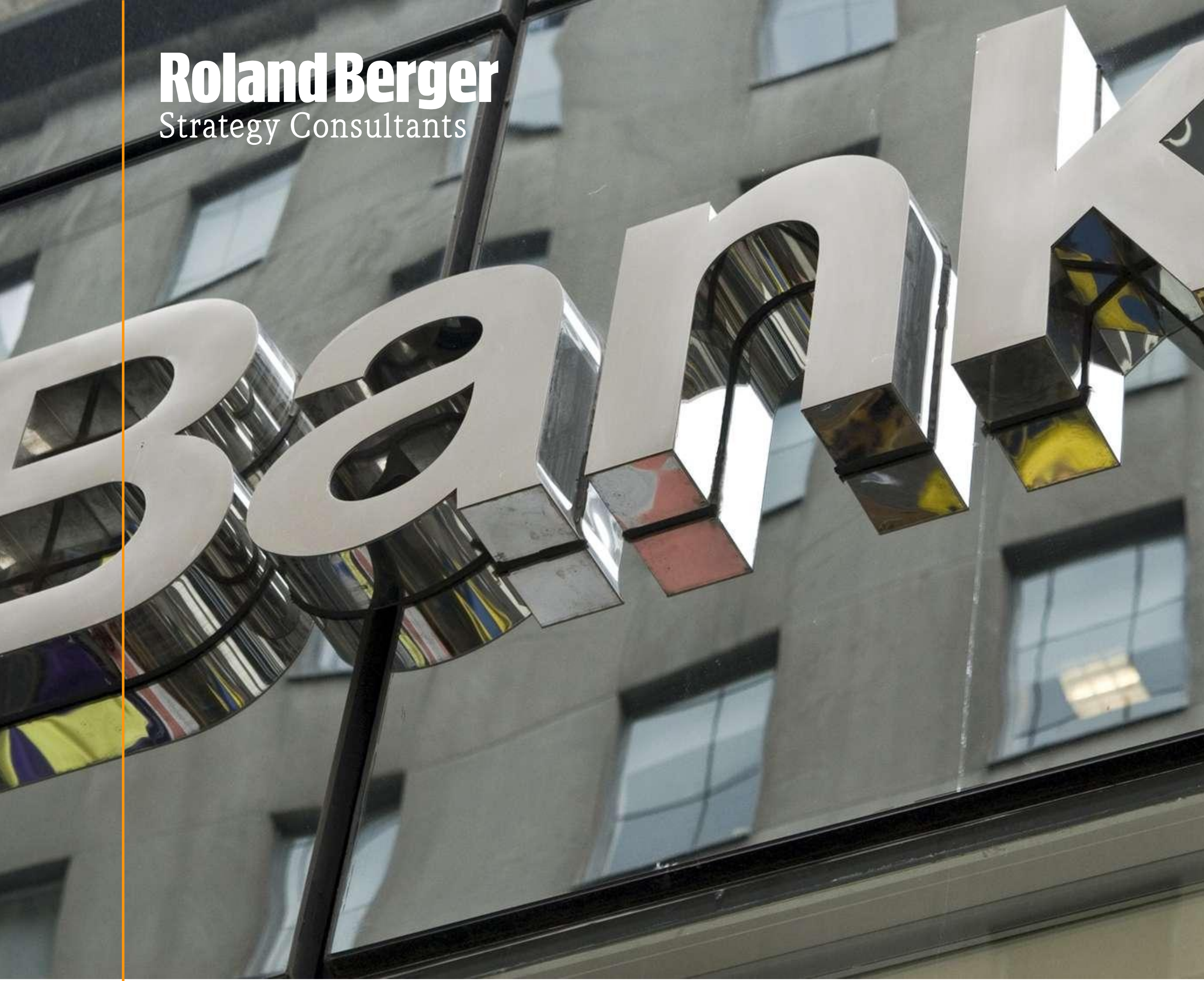
Roland Berger
Strategy Consultants



BANCO MEDIOLANUM
MEDIOLANUM BANKING GROUP

Stress Testing Spanish Credit Portfolio

Barcelona, 19 July 2012

Roland Berger Strategy Consultants España
Paseo de la Castellana, 140 - 3ª
28046 Madrid

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A. Executive summary

1. Introduction

Roland Berger Strategy Consultants was commissioned by Banco Mediolanum to provide an independent assessment of the resilience on the bank and its capacity to absorb negative effects on its credit business in different macroeconomic scenarios precisely using the same methodology as the one used in the stress test exercise of Spanish banking system from 2012 through 2014.

The objective of the exercise is to analyze the scenario-based impacts on credit write-downs and core tier 1 ratio for the bank. Roland Berger will assess to which banking tier group Banco Mediolanum belongs. Banco Mediolanum will be allowed to publish the results of this individual stress test.

2. Findings

The current macroeconomic context has been detrimental to the quality of banks' credit portfolios in Spain, exerting pressure in the form of credit write-downs and adversely affecting banks' ability to comply with core tier 1 capital requirements.

In Banco Mediolanum case, due to its particular balance sheet exposure, the stress-test as carried out for the other banks in Spain brings more positive results and does not lead to a recapitalization need for Banco Mediolanum. The total credit losses stemming from the stress scenario as defined by the Spanish Central Bank in this context for the years 2012 to 2014 for Banco Mediolanum is approx. 9 Mio EUR in the baseline scenario and 12 Mio EUR in the adverse scenario for the entirety of the three years 2012 – 2014 together.

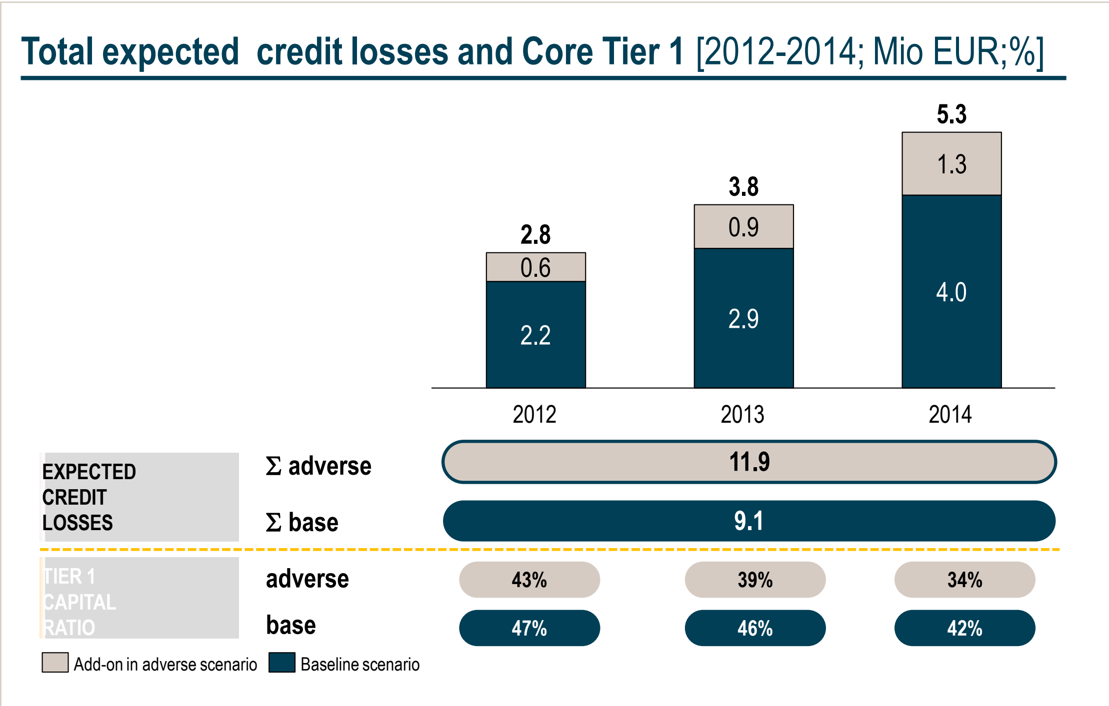


Figure 1: Expected credit write-downs and core tier 1 in the different scenarios

Further calculations were carried out to evaluate the recapitalization needs. However, given the high core tier 1 ratio (44%) of Banco Mediolanum at the end of 2011, no recapitalization is necessary even in the most adverse scenarios. Therefore, Banco Medioalum will belong to the Tier 1 group such as Santander, BBVA and Caixabank which is the group with no capital needs.

B. Report

1. Objectives and scope of project

The Spanish Council of Ministers instructed the Ministry of Economy and Competitiveness (MdE) to commission external reports evaluating the degree of soundness and resilience reflected in the major Spanish banks' balance sheets.

The primary objective was to obtain an independent assessment of bank balance sheets' ability to absorb external shocks, assuming three alternative scenarios with regard to future economic development. This initiative was carried out by two consulting firms, OliverWyman and Roland Berger Strategy Consultants coincidentally. While OliverWyman chose a top-down approach, Roland Berger used a bank by bank approach to estimate credit losses and recapitalization needs.

Subsequently, Banco Mediolanum tasked Roland Berger to carry out the same stress test for its portfolio in order to gain insight into its vulnerability on a basis comparable to the stress scenarios used on the Spanish banking system.

This stress test had certain focal points that were in scope. Specifically, the domestic loan portfolios of the banks were the major target of the initiative. The assessment of non-credit risks, such as market and liquidity risks, runs on banks and credit products other than the asset classes defined by BdE (e.g. sovereign debt) were not in scope. Details of which aspects the project did and did not cover are expressed in figure 2 in terms of three dimensions: Assets, scenarios and impacts. The stress test for Banco Mediolanum has been carried out on a comparable basis in this regard.

It is hence important to note that the asset classes in scope were loan portfolios for

- Commercial Real Estate
- Infrastructure Finance
- Corporate Lending
- SME
- Retail Mortgages
- Other Retail lending

Specifically, the following exposures have not been subjected to a stress – again in line with the Spanish bank stress testing initiative

- Banks and other Financial Institutions
- Sovereigns
- Local authorities

As these are typically not part of the loan book but are held as credit exposures in the treasury etc.

DETAILS ON PROJECT SCOPE

DIMENSION	In scope	Out of scope
ASSETS	> All credit positions in the banking book related to the Spanish onshore business > Reference date 31 December 2011	> Credit exposures outside of banking books (e.g. credit type securities in liquidity reserve/ trading books) and sovereign debt > Inter-bank exposures > Liability side, e.g. widening credit spreads raising funding costs and depressing margins > Assets related to international business activities
SCENA-RIOS	> Base scenario > Adverse scenario > Three-year time horizon, 2012-2014	> Reality check of base and adverse scenario > Any other scenarios
IMPACTS	> Analysis of impacts on expected credit write-downs/ provisions, P&L, core tier 1 capital for 2012-2014 > Impact of guarantee schemes > High level impact through announced mergers	> Overall capital impact analysis through the implementation of Basel III > Impact on liquidity > Integrated bank simulation that would consider dynamic effects (for example impact on P&L by future credit portfolio restructuring actions)

Figure 2: Balance sheet scope

2. Banco Mediolanum Portfolio – elements in and out of scope of stress-test

The scope of the stress testing for Banco Mediolanum has been decided to be in line – and hence comparable – with the stress testing exercise that Banco de España has conducted for the entire Spanish banking market.

However, Banco Mediolanum has a credit risk portfolio composition that is different from the average of the Spanish banking system. It has less weight on the ‘corporate and retail type’ lending and has more sovereign and Financial Institutions exposures. The following graphic shows this exposure distribution.

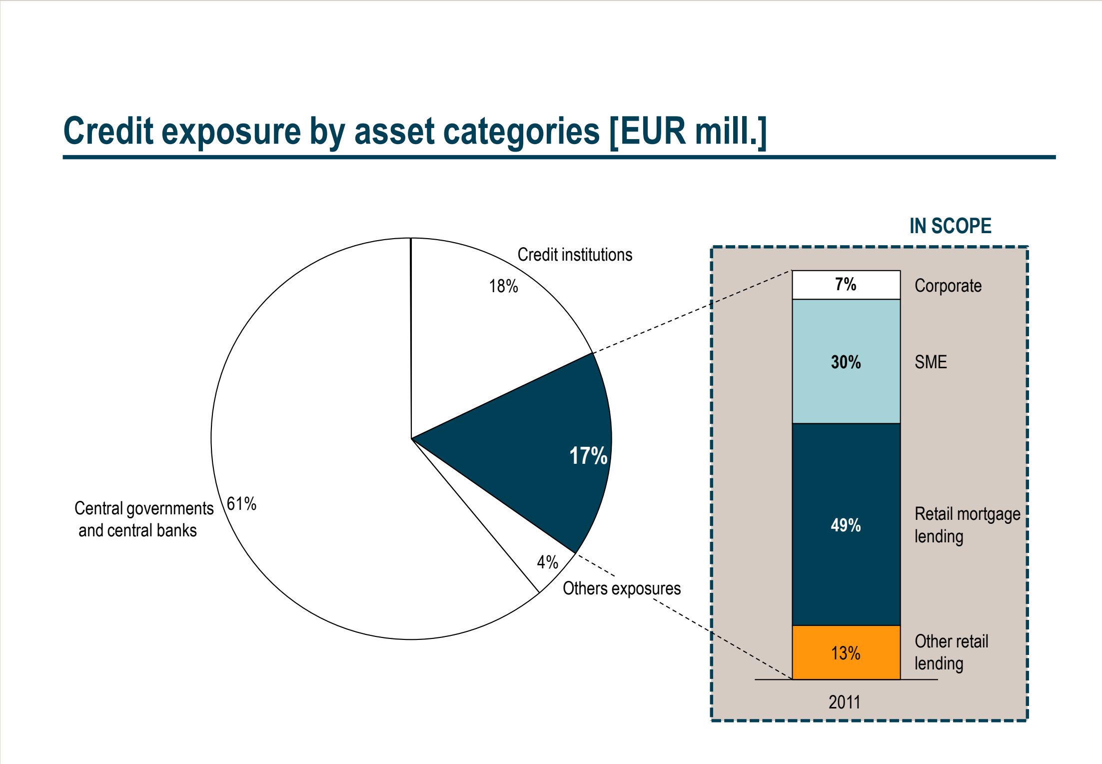


Figure 3: Credit exposure by asset categories

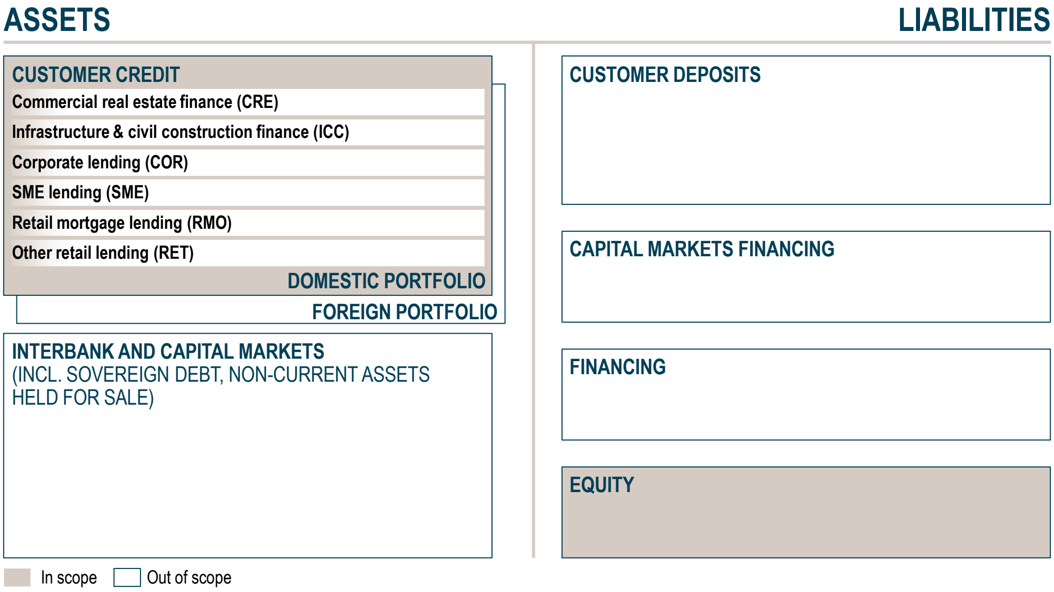
This difference has a major impact on the stress testing results:

- Since the majority of the exposure is in segments that are not stressed in the scenarios, only an effective 17% of the total balance sheet exposure of Banco Mediolanum are being stressed – however representing the overall credit activity

This will lead to a very small impact of the stress test on the bank's position.

3. Scenarios

Two economic stress scenarios were used – again identical to those used by the Banco de España in the Spanish Stress testing, a base scenario and an adverse scenario. The scenarios were specified in detail and are described with a set of macroeconomic variables on a timeline from 2012 to 2014, as summarized in the following figures.



		BASELINE	BASE SCENARIO			ADVERSE SCENARIO		
		2011	2012	2013	2014	2012	2013	2014
Real GDP	*Growth rate (%)*	0.70	-1.70	-0.30	0.30	-4.10	-2.10	-0.30
GDP deflator	*Growth rate (%)*	1.40	1.00	1.00	0.90	0.00	-0.70	0.10
Nominal GDP	*Growth rate (%)*	2.10	-0.70	0.70	1.20	-4.10	-2.80	-0.20
Harmonized Index of Consumer Prices	*Growth rate (%)*	3.10	1.80	1.60	1.40	1.07	0.00	0.30
Unemployment rate	*% of labor force*	21.60	23.80	23.50	23.40	25.03	26.80	27.20
Exchange rate against USD	*$/€. end of period*	1.39	1.34	1.33	1.30	1.34	1.33	1.30
Madrid Stock Exchange Index	*Growth rate (%)*	-14.60	-1.30	-0.40	0.00	-51.30	-5.00	0.00
Credit to other resident sectors:								
> Households	*Growth rate (%)*	-1.50	-3.80	-3.10	-2.70	-6.83	-6.80	-4.00
> Non-financial firms	*Growth rate (%)*	-3.60	-5.30	-4.30	-2.70	-6.40	-5.30	-4.00
Short-term interest (Euribor. 3m)	*End of period (%)*	1.40	0.90	0.80	0.80	1.90	1.80	1.80
Euribor. 12m	*End of period (%)*	2.00	1.60	1.50	1.50	2.60	2.50	2.50
Long-term interest (Spanish debt. 10y)	*End of period (%)*	5.60	6.40	6.70	6.70	7.40	7.70	7.70
House prices	*Growth rate (%)*	-5.60	-5.60	-2.80	-1.50	-19.90	-4.50	-2.00
Land prices	*Growth rate (%)*	-6.70	-25.00	-12.50	-5.00	-50.00	-16.00	-6.00

Figure 4: Base and adverse scenario

The base scenario comprised macroeconomic projections for the specified variables that reflect an “expected economic development” over the next three years. The adverse scenario assumed a pessimistic view of Spain's economic development.

While the base scenario is close to the economic development so far, the adverse scenario is harsh. Real GDP change is forecast at -4.1% in 2012 (figure 5). This change would represent the worst GDP decline in Spain since the introduction of democracy and free markets in the late 1970s. The decrease in GDP continues with -2.1% in 2013 and -0.3% in 2014. In contrast, current data for Q1 2012 indicate a -0.4% change in GDP[1]. Consensus forecasts from June moreover estimate a decline of GDP by only -1.6% in 2012 as a whole and a positive GDP change already in 2014.

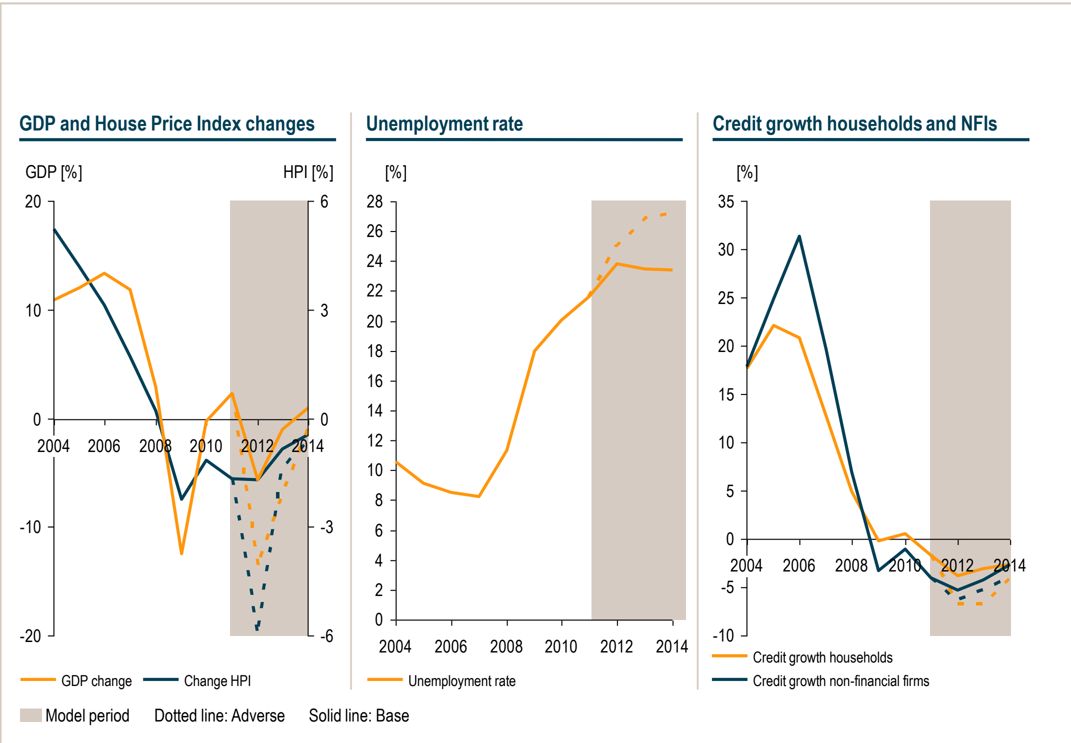


Figure 5: Comparison of key macroeconomic variables

4. Model approach

Initially, the relevant data input and sources were assessed and clarified, shaping the assumptions and initial model design. In the second step, the evolution of P&L and credit write-downs' components was modelled to vary with macroeconomic factors and the given scenarios.

[1] Source: Bloomberg

An overview of the model approach is provided in figure 6.

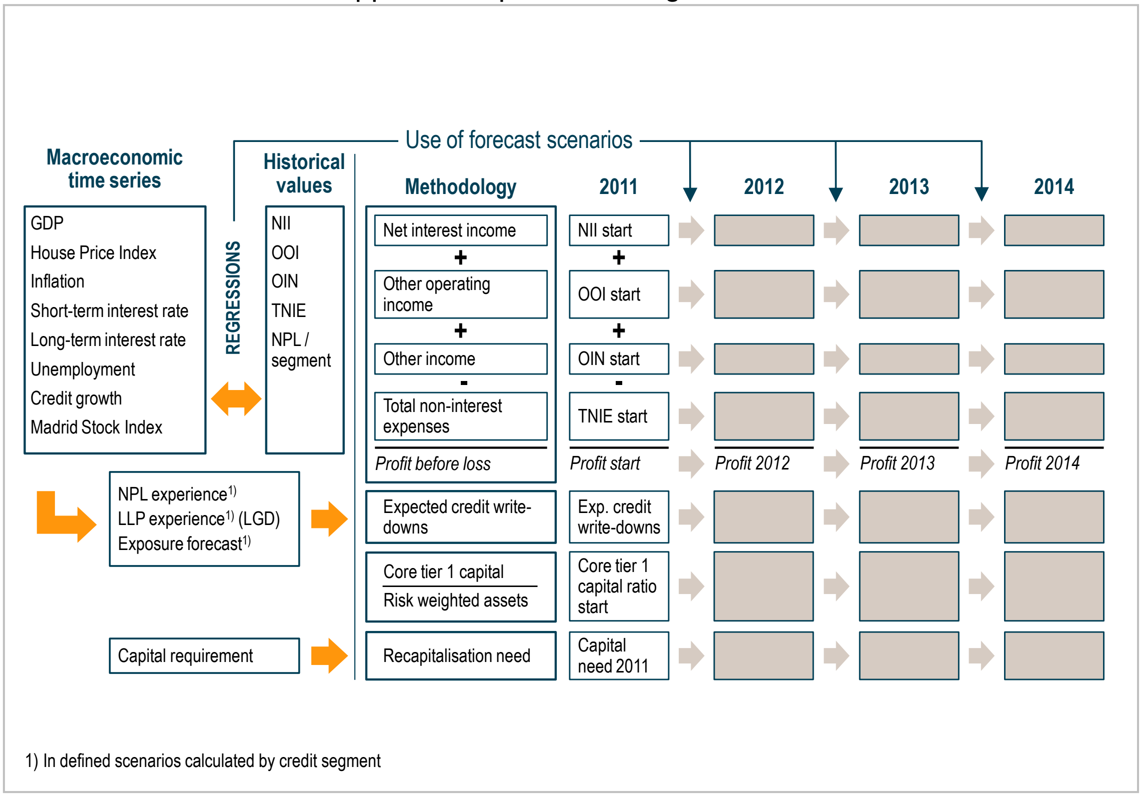


Figure 6: Overview of the model approach

All calculations were performed using internal Banco Mediolanum data. For some calculation steps, the model drilled down to segment-level calculation following the Banco de España credit risk distribution template (abbreviated to DRC in Spanish). In such cases, the segments considered were:

- Commercial real estate (CRE)
- Infrastructure and civil construction finance (ICC)
- Corporate lending (COR)
- Small and medium-sized enterprises (SME)
- Retail mortgage lending (RMO)
- Other retail lending (RET)

However, not all data was available in the granularity or the time period required. To some extent, existing data gaps could be bridged by using data either from external sources, from the Roland Berger Benchmark Database or by using methodological workarounds in the model. The missing data are not expected to have critical impacts on the final outcome since this is normal for non-Basel II IRB banks that do not measure e.g. PDs over time with internal models.

Specifically, the Banco Mediolanum time series were rather short, ranging from 2008 to 2011 for most parameters. However, this data situation is expected for a bank of the size of Banco Mediolanum and did not constitute a major obstacle. In particular it does not invalidate the stress test results.

Credit write-downs, projection of P&L and core tier 1 capital needed to be based on a number of assumptions to counter data limitations – this is not specific to Banco Mediolanum and is the same approach as used in the Banco de España stress tests. These assumptions concerned both variables' development through 2014 and their sensitivity to macroeconomic factors. Figure 7 describes the main assumptions for the calculation of these three main workstreams:

- Credit write-downs
- P&L components
- Core tier 1 capital

Main assumptions of the model

CREDIT WRITE-DOWNS

> Start values for default rate computation 2012-2014 derived **from 2011 benchmarks** and realized NPL ratios for the bank and each **segment for 2008-2011**

> LTV depends on the variation of **housing prices** and **gross domestic product**

> EADs modeled individually **for each asset class/credit segment based on credit growth defined**

> Dynamic **reallocation of risk capital**

P&L ITEMS

> For **net interest income**, other operating income, other income and total non interest expense the forecast 2012-2014 was based on statistical models using **historical P&L data from all banks** in the sample against historical development of selected macroeconomic factors

> **Future loan loss provisions** assumed to be equal to **credit write-downs**

> Corporate income **tax effects** were considered, but are not relevant given the stressed NI environment

CORE TIER 1 CAPITAL

> Profits incurred in 2012-2014 by the bank and under any scenario **assumed to be 100% retained to increase core tier 1** capital

> For computation of **credit risk weighted assets, the bank has been assumed to be IRB bank** – as in the Spanish Stress test, for banks such as Banco Mediolanum that use the standard approach a corrective factor was used

> For each bank shares of operational risk and market risk as part of overall risk weighted assets were calculated for 2011 and assumed to **remain constant for the next years**

Figure 7: Key assumptions

Credit write-downs were calculated under the Basel II framework, considering segment-specific evolution of PD, LGD and EAD. Since PD expresses ex-ante probability of default (i.e. new NPL entries), the sensitivity of future PDs to macroeconomic factors can be approximated through examining historical sensitivity to NPL ratios (i.e. ex-post probability of default), which was used as proxy. LGD were modeled as evolving in line with housing prices and credit growth, both at a segment and at a bank-level. Detail of the rationale behind the evolution of credit write-downs' components is presented in figure 8.

Credit risk parameters

KEY PARAMETERS	GENERAL DRIVERS	OUR CALCULATION LOGIC
Probability of default (PD)	> General economic development (e.g. unemployment, GDP, etc.) > Rating of counterparty	> Calculated per segment based on NPL ratios > Calculation of bankspecific parameters for every segment by running bank specific adjustments
Loss given default (LGD)	> Value of collateral at liquidation rates > Present value loss in case of restructuring > Restructuring costs	> Calculated per segment and on bank level, based on rates of liquidation, cure and restructuring > Dependent on the loan-to-value, workout costs as well as recovery rates for the collateralized and uncollateralized part
Exposure at default (EAD)	> Underlying commitment details > Use of open credit lines	> Calculated on bank level based on credit growth per segment > Redemption, kick-in of guarantees and drawing of commercial credit lines are assumed to be fully reflected in credit growth > Partial replacement of defaulted loans is assumed

Figure 8: Credit write-down calculation parameters

Furthermore, through the conversion from the asset classification to the relevant segments (Corporate lending, SME lending and Retail Mortgage lending) the percentage is reduced from 17% to 15% due to conversion adjustments.

The EAD (credit exposure) was assumed to develop as follows:

- Retail mortgage exposure to increase in line with strategic plans of Banco Mediolanum (increase by 15 Mio EUR in 2012, 18 Mio EUR in 2013 and 21 Mio. EUR in 2014)
- Reduction of corporate and SME exposures by the amounts of credit shrinkage as defined in the scenario (0% - 6% per year – see scenario for details)
- Constant exposure for the non-included segments (banks, sovereigns, local authorities etc.)

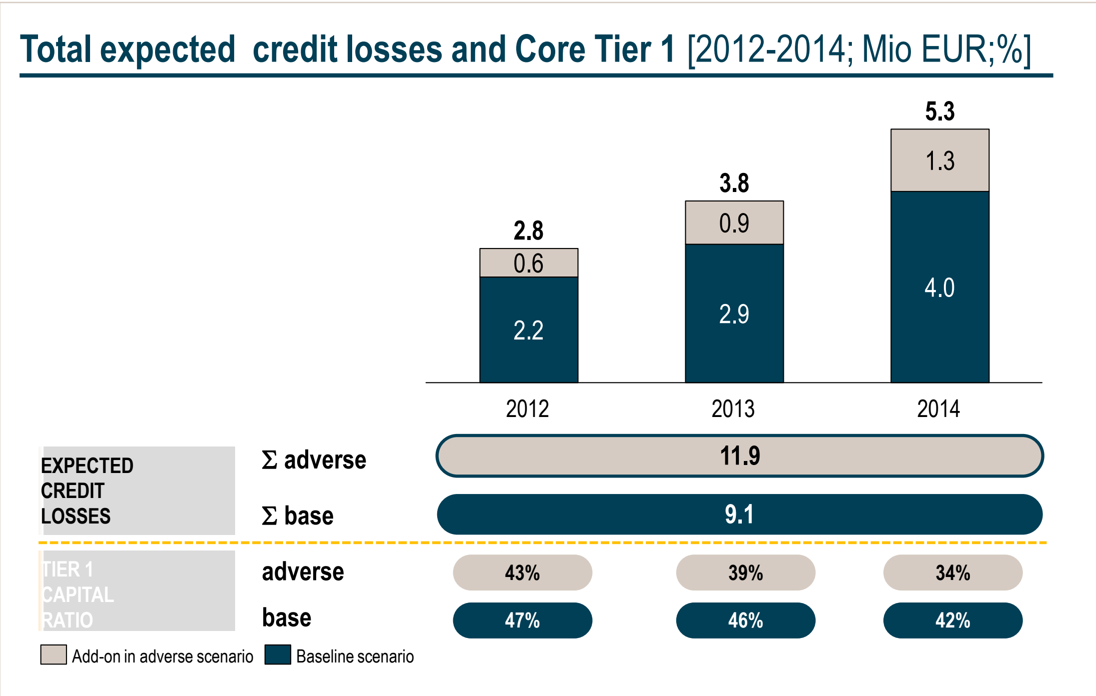
Regarding P&L components, historical data series on net interest income (NII), other operating income (OOI), other income (OIN), and total non-interest expenses (TNIE) were used to test these variables' sensitivity to macroeconomic factors and project their evolution for 2012 through 2014. This impact was deduced incrementally, that is, stressed earnings and losses (net of provisions) reduce available capital at the end of each year taking the core tier 1 capital in 2011 as starting point.

Depending on the target capital ratio, capital needs could then be computed for each scenario (net of capital injections since beginning of 2012). For these calculations, the Basel II formula for core tier 1 for non-IRB banks has been used.

5. Results

The core tier 1 ratio of Banco Mediolanum at the start was very high representing a ‘low risk’ strategy of Banco Mediolanum compared to the Spanish banking market, further reinforced by the reduced risk assumed not entering in commercial real estate business segment.

Given this high core tier 1 ratio – reflecting a low-risk strategy in its credit risk loan portfolio - and the small fraction that the overall credit risk loan portfolio represents in the total balance sheet exposure was affected by the defined stress scenarios together with its no real estate risk exposure that, Banco Mediolanum does not face any recapitalization needs under those scenarios. Therefore, Banco Mediolanum will belong to the Tier 1 group such as Santander, BBVA and Caixabank which is the group with no capital needs.



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