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# APPLICATION OF THE BASEL II REFORM



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The calculation of the quarterly results at March 31st, 2008 by core business takes into account the application of Basel II standards at Societe Generale Group. Basel II figures mentioned in the following presentation have not been audited by the Statutory Auditors.

The figures provided for the first quarter of 2008 have been prepared in accordance with IFRS (International Financial Reporting Standards) adopted by the European Union. They do not constitute a full set of interim financial statements as defined in IAS 34 "Interim Financial Reporting", and have not been audited by the Statutory Auditors. Societe Generale plans to publish interim financial statements for the six-month period ending June 30th 2008.

Unless otherwise specified, the sources for the business rankings are internal.



- **Basel II key principles**
- Application of the reform at Société Générale
- **Pillar 1: regulatory capital requirements**
  - ▶ New measurement of risk-weighted assets
  - ▶ Basel II Tier One ratio
- Changes in Group financial communication
- Conclusion
- Supplementary data

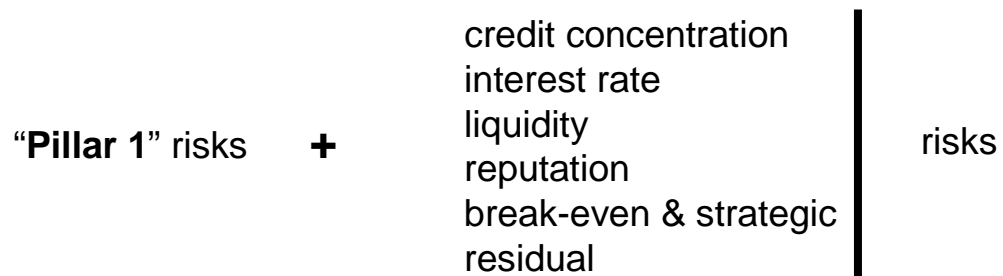
## Basel II architecture based on 3 complementary pillars

### ■ PILLAR 1 - Regulatory capital requirements

- ▶ New measurement of risk-weighted assets
  - Revision of the calculation of the weighting of credit assets
  - Integration of operational risk
- ▶ Changes in the calculation of the Tier One ratio

### ■ PILLAR 2 - Capital management

- ▶ Integration of all the risks to which the bank is exposed



- ▶ Evaluation process for internal capital adequacy for all of these risks

### ■ PILLAR 3 - Financial communication

# Differences between Basel I / Basel II by type of risk

## Credit risk

## Market risk

## Operational risk

### BASEL I

Standard risk weighting according to the type of counterpart

Standard risk weight model calibrated by the regulator or internal VaR model

### Basel II innovations

Overhaul of the weighting of credit risk

A few changes

New

#### Three possible approaches

1. **Standard:** standard risk weighting and/or depending on the external ratings of counterpart

Standard risk weight model calibrated by the regulator or internal VaR model

#### Three possible approaches

1. **Basic** (% of global NBI),
2. **Standard** (% of NBI, distinguished according to business line),

### BASEL II

2. **FIRB** (*Foundation Internal Rating Based*) based on the internal models for probability of default (PD) and standard risk weighting for other parameters

3. **AIRB** (*Advanced Internal Rating Based*) based on the internal models for all the risk parameters (probability of default (PD), loss given default (LGD), exposure at default (EAD) and maturity (M))

3. **AMA** (*Advanced Measurement Approach*) based on an internal model

 Société Générale's position



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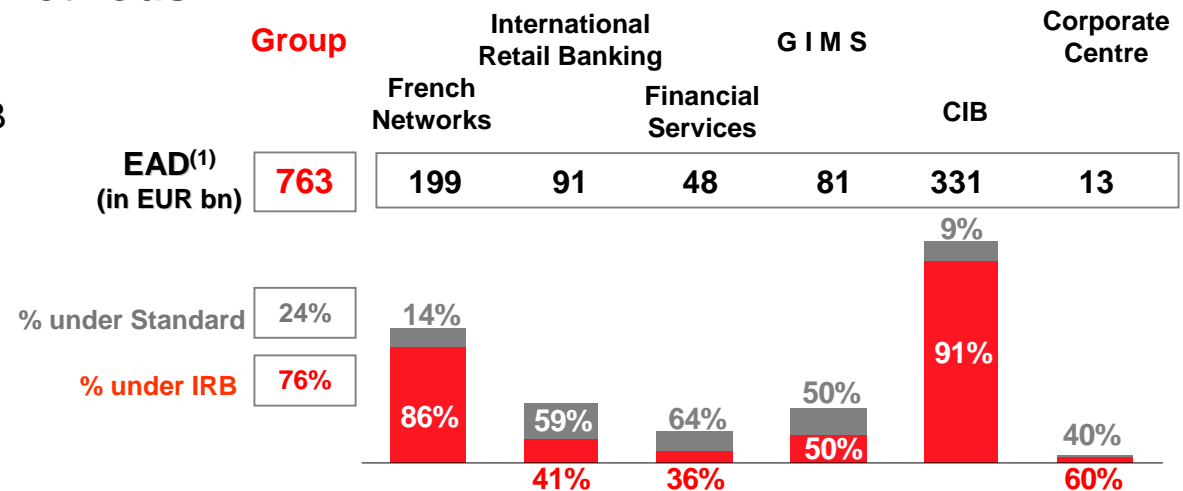
## Implementation of the reform at Société Générale (1/2)

### ■ Pillar 1: application of advanced methods

- ▶ Credit risk at March 31, 2008
  - Over 75% of EAD<sup>(1)</sup> processed under IRB
- ▶ Market risk at March 31, 2008
  - Minor changes in measurement
- ▶ Operational risk at March 31, 2008
  - Entities representing 90% of Group NBI processed using AMA

↳ Net reduction of -5.3% of “Basel II/Basel I” risk-weighted assets at March 31, 2008 despite the integration of operational risk

IRB processing (as a %) of  
EAD<sup>(1)</sup> (in EUR bn) at March 31, 2008



Impact of Basel II on risk-weighted assets  
at March 31, 2008 (in EUR bn)

	Basel I	Basel II	Change Basel II / Basel I
Credit	334.5	273.3	-18.3%
Market	13.2	13.5	+2.3%
Operational	-	42.3	NM
<b>Total</b>	<b>347.7</b>	<b>329.1</b>	<b>-5.3%</b>

(1) EAD: exposure at default

## Implementation of the reform at Société Générale (2/2)

- **Pillar 2: a review of the capital management under Basel II is planned by the regulator for the end of 2008**
  
- **Pillar 3: the publication of information compliant with Basel II requirements in the 2009 Registration Document**
  - ▶ Financial communication in 2008 of both Basel I and Basel II figures
    - Quarterly publication in 2008 of the impact of the reform on risk-weighted assets (RWA), return on equity at the core businesses, and prudential ratios
  - ▶ Registration Document published in the first quarter of 2009
    - Publication of comprehensive information in chapter 9 “Risk Management”



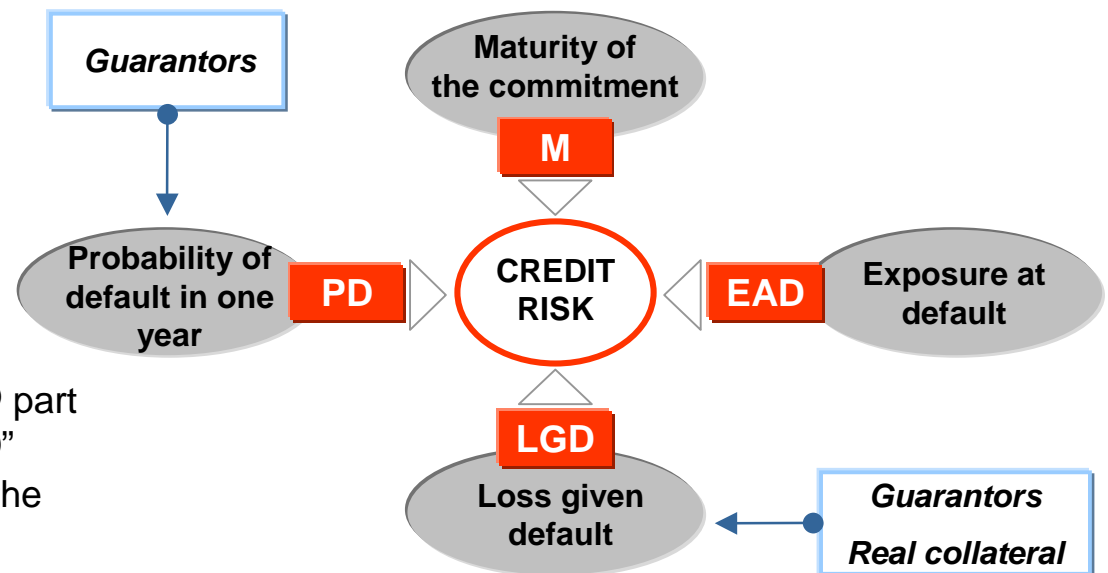


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## Parameters used to calculated weighted assets (AIRB)

### ■ Calculation of weighted assets by Basel portfolio<sup>(1)</sup> based on:

- ▶ The quality of the counterparts (borrower or guarantor)
  - Probability of default in one year “PD”
- ▶ The characteristics of the transaction
  - The amount of credit exposed to risk when the counterparty goes into default (the drawn<sup>(2)</sup> part of the loan + the percentage undrawn<sup>(2)</sup>): “EAD”
  - The rate of credit loss suffered by the bank in the event of delinquency, and specific to the transaction (collateral): “LGD”
  - The remaining duration of the loan: “M”



(1) Portfolios defined in Supplementary Data

(2) Drawn part: on-balance sheet assets

Percentage of undrawn part x “Credit Conversion Factor (CCF)” = “Off-balance sheet Credit Risk Equivalent”

## Several examples of Basel II (1/2)

### ■ Housing loans

- ▶ Positive impact on LGD of the integration of guarantees (provided by Crédit Logement\* & standard mortgage agreements)
  - e.g.: a EUR 200,000 property loan

Ex.: Property loan	Basel I		Basel II	
	with Crédit Logement	mortgage	with Crédit Logement	mortgage
EAD	200,000	200,000	200,000	200,000
PD			0.03%	0.40%
LGD			10.0%	20.0%
<b>Weighting rate</b>	<b>20.0%</b>	<b>50.0%</b>	<b>6.1%</b>	<b>14.1%</b>
<b>RWA</b>	<b>40,000</b>	<b>100,000</b>	<b>12,183</b>	<b>28,214</b>

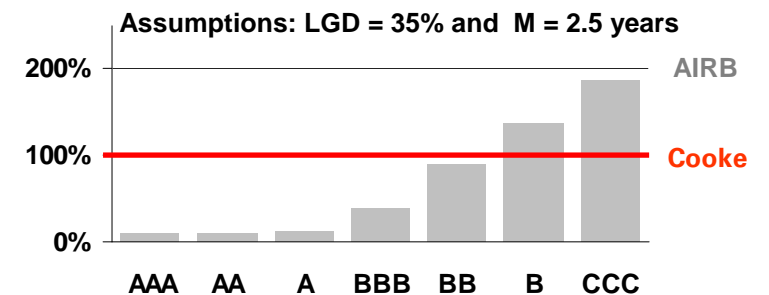
### ■ Revolving credit

- ▶ PD: based on the score given to the counterpart - transaction pairing
  - e.g.: 40% drawn amount on EUR 10,000 revolving credit (75% weighting of undrawn portion under Basel II vs. 50% under Basel I)

Ex. Revolving Credit	Basel I	Basel II
Drawn amount	4,000	4,000
Undrawn amount	6,000	6,000
EAD	7,000	8,500
PD		7.00%
LGD		30.0%
<b>Weighting rate</b>	<b>100%</b>	<b>48.0%</b>
<b>RWA</b>	<b>7,000</b>	<b>4,077</b>

### ■ Large institutional and corporate clients

- ▶ PD: based on the rating of the counterparts (e.g.: Weighting x3 between A and BBB)
- ▶ LGD: based on collateral (majority of portfolio of between 15% and 50%)
- ▶ Monitoring of nominal exposure to prevent the impact of any ratings migration



\* Crédit Logement: A French specialised home loan guarantee provider

## Several examples of Basel II (2/2)

### ■ Asset financing

- ▶ LGD in line with the size and type of collateral
  - e.g.: Equipment loan for an SME rated BB-

Ex.: Equipment loans for an SME	Basel I	Basel II
EAD	50,000	50,000
PD		2.75%
LGD		18.0%
Internal rating		BB-
<b>Weighting rate</b>	<b>100%</b>	<b>26.3%</b>
<b>RWA</b>	<b>50,000</b>	<b>13,132</b>

### ■ Securitisation

- ▶ For third parties (conduit)
  - Capital charge is linked to the quality of the underlying assets and the liquidity line

Ex.: Conduit	Basel I		Basel II	
	Letter of credit	Liquidity Line	Letter of credit	Liquidity Line
Nominal	12,000	200,000	12,000	200,000
CCF	100%	0%	100%	100%
EAD	12,000	0	12,000	200,000
Internal rating	AA+	AAA	AA+	AAA
<b>Weighting rate</b>	<b>100.0%</b>	<b>0.0%</b>	<b>15.9%</b>	<b>7.4%</b>
<b>RWA</b>	<b>12,000</b>	<b>0</b>	<b>1,908</b>	<b>14,840</b>

## Decrease in Group RWA as a result of the good quality of the portfolio ratings

### ■ Most “institutional and corporate”<sup>(1)</sup> portfolios are rated Investment Grade

- ▶ 72%\* of “large corporates” portfolio
- ▶ 97%\* of “banks” portfolio

### ■ The weighting rate of the “residential mortgages” portfolio reflects its low risk profile

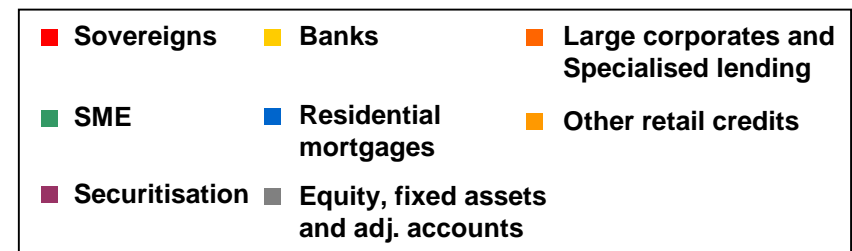
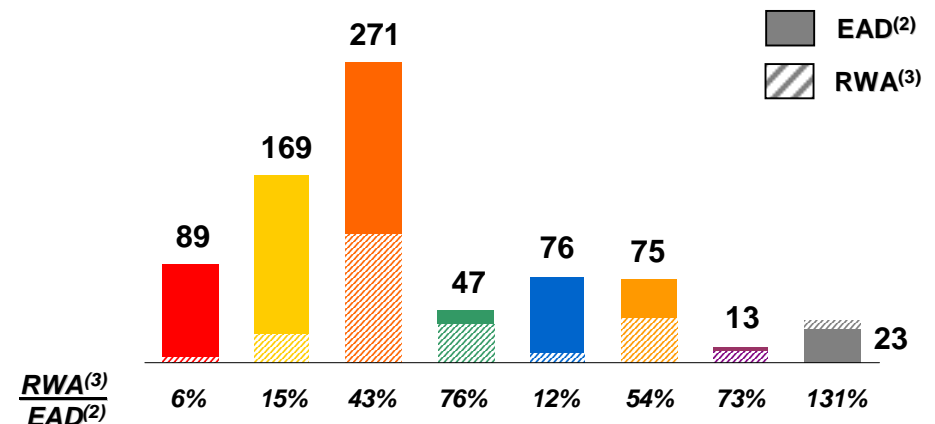
- ▶ French Networks: fall in weighting from 39%\* (Basel I) to 7%\* (Basel II)

### ↳ Average Group “RWA<sup>(3)</sup>/EAD<sup>(2)</sup>” weighting at March 31st, 2008: 36%

\* At March 31st, 2008

- (1) Sovereigns, Banks and Large corporates (Sales > EUR 50m)  
 (2) EAD: exposure at default  
 (3) RWA: risk-weighted assets

Breakdown by Basel portfolio\* (in EUR bn)



## Consequences of the implementation of Basel II by core business

### ■ The main changes

- ▶ French Networks
  - Significant reduction linked to housing loans
- ▶ International Retail Banking
  - A substantial percentage of assets processed using the standard method
- ▶ Financial Services
  - Positive impact of quality of clients and collateral effects
- ▶ GIMS
  - Positive impact linked to the decline in RWA at Private Banking
- ▶ Corporate and Investment Banking
  - Positive impact on the quality of the portfolio but less advantageous prudential processing of hedging transactions

Credit risk-weighted assets  
at March 31, 2008 (in EUR bn)

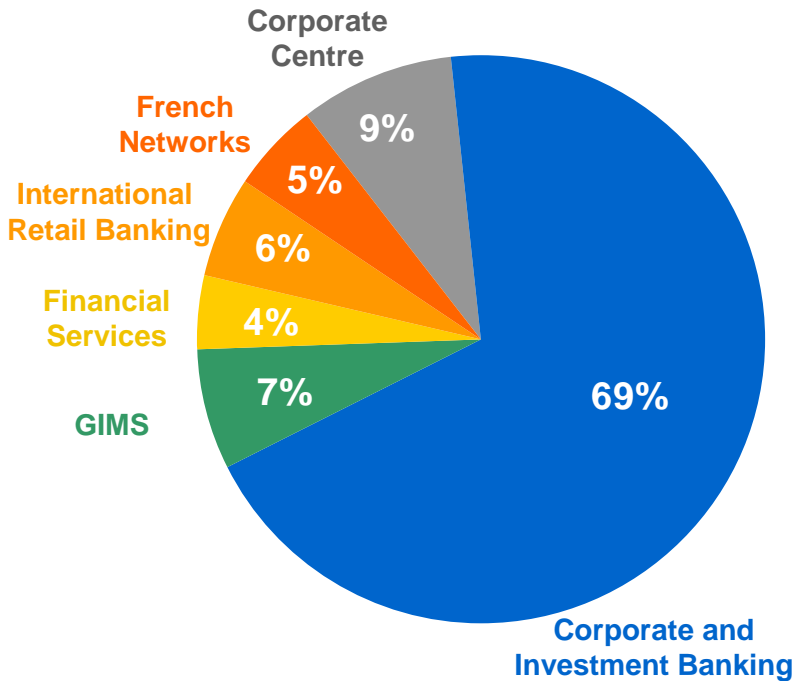
	Basel I	Basel II	Change Basel II / Basel I
<b>French Networks</b>	117.4	72.1	-38.6%
<b>International Retail Banking</b>	58.6	58.2	-0.5%
<b>Financial Services</b>	43.1	33.4	-22.6%
<b>GIMS</b>	24.2	21.6	-10.9%
<b>Corporate and Investment Banking</b>	80.4	82.8	+3.0%
<b>Corporate Centre</b>	10.8	5.2	-51.6%
<b>Group total</b>	<b>334.5</b>	<b>273.3</b>	<b>-18.3%</b>

# “AMA” entities representing 90% of Group NBI

## ■ Société Générale’s “AMA” structure

- ▶ An “Operational Risk” function in place across the Group
- ▶ Analysis of operational risk profiles based on:
  - Regrouping operational losses
  - Risk and control self-assessment and Permanent Supervision measures
  - Analysis of worst-case loss scenarios
  - Internal model
- ▶ Ongoing reinforcement of governance and control structure following the fraud

Capital allocation linked to operational risk at March 31, 2008



## ■ Integration of the fraud into the capital allocation for operational risk\*

Group capital allocation: EUR 3.4bn  
RWA equivalent: EUR 42.3bn

\* Model approved by the French Banking Commission

## Consequences of the application of Basel II by core business

Risk-weighted assets at March 31, 2008 (in EUR bn)

	Basel I	Basel II				Change Basel II / Basel I
		Credit	Market	Operational	Total	
<b>French Networks</b>	117.7	72.1	0.3	2.1	74.5	-36.7%
<b>International Retail Banking</b>	58.6	58.2	0.0	2.5	60.7	3.7%
<b>Financial Services</b>	43.1	33.4	0.0	1.8	35.2	-18.5%
<b>GIMS</b>	25.9	21.6	1.9	3.0	26.5	+2.2%
<b>Corporate and Investment Banking</b>	91.3	82.8	11.0	29.2	123.0	+34.7%
<b>Corporate Centre</b>	11.1	5.2	0.3	3.7	9.2	-16.4%
<b>Group total</b>	<b>347.7</b>	<b>273.3</b>	<b>13.5</b>	<b>42.3</b>	<b>329.1</b>	<b>-5.3%</b>



## Tier One ratio under Basel II

### ■ Main differences in calculation:

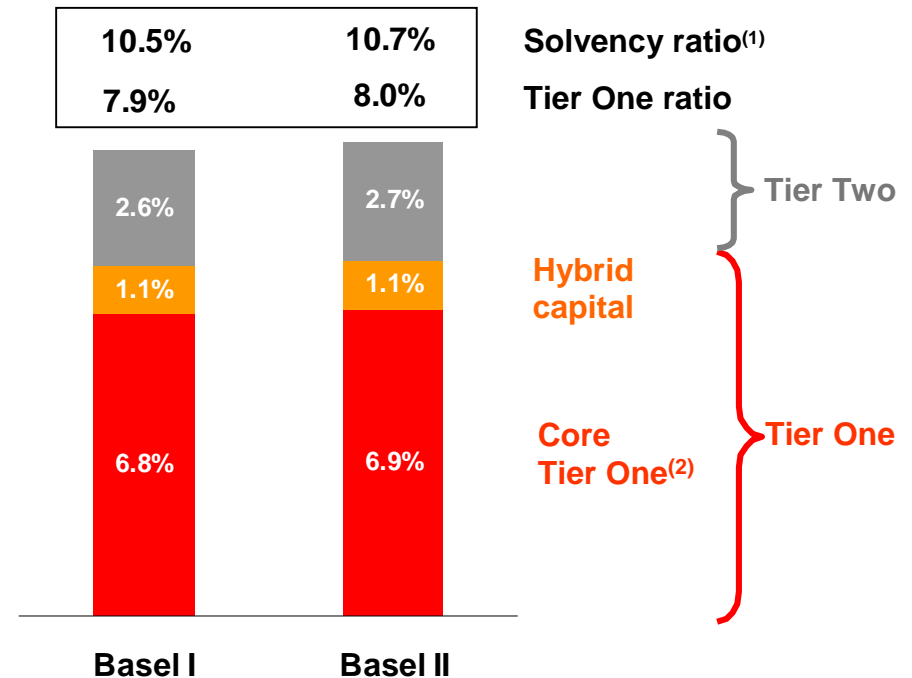
- ▶ Capital deduction\*:
  - -32bp vs. Basel I Tier One ratio
- ▶ New measurement of RWA
  - +43bp vs. Basel I Tier One ratio

↪ 11bp improvement in the Tier One ratio

### ■ Limited proportion of hybrid capital in the Tier One ratio of approximately 14% at March 31, 2008

### Solvency / Tier One ratios at March 31, 2008

$$\text{Ratio} = \frac{\text{Capital - Deductions}}{\text{Risks (credit + market + operational)}}$$



\* Prorata deduction of deeply subordinated notes and preferred shares

(1) Solvency ratio: Tier 1 + Tier 2 + other deductions

(2) Core Tier One: Tier One capital incl. minority interests



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## Consequences on the income statement and capital allocation

### ■ Continuation of the current method used for capital allocation to the core businesses

- ▶ Based on a fixed percentage of the consumption of their Basel II Pillar 1 RWA: 6%
- ▶ Plus the Tier One capital consumption attributable to each business (excluding goodwill)

$$\begin{aligned} \text{Capital allocated to the core businesses} &= 6\% \times \text{Pillar 1 RWA} \\ &- \text{Minority capital} \\ &+ \text{Additional capital} \\ &+ 50\% \times \text{First loss securitisation} \\ &+ 50\% \times \text{Bank interests} > 10\% \\ &+ 50\% \times (\text{EL} - \text{portfolio-based provisions}) \\ &+ 50\% \times \text{EL on Equity portfolio}^{(1)} \end{aligned}$$

(1) For hedging risk on other unhedged investments elsewhere using capital under market risk

## In 2008, presentation of division indicators under Basel I (e.g. French Networks)

### ■ First quarter 2008

- ▶ NBI: +2.0% vs. Q1 07 excluding PEL/CEL
- ▶ Operating expenses: +1.4% vs. Q1 07
- ↳ C/I ratio excluding PEL/CEL:  
66.6% (vs. 67.0% in Q1 07)
- ▶ Cost of risk: 28bp

In EUR m	Q1 07	Q1 08	Change Q1/Q1
Net banking income	1,736	1,739	+0.2%
Operating expenses	(1,145)	(1,161)	+1.4%
<b>Gross operating income</b>	<b>591</b>	<b>578</b>	<b>-2.2%</b>
Net allocation to provisions	(78)	(87)	+11.5%
<b>Operating income</b>	<b>513</b>	<b>491</b>	<b>-4.3%</b>
<b>Net income</b>	<b>327</b>	<b>312</b>	<b>-4.6%</b>
CWA (end of period)	103,900	117,704	
C/I ratio	66.0%	66.8%	

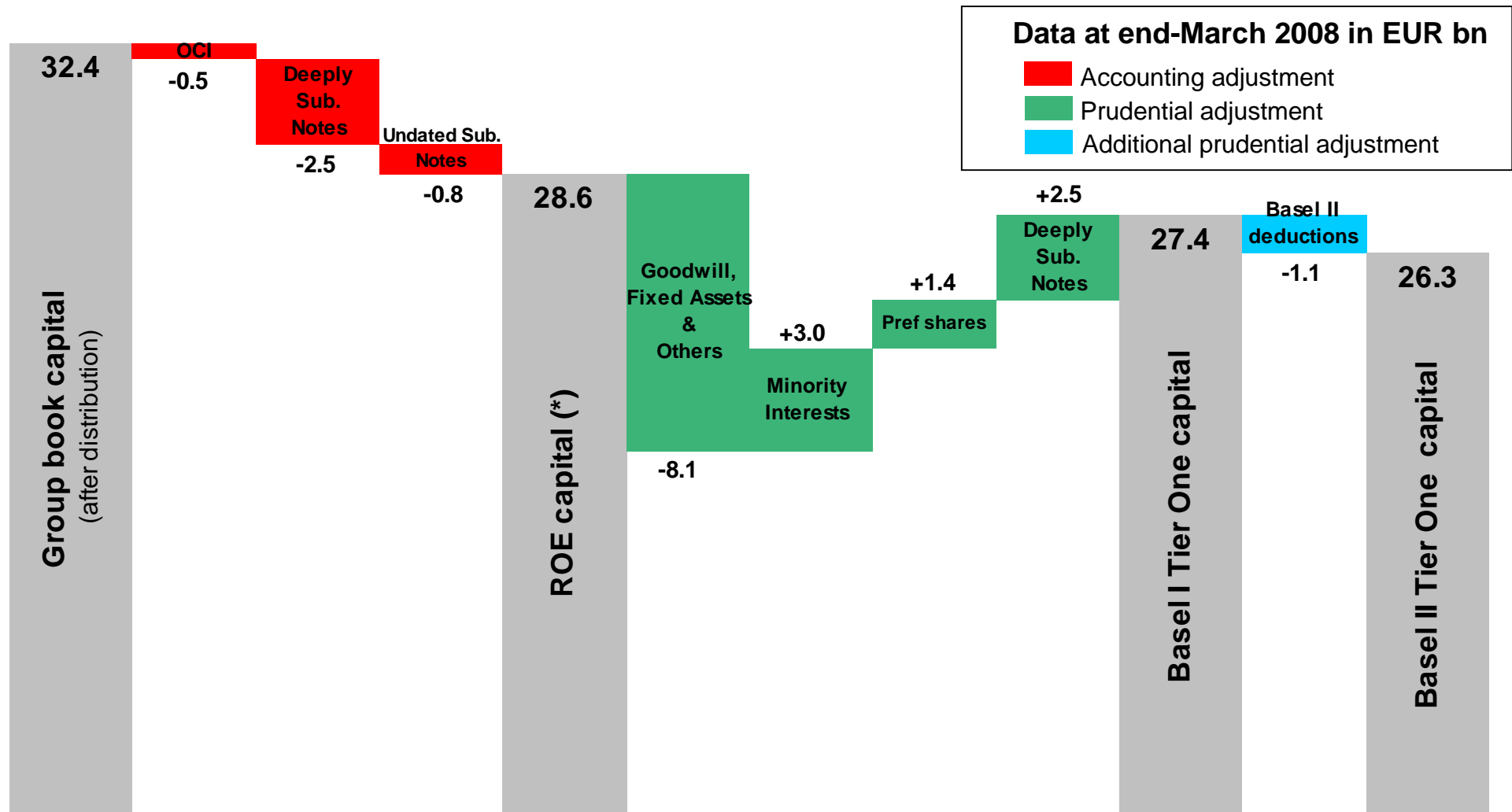
<b>Basel II indicators</b>	<b>Q1 08</b>
Net banking income	1,722
Gross operating income	561
Net income	301
RWA (end of period)	74,484
C/I ratio	67.4%
Average allocated capital	4,982

## Effective cost of commercial risk Basel I / Basel II

- The cost of commercial risk, which has been calculated until now using RWA by core business, will now be calculated using EAD, resulting in a change in the bp figures.

	Q1 08 Net Alloc. to Prov. in EUR m	CWA in EUR bn	Basel II assets: EAD in EUR bn	bp under Cooke in Q1 08	New bp reference under Basel II Q1 08
French Networks	87	117	199	28bp	17bp
International Retail Banking	88	59	91	61bp	39bp
Financial Services	113	43	48	105bp	93bp
CIB	312	81	331	156bp	38bp
GIMS/Corporate Centre	-2	35	94	NM	NM
<b>Total</b>	<b>598</b>	<b>335</b>	<b>763</b>	<b>71bp</b>	<b>31bp</b>

# Calculation of Capital and the Tier One ratio under Basel II



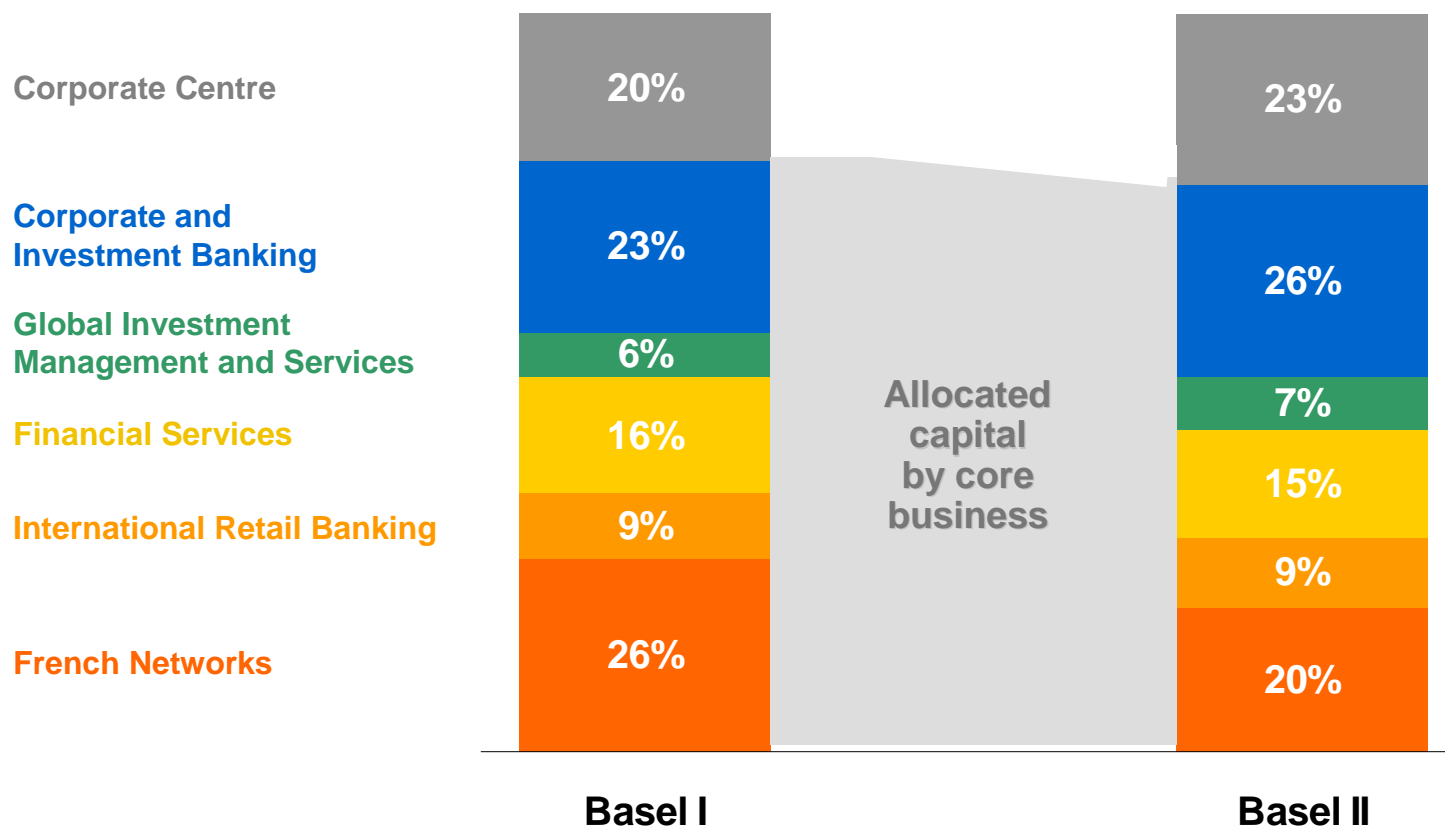
(\*) Data at the end of the period; ROE is calculated based on the average capital at the end of the period



- Basel II key principles
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# Continuation of capital allocation policy

Breakdown of average Group book capital in Q1 08







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## Glossary of new notions introduced by the reform

- **Basel portfolio:** Credit assets are classified according to the nature of the counterpart and the type of financial product in one of the 6 Basel credit portfolios.

Basel portfolio	Basel sub-portfolio
Sovereigns	Sovereigns
Banks	Banks
	Public sector entities
Corporate	Large corporates (Sales > EUR 50m)
	SME (Sales < EUR 50m)
	Specialised lending (incl. project, asset and commodity financing)
Retail	Residential mortgages
	Revolving credits
	Other credits to individuals
	Other - very small companies or professionals
Equity	Equity
Securitisation	Securitisation

## Quarterly comparison of Basel II vs. Basel I

In EUR m

	French Networks		International Retail Banking		Financial Services		Global Investment Management & Services		Corporate and Investment Banking		Corporate Centre		Group	
	Basel II	Basel I	Basel II	Basel I	Basel II	Basel I	Basel II	Basel I	Basel II	Basel I	Basel II	Basel I	Basel II	Basel I
	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08	Q1 08
Net banking income	1,722	1,739	1,117	1,116	772	775	600	597	1,570	1,563	(102)	(111)	5,679	5,679
Operating expenses	(1,161)	(1,161)	(649)	(649)	(428)	(428)	(654)	(654)	(1,001)	(1,001)	(12)	(12)	(3,905)	(3,905)
<b>Gross operating income</b>	<b>561</b>	<b>578</b>	<b>468</b>	<b>467</b>	<b>344</b>	<b>347</b>	<b>(54)</b>	<b>(57)</b>	<b>569</b>	<b>562</b>	<b>(114)</b>	<b>(123)</b>	<b>1,774</b>	<b>1,774</b>
Net allocation to provisions	(87)	(87)	(88)	(88)	(113)	(113)	0	0	(312)	(312)	2	2	(598)	(598)
<b>Operating income</b>	<b>474</b>	<b>491</b>	<b>380</b>	<b>379</b>	<b>231</b>	<b>234</b>	<b>(54)</b>	<b>(57)</b>	<b>257</b>	<b>250</b>	<b>(112)</b>	<b>(121)</b>	<b>1,176</b>	<b>1,176</b>
Net income from companies accounted for by the equity method	0	0	4	4	(3)	(3)	0	0	5	5	(1)	(1)	5	5
Net income from other assets	1	1	(3)	(3)	0	0	0	0	(3)	(3)	611	611	606	606
Impairment losses on goodwill	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Income tax	(161)	(167)	(79)	(79)	(71)	(72)	24	25	(117)	(113)	(115)	(113)	(519)	(519)
Net income before minority interests	314	325	302	301	157	159	(30)	(32)	142	139	383	376	1,268	1,268
Minority interests	13	13	109	109	5	5	(1)	(1)	0	0	46	46	172	172
<b>Net income</b>	<b>301</b>	<b>312</b>	<b>193</b>	<b>192</b>	<b>152</b>	<b>154</b>	<b>(29)</b>	<b>(31)</b>	<b>142</b>	<b>139</b>	<b>337</b>	<b>330</b>	<b>1,096</b>	<b>1,096</b>
Average allocated capital	4,982	6,631	2,389	2,275	3,719	4,013	1,797	1,506	6,656	5,913	5,893*	5,098*	25,436	25,436
<b>ROE after tax</b>	<b>24.2%</b>	<b>18.8%</b>	<b>32.3%</b>	<b>33.8%</b>	<b>16.3%</b>	<b>15.4%</b>	<b>NM</b>	<b>NM</b>	<b>8.5%</b>	<b>9.4%</b>	<b>NM</b>	<b>NM</b>	<b>16.5%</b>	<b>16.5%</b>

\* Calculated as the difference between total Group capital and capital allocated to the core businesses



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