

# **ICAAP 2016**

**Outcomes** 

Siena April 2017

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#### 1. Foreword

Pursuant to Banking Supervision discipline and regulation, MPS Group carries out the **Internal Capital Adequacy Assessment Process** (hereafter, **ICAAP**) on an *on-going* basis and summarises the main outcomes and findings in this document.

The institution, entitled to evaluate its own capital adequacy (in terms of internal capital, governance and processes) with respect to all the relevant risks existing and/or arising from its specific corporate strategy, aimed at fully complying with principles contained in *EBA Guidelines on ICAAP and ILAAP information collected for SREP purposes* and *EBA Guidelines on common procedures and methodologies for supervisory review and evaluation process (SREP)*.

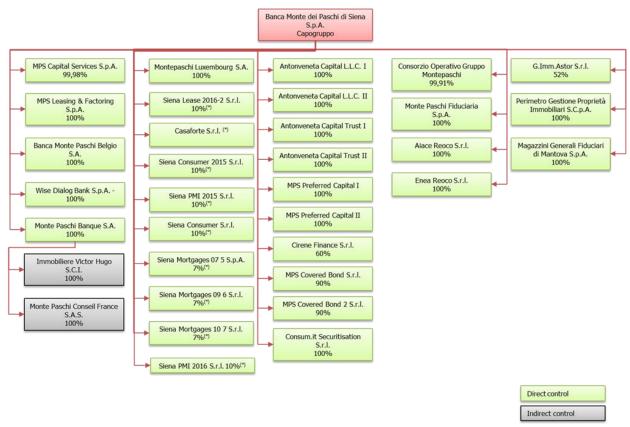
The assessment has been carried out by looking at the Group capital adequacy in a holistic manner. This approach turned out into a consistent exercise, conducted along a multi-year period (from the end-of-year 2016 to 2019) and supported by hypotheses on macroeconomic scenarios, relatively to both "business as usual" and adverse conditions (stress and "reverse" stress testing). The process also includes an evaluation of the internal processes for highlighting eventual areas of improvement.

This document provides evidence on the results of the key steps of the process, which led to the Group overall adequacy (in terms of both capital position and internal processes) self-assessment. In particular, the document is articulated as follows:

- Section 1 general induction to the Group current business model and to key strategic guidelines.
- Section 2 description concerning the Capital Adequacy Framework in place for the Group, methodology and schemes inherently to risk identification, risk integration and capital adequacy thresholds definition. The section provides evidence regarding the prospective scenarios (baseline and adverse) through which forward-looking measures on Regulatory RWA, Internal RWA and P&L impacts have been estimated, in order to assess the adequacy of Group Own Funds, respecting regulatory minimum capital requirements. The section ends with the description of the "reverse stress test" exercise developed for the Group.
- Section 3 assessment of the internal controls and processes in place and description of results concerning the Group adequacy, deriving from the application of the Internal Controls Score System, used for RAF purposes.
- **Section 4** conclusion on the Group overall internal capital adequacy assessment process and information about the Action Plan defined according to main evidences.

#### 2. Introduction

In order to exhaustively investigate all the relevant risks which the Group is or might be exposed to, and to consequently assess the internal capital adequacy, the institution has carried out the ICAAP on a Group-basis. As a matter of fact, the internal assessment involved all the Legal Entities which contribute to consolidated Balance Sheet and consolidated Income Statement. The following figure shows the structure of the **Banking Hub** (led by the parent company "Banca Monte dei Paschi di Siena SpA"), as at 31 December 2016.



(\*) Companies under de facto control

Within the ICAAP scope, the institution assessed its own overall capital adequacy by taking into account the **Group Strategic Guidelines** contained in the new Restructuring Plan for the period 2017-2021<sup>1</sup>. Among the main strategic milestones<sup>2</sup>, the Group will pursue the following objectives:

- A. Disposal of Bad Loans portfolio;
- B. Refocusing on Retail banking activities;
- C. Renewing the Operating Model restoring efficiency;
- D. Improving Credit Risk management;
- **E.** Strengthening Capital and Liquidity position.

The strategic guidelines, underlying the new Business Plan, and the resulting business, capital and risk profile (current and prospective) of the Group on which the ICAAP has been carried out, have been generated

<sup>&</sup>lt;sup>1</sup> The new Restructuring Plan, approved by the Board of Directors on March, 9<sup>th</sup> 2017, is currently under review of the *Directorate-General for Competition* (hereafter, **DG COMP**).

<sup>&</sup>lt;sup>2</sup> More details concerning Group **business model and strategies** are available in the *ad-hoc* internal documentation included within ICAAP Reader's Manual.

coherently with scenario analyses developed (concerning the evolution of both macroeconomic and idiosyncratic items).

Complying with Banking Supervision regulation, further "adverse" scenario analyses have been conducted in order to provide the internal capital adequacy assessment even in distressed conditions.

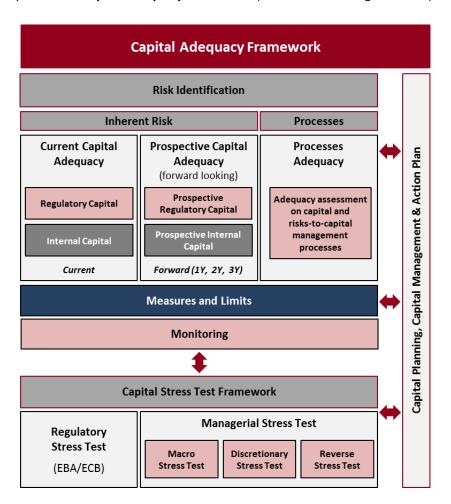
In line with EBA guidelines, which emphasise a solid governance and processes framework as key pillars to be evaluated within the SREP scope by competent authorities, the institution developed the assessment of its internal processes and directives/policies/regulation framework concerning management of risks, identifying areas of improvement, gaps with respect to normative requirements and potential remedial actions.

## 3. Capital Adequacy

#### 3.1. Capital Adequacy Framework

The ICAAP is the result of a complex organisational process, connected with Risk Appetite Framework and other strategic processes, which requires the involvement of several structures and expertise (Planning Department, Risk Management, Internal Audit, Accounting, etc.) and the contribution of the Subsidiaries within the Group, in order to entirely evaluate strengths and weaknesses of risk positions, management processes and controls.

With the purpose to lead an exhaustive analysis (with current and forward-looking perspective), the Group established a comprehensive **Capital Adequacy Framework** (illustrated in the figure below).



The institution developed such framework proportionally to Group dimension, business model, strategies, complexity and risk profile and according to market best practices. Relying on this framework, the Group ensures a consistent internal capital adequacy assessment providing:

- the identification and assessment of all risks-to-capital and risks-to-liquidity which the Group is or might be exposed to (taking into account also risks which could arise under distressed conditions);
- the determination of overall **capital adequacy thresholds** according to all risk types identified (both measured and not measured;
- current and prospective measurement and assessment of the Group adequacy under a dual
  perspective, both quantitative (capital adequacy) and qualitative (processes adequacy evaluating
  efficacy of risk management and control processes);
- the adequate management of risks through the definition and monitoring of a coherent limits system and risk policies and procedures.

As mentioned, the Group provide its own adequacy assessment even with respect to potential adverse scenarios (cf. **Capital Stress Test Framework**), developing the latter according to regulatory and internal (managerial) normative requirements.

To conclude, the Group manages the capital adequacy according to an *on-going* basis. Risk monitoring and limits system allow, in case of inadequacy, the institution to promptly activate escalation mechanism, evaluating the potential review of strategic plans and/or the redaction of action plans.

#### 3.2. Risk identification and assessment

As mentioned, the Group provided firstly the risk identification, in order to assess, in a holistic way, all the relevant risks the Group is or might be exposed to, basing on Group structure, business model and strategic guidelines<sup>3</sup> (focusing on existing and/or emerging risks).

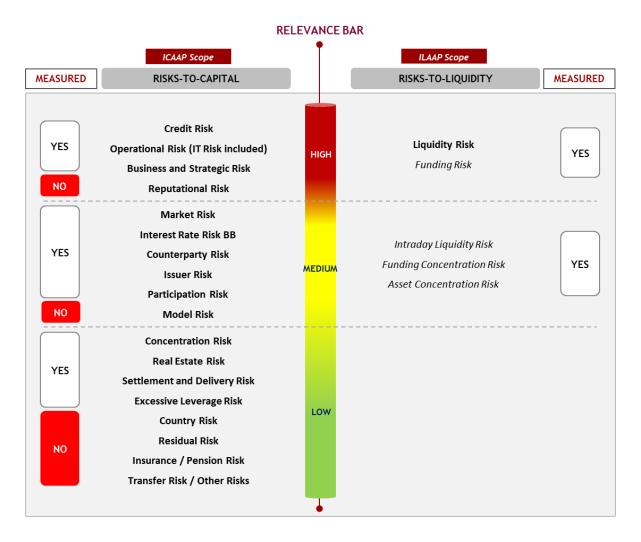
Synthetically, the risk identification process<sup>4</sup> is based upon the following steps:

- External Environment Analysis;
- Business Model and Strategies Analysis;
- MPS Group Risk Identification and Taxonomy (connection with SSM Risk Map).

The output of the analysis carried out for the ICAAP 2016 is shown in the following figure.

<sup>&</sup>lt;sup>3</sup> More details on Restructuring Plan are available in the file *Delibera\_Cda\_RestructuringPlan\_9marzo17.pdf* included within ICAAP Reader's Manual.

<sup>&</sup>lt;sup>4</sup> More details concerning Risk Identification Process are available in the file **1.1.15\_2017-03-09 - RAS2017 Linee Guida.pdf** included within ICAAP Reader's Manual.



Concerning risks-to-liquidity, pursuant to SREP Guidelines, the Group carries out the Internal Liquidity Adequacy Assessment Process (ILAAP).

Therefore, subsequent analyses are developed and presented referring only to risks-to-capital.

#### 3.3. Risk Integration and Capital Adequacy Thresholds

Within the ICAAP scope and basing on the risk identification outputs, the Group proceeded to the assessment of internal capital adequacy relying on the **Pillar 1 Plus approach**. Such methodology mainly takes into account the Pillar 1 risks and the significant measurable Pillar 2 risks (those identified). In the case of **Market Risk**, the Group considers, under Pillar 2 approach, an internal model for quantifying the Internal Capital, instead of Pillar 1 methodology.

The **additional Pillar 2 risks** identified for the institution are the following:

- Market Risk, including additional risk factors, such as credit spread for the AFS portfolio;
- Interest Rate Risk on Banking Book (IRRBB);
- Concentration Risk;
- Business and Strategic Risk.

Pursuant to ECB expectations, the Group verified its own capital adequacy under Pillar 2 regime, hence, considering the resulting additional capital requirements (together with Pillar 1 minimum capital requirements and capital buffers, as prescribed by European regulations and directives). Internal Capital

Requirements for each risk are added up (**Building Block approach**) without considering inter-risk diversification.

Moreover, the Group decided to set capital thresholds prudentially including a further discretional capital buffer (*MPS Buffer*) to cover risks not measured (reputational risk, model risk) and possible governance failures.

Concerning the ICAAP 2016, the described approach turns out into the quantification of the following **capital adequacy thresholds** (basing on Regulatory RWA and Internal RWA estimates, in baseline scenario<sup>5</sup>), illustrated in the table below.

		CAPITAL ADEQUACY THRESHOLDS									
MONTEPASCHI GROUP	Current		Baseline			Last SREP Decision					
%	dic-16	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	Decision			
PILLAR I											
CET1 ratio of which	10,39%	11,32%	11,80%	11,94%	6,31%	6,07%	5,52%	10,75%			
Regulatory Minimum	4,50%	4,50%	4,50%	4,50%	4,50%	4,50%	4,50%				
Add-on P1 and P2	1,62%	1,81%	1,57%	1,02%	1,81%	1,57%	1,02%				
Capital Buffers (CCB, O-SII, CCyB)	2,50%	1,25%	1,94%	2,63%	0,00%	0,00%	0,00%				
Shortfall Combined Buffer	1,27%	3,27%	3,29%	3,29%	0,00%	0,00%	0,00%				
MPS Buffer	0,50%	0,50%	0,50%	0,50%	0,00%	0,00%	0,00%				
T1 ratio	10,39%	11,32%	11,80%	11,94%	7,81%	7,57%	7,02%				
Total Capital ratio	10,39%	11,32%	11,80%	11,94%	9,81%	9,57%	9,02%	10,90%			
PILLAR II											
Internal Capital ratio	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%	8,00%				

The capital adequacy thresholds are consistent with respect to Risk Capacities defined within the RAS scope.

The definition of capital adequacy thresholds in adverse scenario relies on the following assumptions:

- absorption of regulatory capital buffers stored in "business as usual" conditions eventual increases from baseline to adverse scenario are assumed to be covered by buffers as well;
- total depletion of *MPS Buffer* to absorb, up to buffer capacity, effects deriving from distressed conditions manifestation.

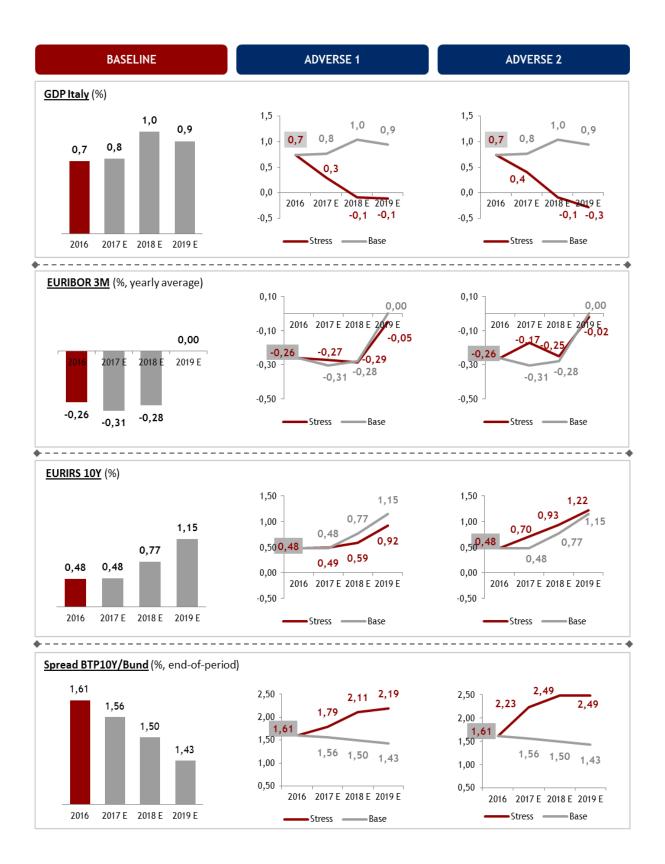
#### 3.4. Main scenario assumptions

The Group provided the capital adequacy assessment considering its own current and prospective capital position (2016-2019). In so doing, both baseline and adverse scenarios (2) have been comprehensively implemented, by developing assumptions concerning the evolution of macroeconomic scenarios<sup>6</sup>.

Regarding **macroeconomic scenarios**, the Group considered the main variables evolution shown in the following figures.

<sup>6</sup> More details concerning the description of the two Adverse Scenarios are available in the file **1.1.15\_2017-03-09 - RAS2017 Linee Guida.pdf** included within ICAAP Reader's Manual.

<sup>&</sup>lt;sup>5</sup> Complete evidences will be provided in the following paragraphs.



On the other hand, the additional items considered to comprehensively investigate prospective scenarios, especially referring to potential future distressed conditions, are the following:

- Operational Losses;
- Net Interest Income, relatively to "additional cost of funding" sub-component;
- Net Trading Income.

#### 3.5. Risk-Weighted Assets

The following table shows the current measures and the prospective estimates concerning the Regulatory RWA and the Internal RWA deriving from the situation of the Group as at 31.12.2016 (current measures) and resulting from the application of the scenarios (baseline and adverse) for the period 2017-2019 (prospective estimates).

Referring to the expected profile (**baseline scenario**), inherently to overall Group risk position, the main evolutions are summarised as follows:

#### Pillar 1 (Regulatory RWA)

- Credit risk (lending exposures): the initial increase between the end-of-year 2016 and 2017 is mainly
  due to the introduction of RWA on defaulted assets, residual after the NPL disposal; on the other
  hand, the successive reduction, through the biennium 2018-2019, reflects the Restructuring Plan
  hypotheses on global lending portfolio, mainly concerning the deleveraging of corporate portfolio
  and the growth of short-term and medium-long term loans, respectively towards the segments Small
  Business and Retail.
- Market Risk: the increase in the 2019 is related to an estimate of a +40% effect due to the Fundamental Review of the Trading Book.
- **Operational risk**: RWA increase is mainly explained by the development of the new AMA model (including methodological changes, as requested by the European Central Bank).
- **Settlement and Delivery risk**: the RWA measure, at the end-of-year 2017, arises as consequence of the 1-year deferred payment of a portion of NPL portfolio to be disposed.

#### Pillar 2 (Internal RWA)

- Market risk (AFS portfolio): the reduction, starting from 2018, of the Internal RWA is mainly driven
  by the Restructuring Plan hypothesis concerning the duration reduction and diversification of the
  Sovereign portfolio, even in front of new purchases of Corporate&Financial bonds.
- Interest Rate risk on Banking Book: the increase in the biennium 2017-2018 is strictly driven by two main hypothesis of the Restructuring Plan: NPL disposal (as a "fixed-rate" amortising portfolio) and AFS portfolio interest rate duration reduction. It results into an asset-sensitive positioning of the Group which makes the Internal RWA increase, given a parallel-down shift scenario concerning interest rates curve. Such effects are strongly mitigated (with evident effects in 2019) by the new commercial offer regarding medium-long term floating-rate loans (e.g. loans with embedded floor on market parameter).
- **Concentration risk**: the jump of the Internal RWA estimated for the 2017 is exclusively due to the exposures arising from the 1-year deferred payment of a portion of NPL portfolio to be disposed.

Concerning the **adverse scenarios**, the resulting differences in Group risk position, with respect to baseline scenario, are due to the following main hypotheses:

#### Pillar 1 (Regulatory RWA)

 Credit risk (lending exposures): worsening of recovery rates and default flows through the period, mainly driven by the worse macroeconomic scenario. • **Operational risk**: it has been considered a potential inefficacy in mitigating legal/fiscal/labour disputes, arising in the context of Restructuring Plan realisation.

#### Pillar 2 (Internal RWA)

• Interest Rate risk on Banking Book: the increase with respect to baseline estimates is due to the inclusion, in adverse projections, of an *add-on* component which considers potential risks arising from behavioral modeling, changes in rates volatilities and the short-term basis risk.

The main relevant methodological change (with the respect the previous ICAAP) concerns Concentration risk. More details are available in the file 1.4.09\_Concentration Risk.pdf included in the ICAAP Reader's Manual.

Montepaschi Group	Cur	rent		Baseline			Adverse #1			Adverse #2		
Regulatory / Internal RWA (Eur mln)	dic-16	% of the Total	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	
Credit and Counterparty Risk	53.521	67,9%	55.542	54.076	53.327	56.275	56.100	56.064	55.943	55.044	54.975	
Credit Risk	40.477	51,4%	42.196	41.091	40.364	43.530	43.760	44.175	43.520	43.065	43.507	
AIRB	29.918	38,0%	33.230	32.185	31.480	34.578	34.787	35.184	34.561	34.285	34.750	
Standard	10.559	13,4%	8.966	8.906	8.884	8.952	8.973	8.991	8.959	8.780	8.757	
Counterparty Risk - Default Risk	2.285	2,9%	2.654	2.622	2.622	2.290	2.293	2.298	2.261	2.261	2.266	
Issuer Risk Banking Book	1.673	2,1%	2.143	2.143	2.143	2.143	2.143	2.143	2.143	2.143	2.143	
Market Risk Banking Book	196	0,2%	196	196	196	196	196	196	196	196	196	
Participation Risk	1.715	2,2%	2.360	2.360	2.360	2.360	2.245	2.005	2.360	2.199	1.982	
Real Estate Risk	2.219	2,8%	2.219	2.219	2.219	2.219	2.219	2.219	2.219	2.219	2.219	
DTA	3.538	4,5%	2.357	2.028	2.006	2.120	1.827	1.611	1.826	1.544	1.244	
Other	1.417	1,8%	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	
Market Risk	3.046	3,9%	3.046	3.046	4.264	3.046	3.046	4.264	3.046	3.046	4.264	
Market Risk Trading Book	2.810	3,6%	2.810	2.810	3.935	2.810	2.810	3.935	2.810	2.810	3.935	
Issuer Risk Trading Book	235	0,3%	235	235	329	235	235	329	235	235	329	
Operational Risk	8.476	10,8%	9.833	10.089	10.596	10.372	11.238	12.111	10.795	11.715	12.656	
Counterparty Risk - CVA	480	0,6%	480	480	480	480	480	480	480	480	480	
Settlement and Delivery Risk	-	0,0%	4.267	-	-	4.267	-	-	4.267	-	-	
REGULATORY RWA	65.522	83,1%	73.168	67.691	68.666	74.440	70.863	72.918	74.531	70.284	72.375	
Market Risk	7.476	9,5%	7.319	5.514	5.164	7.319	5.514	5.164	7.319	5.514	5.164	
Market Risk AFS	6.733	8,5%	6.525	4.690	4.243	6.525	4.690	4.243	6.525	4.690	4.243	
Market Risk HFT	743	0,9%	795	824	921	795	824	921	795	824	921	
Interest Rate Risk BB	2.705	3,4%	4.400	5.172	1.969	5.874	5.986	2.489	5.874	5.986	2.489	
Concentration Risk	1.138	1,4%	3.063	1.138	1.138	3.063	1.138	1.138	3.063	1.138	1.138	
Business and Strategic Risk	4.990	6,3%	4.822	4.498	4.642	4.822	4.498	4.642	4.822	4.498	4.642	
INTERNAL RWA*	78.824	100,0%	89.766	81.006	77.447	92.511	84.992	82.219	92.602	84.413	81.676	

<sup>\*</sup> Total RWA Equivalent are obtained by adding to Pillar 1 Total RWA the additional Pillar 2 capital (Market Risk, IRRBB, Concentration Risk and Business and Strategic Risk) and subtracting the two Pillar 1 RWA components "Market Risk Banking Book" and "Market Risk Trading Book".

#### 3.6. Own Funds

According to current measures and to the set of hypotheses driving the development of the prospective scenarios (in turn, coherently with strategic drivers included in the Restructuring Plan 2017-2021), the Group quantified the following impacts on consolidated Income Statement:

Montepaschi Group	Current		Baseline			Adverse #	<sup>1</sup> 1	Adverse #2			
%	dic-16	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	
P&L											
Revenues	4.282	3.822	3.856	3.981	3.452	3.476	3.398	3.231	3.398	3.307	
Net Interest Income	2.021	1.803	1.804	1.848	1.672	1.545	1.465	1.644	1.498	1.432	
Net Commission Income	1.839	1.719	1.806	1.908	1.703	1.786	1.878	1.699	1.773	1.861	
Other	421	300	245	225	77	144	56	-111	128	14	
<b>Operating Costs</b>	-2.621	-2.536	-2.468	-2.443	-2.536	-2.468	-2.443	-2.536	-2.468	-2.443	
Loan Loss Provisions	-4.501	-1.004	-673	-569	-1.381	-1.206	-1.209	-1.421	-1.229	-1.215	
Non Operating Items (+/-)	-339	-4.220	-742	-435	-4.290	-812	-505	-4.310	-832	-525	
Pre-tax profit	-3.179	-3.939	-28	534	-4.755	-1.010	-759	-5.036	-1.130	-876	
Net Result	-3.241	-3.986	-68	641	-5.249	-1.198	-837	-5.527	-1.320	-957	

Basing on these P&L impacts and planned strategies, approved in the Restructuring Plan, this paragraph presents the resulting Group **Own Funds** for the period 2016-2019, in baseline and adverse scenarios.

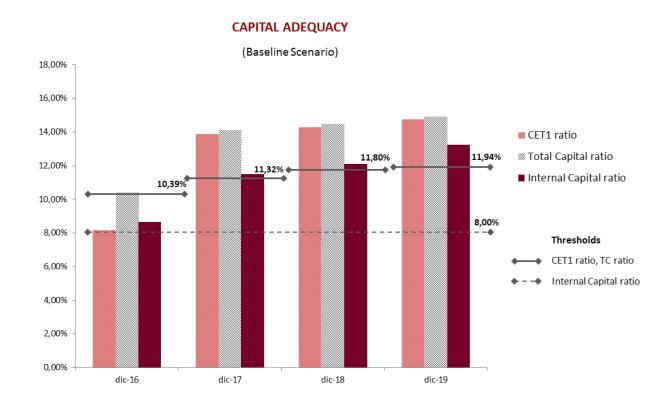
Among all the aspects regarding the Own Funds evolution through the period and in different business conditions (baseline and adverse), it is worth highlighting the substantial increase of Common Equity Tier 1 capital in 2017, due to Capital Increase action as included in the Restructuring Plan, and the decrease of the Tier 2 capital in 2017, due to the T2 instruments conversion. Contextually, such effect is partially off-set by the associated restructuring costs.

MONTEPASCHI GROUP	Current	Baseline			Adverse #1			Adverse #2		
(Eur mln)	dic-16	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19
OWN FUNDS										
Common Equity Tier 1 (of which)	5.353	10.156	9.678	10.120	9.100	7.451	6.509	8.623	6.842	5.891
Capital and reserves	9.492	15.285	11.034	10.905	15.236	9.528	8.265	15.033	9.028	7.730
of which										
AFS Reserve for EU Government Bond	40	12	-56	-100	-37	-299	-346	-240	-521	481
Net result for the period (CET1 Eligible)	-1.945	-3.189	-68	641	4.199	-1.198	-837	-4.422	-1.320	-957
Intangibles	403	-423	-399	-339	-423	-399	-339	-423	-399	-339
Prudential filters	-523	-390	-311	-310	-423	-342	-339	-423	-342	-339
DTAs (Tax loss carry forward)	-184	-329	-578	-776	-	-70	-175	-	-64	-151
Basel III deductions subject to CET1 threshold	-291	-	-	-	-40	-68	-67	-36	-60	<i>-53</i>
IRB Shortfall to expected losses	-	-	-	-1	-	-	-	-	-	-
AT1 excess deduction	-793	-797	-	-	-1.050	-	-	-1.105	-	-
Additional Tier 1 (of which)	-	-	-	-	-	-	-	-	-	-
AT1 capital instruments	574	-	-	-	-	-	-	-	-	-
Basel III deductions (phase out)	-71	-	-	-	-	-	-	-	-	-
Net result for the period (AT1 Eligible)	-1.296	-797	-	-	-1.050	-	-	-1.105	-	-
AT1 Insufficiency	793	797	-	-	1.050	-	-	1.105	-	-
Tier 1	5.353	10.156	9.678	10.120	9.100	7.451	6.509	8.623	6.842	5.891
Tier 2 (of which)	1.464	172	132	128	180	148	150	180	145	148
T2 capital instruments	1.368	-0	-0	-0	-0	-0	-0	-0	-0	-0
Excess Capital on IRB Shortfall (Eligible T2)	182	-	-	-	-	-	-	-	-	-
Basel III deductions (phase out) and other elements	-86	172	132	128	180	148	150	180	145	148
TOTAL CAPITAL	6.817	10.327	9.810	10.248	9.280	7.599	6.659	8.803	6.987	6.038

#### 3.7. Capital Adequacy Assessment

This paragraph highlights the results of the capital adequacy self-assessment led by the Group, according to capital adequacy thresholds and the quantification of P&L impacts, Regulatory RWA, Internal RWA and Own Funds provided.

Montepaschi Group	Current	Baseline			A	dverse #	1	Adverse #2		
%	dic-16	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19
PILLAR I										
CET1 ratio	8,17%	13,88%	14,30%	14,74%	12,23%	10,51%	8,93%	11,57%	9,73%	8,14%
T1 ratio	8,17%	13,88%	14,30%	14,74%	12,23%	10,51%	8,93%	11,57%	9,73%	8,14%
Total Capital ratio	10,40%	14,11%	14,49%	14,92%	12,47%	10,72%	9,13%	11,81%	9,94%	8,34%
PILLAR II										
Internal Capital ratio	8,65%	11,50%	12,11%	13,23%	10,03%	8,94%	8,10%	9,51%	8,28%	7,39%

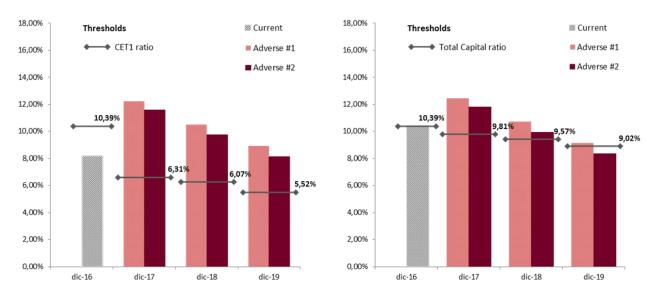


With respect to capital adequacy thresholds illustrated in paragraph 3.3, the Group breaches the CET1 capital ratio requirement at the date of 31.12.2016. Nevertheless, with the purpose to restore an adequate capital position, hence respecting, at any time, all regulatory and internal minimum capital requirements, the Group has drawn up the Restructuring Plan 2017-2021, approved by the Board of Directors on March, 9th 2017 and currently under review of the DG COMP, containing the capital increase for 8,8 €/bn and T2 instruments conversion.

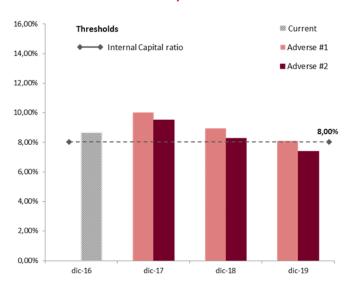
The following figures illustrate the results of the capital adequacy self-assessment in the two adverse scenarios considered. As mentioned in the relative paragraph, capital adequacy thresholds in adverse scenario have been set considering the possibility to absorb the capital buffers (regulatory and managerial) stored in "business as usual" conditions.



#### **Total Capital ratio**



#### **Internal Capital ratio**



The capital position of the Group in the period 2017-2019 would result substantially adequate. However, in case of Adverse 2 scenario, the Group would not meet the total capital ratio and the internal capital ratio thresholds (9,02% and 8,00%, respectively) in the last year of stress (2019).

#### 3.8. Reverse Stress Testing

Reverse stress tests have the main goal to identify and analyse scenarios (both short and medium term) to challenge the viability of the institution's business model and strategic plan. In particular, reverse stress tests should focus on vulnerabilities that have not been covered in "direct" stress tests.

A reverse stress test exercise consists of four main steps:

- Identification of critical points at which the institution becomes failing or likely to fail, or its business model/strategic plan become unviable;
- Identification of the adverse circumstances that might cause the situation described above;

- Analysis of these scenarios, by:
  - developing a quantitative analysis, also with the help of sensitivity analysis;
  - describing a well-defined narrative (comprehensive of feedbacks and non-linear effects);
  - assessing the likelihood of the scenarios;
- Adoption of adequate processes and arrangements to prevent or mitigate the corresponding risks and vulnerabilities.

Within the ICAAP scope, firstly, the Group had to decide how determining the critical points at which the institution becomes failing or likely to fail, or its business model/strategic plan become unviable. The Group opted to use regulatory ratios (CET1 and Total Capital) for determining such critical points. The critical levels were set at 5.52% for CET1 Ratio and at 9.02% for Total Capital Ratios, according to the capital adequacy thresholds described in paragraph 3.3.

Secondly, the Group identified three main adverse circumstances that could lead to capital depletion:

- an increase in the Italian credit spread, affecting both the AFS reserve and net interest income, via cost of funding;
- a worsening of the economic growth, measured via GDP, affecting the cost of credit;
- the write-off of the interest on defaulted assets, affecting the net interest income, due to the not collectability.

Aiming at reducing the capital ratios toward the critical levels (again, 5.52% for CET1 Ratio and 9.02% for Total Capital Ratio) the group set target values for cost of credit, AFS reserve and net interest income accordingly.

Various series of macroeconomic events could lead to those target values. The Group explored, using sensitivities analysis, a wide set of possible scenarios, finally selecting two of them.

The first one mixes all three above mentioned factors (GDP, Italian credit spread and not collectability of interests on defaulted assets) in a medium term time horizon; the second one is created to outline critical levels for the Italian credit spread only, for the years 2018 and 2019.

The following table reports the results of the two selected scenarios:

Montepaschi Group	"Reverse	Stress" Sc	enario #1	"Reverse Stress" Scenario #2				
(Eur mln)	dic-17	dic-18	dic-19	dic-17	dic-18	dic-19		
Capital Impacts (vs baseline)	-1.403	-1.367	-1.433	-2.040	-2.435	-2.110		
AFS Reserve	-1.403	-1.367	-1.433	-2.040	-2.435	-2.110		
P&L Impacts (vs baseline)	-841	-762	-781	-332	-680	-739		
Cost of Credit	-313	-208	-200	0	0	0		
Cost of Funding	-228	-382	-502	-332	-680	-739		
Interests Write-off on Defaulted Asset	-301	-173	-80	0	0	0		
TOTAL (vs baseline)	-2.244	-2.129	-2.214	-2.372	-3.115	-2.849		
CET1 Ratio	11,20%	9,61%	8,82%	11,20%	8,81%	8,75%		
Total Capital Ratio	11,43%	9,81%	9,01%	11,43%	9,00%	8,94%		

The first scenario is calibrated over a three-year time horizon. It mixes effects of a mediocre GDP growth, a worsening of the Italian credit spread and a not collectability of the interest on defaulted asset. In 2019, the Total Capital Ratios is less than 9%.

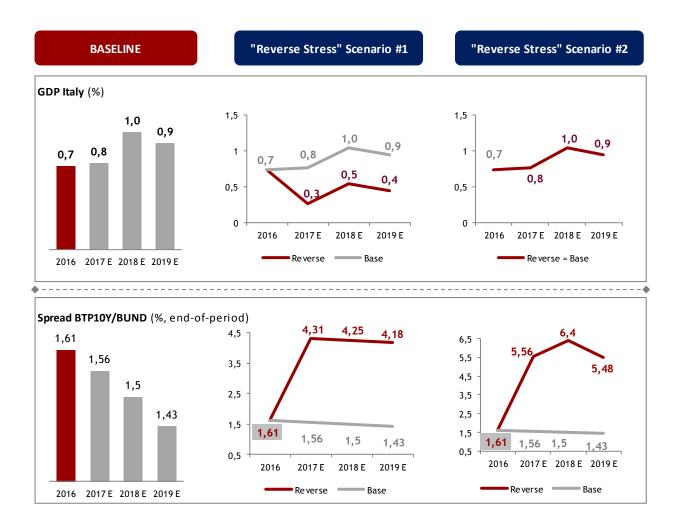
In the second scenario, instead, all economic variables are equal to the baseline scenario, with the exception of the Italian credit spread. In this scenario, both 2018 and 2019 Total Capital Ratios are under the critical threshold of 9%, signaling a possible crisis in the viability of the Group's strategies.

#### **Scenarios Description**

The starting point of both scenarios is December 31, 2016. The scenarios have been drafted as deviation from the baseline scenario, hence assuming the same restructuring plan and business actions.

In the first scenario, the Italian GDP is slightly worse than in the baseline scenario, exactly with a decrease of 0.5% each year. Due to political turmoil, both domestic and global, the Italian credit spread increases by 275 basis points at the end of 2017; such increase remains constant in 2018 and 2019. In addition, the Group, due the not collectability, writes off 100% of interest on defaulted assets along the three years. All other economic variables, such as interest rates, remain unchanged. The Group deems this scenario to have a medium (in a high/medium/low scale) likelihood of happening.

In the second scenario, the Group hypothesises that a very chaotic European political scenario will arise in 2017; hence the Italian credit spread will increase by 400 basis points in 2017, by 490 basis points in 2018 and by 405 basis points in 2019, all compared with the baseline values. All other economic variables, such as GDP or interest rates, remain unchanged. This scenario has a low likelihood of happening.



To conclude, the reverse stress test exercise identifies the worsening of Italian credit spread as a main cause of concern for the Montepaschi Group, affecting the AFS Reserve and the cost of funding.

However, the critical levels of credit spread necessary to endanger the viability of the Group's business model and strategies are high and unlikely to happen.

Moreover, the Group continuously monitor the Italian credit spread and both AFS reserve and cost of funding are well considered in internal processes and risk methodologies, with specific actions to be taken in case of crisis.

It is important to note that, for the selected scenarios, the levels of CET1 ratios are well above the capital adequacy thresholds. For instance, in 2019 the CET1 ratio for the second scenario is 8,75% while the threshold is 5,52%.

### 4. Processes Adequacy

The Internal Control and Risk Management Systems adequacy is assessed within the Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP) at least annually and for this purpose the main Group weaknesses are highlighted.

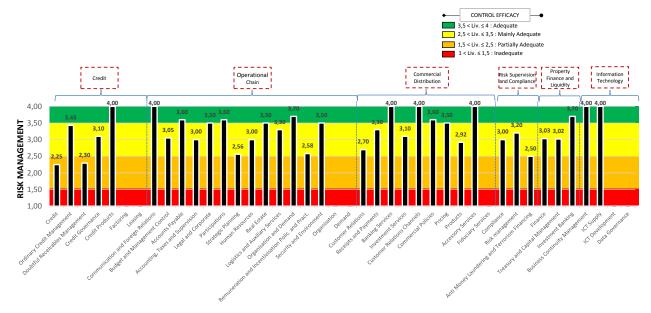
The areas for improvement arisen and the relative corrective actions identified within the ICAAP and ILAAP Statement have been realised, as described in the previous paragraphs.

In the setting of activities preparatory to Risk Appetite Statement 2017 approval, in 2016 the Internal Control System management, also relevant to RAF, has been defined; it involves the inclusion of qualitative indicators concerning the Internal Control System in the Group KRI, aiming to identify internal processes weaknesses/issues and corrective actions to be adopted in order to reduce the "residual risk".

Below, the macro-processes specific assessment distribution, as appraised by the Group Risk Management Function in December 2016, is graphically displayed.

The axis of abscissae in the graph represents the assessment clusters (Credit, Operational Chain, Commercial Distribution, Risk Supervision and Compliance, Property Finance and Liquidity, Information Technology) and the relative Macro-processes identified within the Group univocal catalogue while the axis of ordinates displays the final grade reported on a 1-4 score scale (1 = worst; 4 = best).

The Risk Control Function (as any other function) expresses the analytical assessment of the macro-processes which show risks/controls impacting activities and appraises the drivers concerning the 1st level control processes.



The overall score assigned by the Risk Management to the processes is 3.3 (Mainly Adequate).

From the Risk Management perspective, the main areas for improvement (Partially Adequate) are the Credit and Anti-Money Laundering processes.

## 5. Concluding Remarks and Action Plan

In the 2016 the Montepaschi Group set up the internal reference overall framework for the risk appetite (Risk Appetite Framework - RAF).

The RAF aims at guaranteeing coherence between the actual Group risk profile and the Group risk appetite ex-ante approved by the BoD on an on-going basis, taking into account the possible risk tolerances and the maximum thresholds (risk capacity) resulting from regulatory requirements and restrictions imposed by Supervisory Authorities (e.g. ECB SREP Decision). The 2016 RAF has been formalised through a Risk Appetite Statement (RAS) approved by the BoD and detailed to a set of Key Risk Indicators (KRI) identified within the Group, Legal Entities and Business Units in accordance with the processes approved by the BoD.

The risk management and measurement systems allowed for an on-going risk profile monitoring and a periodic report to the different bodies.

Concerning the capital adequacy and liquidity RAF indicators, in the first part of 2016 the Group has succeeded in achieving its internal aims about risk appetite.

By the end of 2016 the failure to comply with internal targets is ascribed to the idiosyncratic crisis arisen in conjunction with the EBA Stress Test results, resulting in a serious Group reputation depletion and to the failure of the private recapitalization.

The liquidity shortage subsequently arisen has been mainly faced through short term liquidity reserves.

The new scenario, at the end of 2016, including the request to resort to precautionary recapitalization (State Aid) and the extraordinary liquidity support in accordance with the BRRD and the necessity to draw a Recovery Plan up to be submitted to competent authorities, has induced a strong rearrangement of the internal objectives and business strategies.

Consistently with the regulatory view, capital adequacy RAF indicators have crossed the threshold over at the end of 2016. The CET1 Ratio and the Total Capital Ratio have recorded levels lower than minimum risk capacity limits.

In conclusion as for the overall level of risks faced by MPS as at 31/12/2016, the evaluation is considered "NOT ADEQUATE", believing too high the Group's risk level in relation to the availability of capital (and liquidity) at year-end.

With reference to internal processes, remaining margins of improvement especially regarding the management of credit processes, the judgment assigned for the year 2016 as regards the adequacy of organizational processes, internal controls systems and risk practices in place to manage and mitigate these risks, is considered "MAINLY ADEQUATE".

In order to meet the main identified weaknesses, enhance the capital level and foster risk management processes, the Group has planned a series of intervention to be enacted by the end of 2017.

In particular, from a quantitative perspective:

- The 2016 EBA stress test results recorded a fully-loaded CET1 shortfall only in the adverse scenario of -2,4% at 2018 year-end, to be applied to an 8% threshold. According to the ECB, this shortfall translates into a capital requirement of 8,8 €/bn, inclusive of all own funds components required by current legislation. In order return to full viability, the public precautionary recapitalisation of 8,8 €/bn is planned by 30/06/2017 and in any case after receiving all the necessary authorizations form relevant Authorities;
- In addition to the capital increase, and all other actions defined, MPS will evaluate the possibility of integrating the Restructuring Plan by issuing Additional Tier 1 or Tier 2 instruments.

The completion of the process of public support (precautionary recapitalization and extraordinary liquidity facilities) already started, will report capital adequacy and liquidity at a satisfactory level for the viability of the bank.

#### From a qualitative perspective:

- MPS will radically improve credit risk management processes. This will be achieved by:
  - a complete re-organisation of the CLO area, with the internalisation of decision mechanisms and direct reporting of territorial credit areas to enhance governance already started in the last quarter of 2016
     as well as the creation of dedicated units for High Risk, UTP and Bad Loans management;
  - a strong push on automated underwriting processes for small tickets as well as discipline for larger exposures;
  - the strengthening of early detection and proactive management;
  - the improvement of NPE unit performance and selective disposals.

As a result of the implementation of these management actions, BMPS expects a significant improvement of all key asset quality indicators over the Restructuring Plan horizon;

• In addition a specific Risk Plan 2017 has been approved by BoD on February 2<sup>nd</sup> 2017, in order to enhance risk management practices and methodologies (internal Risk Policy and Procedures update, improvements in internal models according to Regulatory requests and best practice, improvements in reporting and governance arrangements).

## 6. Annexes - Risk Glossary

**Credit risk**: current or prospective risk to earnings and capital arising from an obligor's failure to meet the terms of any contract with the institution or its failure to perform as agreed. This risk includes residual risk, the credit risk in securitisation and cross-border (or transfer) risk.

**Counterparty risk** – *Default risk*: risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows.

**Counterparty risk** – *CVA risk*: risk for the institution to incur losses due to adjustment to the mid-market valuation of the portfolio of transactions with a counterparty. That adjustment reflects the current market value of the credit risk of the counterparty to the institution, but does not reflect the current market value of the credit risk of the institution to the counterparty.

**Market risk**: current or prospective risk to earnings and capital arising from adverse movements in bond prices, security or commodity prices or foreign exchange rates. This risk can arise from market-making, dealing, and position taking in bonds, securities, currencies, commodities, or derivatives (on bonds, securities, currencies, or commodities).

**Operational risk**: risk of loss resulting from inadequate or failed internal processes, people and systems or from external events; it includes legal risk.

Settlement and Delivery risk: risk arising in the case of transactions in which debt instruments, equities, foreign currencies and commodities (excluding repurchase transactions and securities or commodities lending and securities or commodities borrowing) are unsettled after their due delivery dates. Therefore, it represents the risk for the institution to incur losses due to price differences between the agreed settlement price and its current market value.

**Issuer risk**: current or prospective risk connected to the issuer's official rating; this is the risk of decreasing portfolio value due to the unfavorable change in the issuer's credit standing up to the extreme case of default, in the buying and selling of plain vanilla or credit structured bonds, i.e. purchase/selling of protection.

**Participation risk**: risk for an institution to face losses due to participations in financial and/or non-financial corporations.

**Real Estate risk**: risk to incur in losses generated by unexpected variation of prices referred to real estate assets, due to the relative market trend.

**Interest Rate risk on Banking Book**: risk arising from potential changes in interest rates that affect an institution's non-trading activities. It includes: repricing, yield curve, basis, option risk.

**Concentration risk**: risk that large exposures, arisen within or across different risk categories throughout an institution, produce: a) losses large enough to threaten the institution's health or ability to maintain its core operations, b) a material change in an institution's risk profile.

Business and Strategic risk: current and/or prospective risk for the bank to incur in unexpected losses linked to business volatility (Business risk), wrong strategic decisions and/or poor reactivity to competitive environment changes (Strategic risk).