

Methodology

Risk grading
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BNP Paribas Wealth Management
WM Offering
Equity Research
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Preamble

The Equity Research of BNP Paribas Wealth Management covers approximately 1150 stocks: about 350 on Asia, 450 on Europe and 350 on North America (Canada & US). Various suppliers and sources power Equity Research:

- 1- BNP Paribas Wealth Management (internal research teams located in Frankfurt, Hong Kong, Paris and Singapore) for the coverage of part of the European and Asian equities
- 2- BNP Paribas Exane (external research) for the coverage of part of the European equities
- 3- Kepler Cheuvreux (external research) for the coverage of part of the European equities
- 4- Macquarie Capital Limited (external research) for the coverage of part of the Asian equities
- 5- CFRA (external research) for the coverage of all North American (Canada & US) equities.

Regardless of the source (internal or external), the Equity Research is endorsed by BNP Paribas Wealth Management and broadcasted by various entities of the Wealth Management business (BPF France, BNL Italy, Fortis Belgium and WM International, excluding the US).

Regardless of the source, the Equity Research complies with BNP Paribas's Conflict of Interest management.

Regardless of the source, the Equity Research uses the same methodology presented in this document: risk ratings, target prices and recommendation system.

Other sources:

SRI ratings are provided by BNP Paribas Asset Management.

Credit ratings are provided by S&P and Moody's.

For the market consensus, we use IBES/Refinitiv.

Share prices and market data are provided by Datastream/Refinitiv.

The level 2 index is used for the weighting and the sector benchmark for each stock.

Desknote:

The equity research of a listed company is formatted in a document called “desknote”.

On the first pages of the document are the following elements: opinion, target price, risk rating, the main ratios, description of the activity, comments (investment thesis, valuation method, risks ...)

On the last three pages are displayed: graphs, past performances, evolution of the consensus, ratios of peers, weight of the various recommendations within the universe monitored, history of recommendations and price targets on the last 12 months, definition of risks and recommendations, the disclaimer with a link to conflicts of interest.

For external sources, the original language is English.

For internal sources, the original language can be either Dutch, English, French, German or Italian.

Regardless of the source, Desknote can be translated if needed.

Desknotes are displayed into 5 brands: *BNP Paribas Wealth Management*, *BNP Paribas Banque Privée*, *BNP Paribas Fortis Private Banking*, *BNL-BNP Paribas Private Banking* and *BNL-BNP Paribas LIFE BANKER*.

A. Risk grading

Risk gradings form an integral part of a recommendation.

There are three risk gradings: R1, R2 and R3.

R1 = low risk, R2 = average risk, R3 = high risk

We attribute a risk rating to each stock that we cover. The same risk rating system and methodology are used for all equities (all regions and sources).

Base of the risk grading

A risk grading is founded on six tangible criteria:

- 1) market capitalisation
- 2) free float
- 3) daily trading volumes
- 4) beta
- 5) volatility
- 6) solvency

Rating criteria can be reconfigured depending on market conditions. The parameters can be changed without prior notice.

Risk gradings form a risk scale within the equity asset class, which by nature carries higher risks than bonds or funds. This means that they are not intended as “absolute” risk gradings, but reflect a stock’s “relative” risk grading within the equity asset class.

The first 5 tangible criteria are updated daily based on the most recent closing price. Updates of solvency, the last criteria, depend on the frequency of the suppliers’ updates: S&P and/or Moody’s.

For each publication of financial analysis, the risk rating is based on the most recently available information.

Risk ratings can be changed without prior notice.

Risk grading methodology							Risk **
R1 = low risk - R2 = medium risk - R3 = high risk							
Tangible criteria *							
Market capitalisation total	free float	Average daily trading over 1 year	Beta 2,5 years relative to local index	Volatility over 1 year	Solvency S&P et Moody's *** long term rating all sectors insurance sector		
< 1 bn € / \$	< 0,5 bn € / \$	< 0,5 m € / \$	β > 1,7	Vol. > 60%	rating < BBB- Baa3	rating < A- A3	 R3
If one of these tangible criteria is satisfied, the risk grading is R3							
≥ 1 bn ≤ 5 bn € / \$	≥ 0,5 bn ≤ 3 bn € / \$	≥ 0,5 m ≤ 30 m € / \$	β ≤ 1,7	Vol. ≤ 60%	note ≥ BBB- Baa3	note ≥ A- A3	 R2
If one of these tangible criteria is satisfied, the risk grading is R2							
> 5 bn € / \$	> 3 bn € / \$	> 30 m € / \$	β ≤ 1,7	Vol. ≤ 60%	rating ≥ BBB- Baa3	rating ≥ A- A3	 R1
If all these tangible criteria are satisfied, the risk grading is R1							
* The tangible criteria may be adjusted to suit equity market conditions.							
** The R1-R2-R3 risk gradings are used locally to make certain that the investment product fits the client's profile (Suitability). A risk grading is established for each stock covered. It is not "absolute" but "relative" within the equity asset class.							
*** Should there be no S&P and Moody's rating for the issuer, this criteria is not taken into consideration. Should there be only S&P or Moody's rating for the issuer, only one rating is taken into consideration.							

N.B. The amounts related to the 7 tangible criteria are stated in the table solely for indicative purposes. They may change as market conditions fluctuate.

B. Target price

The target price is the company's theoretical valuation, calculated on a per share basis.

A 12-month horizon is used for:

- European equities covered by BNP Paribas Wealth Management, by Exane BNP Paribas or by Kepler Cheuvreux
- Asian equities covered by BNP Paribas Securities Asia or by Macquarie Capital Limited.

An immediate (or short-term) horizon is used for:

- North American (Canada & US) equities covered by Morningstar

In both cases (12-month or immediate horizons), target prices can be changed without prior notice.

1- Valuation methods

Equity analysts have a range of valuation methods at their disposal for establishing the target price and select that or those most pertinent for the stock, sector and country covered. The most commonly used methods are as follows:

a- Peer group ratios

For a stock, a peer group consists of the ratios of a single sector of activity (or of the corresponding sector indices) – arithmetic means or weighted averages can be used. The analyst picks out the most suitable ratio or ratios. In some cases, ratios may be compared with stocks that do not belong to the same sector, but have similarities, or to market indices, where appropriate. Examples of the most commonly used ratios:

Ratios
<ul style="list-style-type: none"> - PER - Price to Cash-Flow (P/CF) or Free Cash-Flow yield (%) - Price to Book Value (P/BV) or Price to Net Asset Value (P/NAV) - Dividend yield % - EV / Sales - EV / EBITDA - EV / EBIT
<p>EV (Enterprise Value) = market capitalization + debt + minority interest + preferred shares - cash - cash equivalents</p>

b- Sum-of-the-parts method: sum of the valuations of a group's various businesses, using a specific method for each

c- Discounted Cash Flows (DCF) model

2- Updating of the target price

The target price must be adjusted as soon as the analyst considers it necessary. There is no fixed frequency of update. Factors requiring a target price to be updated may include, but are not limited to:

- an announcement by the company (e.g. restructuring, merger or acquisition, capital transaction)
- release of sales or earnings figures (quarterly, interim, full-year)
- changes in the financial markets with an impact on the valuation
- changes in the outlook for the sector in which the company operates with an impact on the valuation
- changes in interest rates, exchange rates, commodity prices or any other factor with an impact on the valuation

C. System of recommendations

1- Definition

The possible equity recommendations are as follows:

- Buy,
- Hold,
- Reduce,
- Sell,
- No Opinion,
- Conflict of interest

The published recommendation is “absolute” rather than “relative” to a sector, country or index. The recommendation is based on a stock’s absolute (upside/downside) potential calculated as:

(target price - latest share price)/latest share price

Market volatility can cause some disparity between the upside or downside potential observed on a given day and the recommendation published several days, weeks or months before.

Coverage can be halted (No Opinion) for organisational reasons: either temporarily (change of analyst or during the revision of a recommendation and/or target price) or definitively.

“Conflict of Interest” is indicated when the recommendation applies to equities listed on the Control Room’s restricted list (BNP Paribas – CIB compliance), when BNP Paribas group is involved in the issuer’s corporate action. This recommendation also applies to BNP Paribas share and the listed subsidiaries of the BNP Paribas group.

Recommendations are revised whenever the analyst deems it necessary. They are not updated at regular intervals. Regardless of their status, recommendations may be modified without advanced notice.

2- Upside potential and establishment of the recommendation

The recommendation is established on the basis of both the risk grading and the absolute (upside or downside) potential:

Recommendation		Potential (upside / downside) and risk grading (R1 - R2 - R3)
Buy	Asia (1) & Europe (2) =>	Minimum upside potential +10% (R1) ; +12% (R2) ; +15% (R3)
	North America (3) =>	Minimum upside potential +3% (R1) ; +5% (R2) ; +8% (R3)
Hold	Asia (1) =>	Potential between -10% and +10% (R1) ; -10% and +12% (R2) ; -10% and +15% (R3)
	Europe (2) =>	Potential between 0% and +10% (R1) ; 0% and +12% (R2) ; 0% and +15% (R3)
	North America (3) =>	Potential between -7% and +3% (R1) ; -7% and +5% (R2) ; -7% and +8% (R3)
Reduce	Asia (1) =>	Downside potential between -20% and -10% (R1, R2 or R3)
	Europe (2) =>	Downside potential between -15% and 0% (R1, R2 or R3)
	North America (3) =>	Downside potential between -15% and -7% (R1, R2 or R3)
Sell	Asia (1) =>	Downside potential above -20% (R1, R2 or R3)
	Europe (2) & North America (3) =>	Downside potential above -15% (R1, R2 or R3)
No Opinion	Permanent or temporary drop coverage (change of analyst; recommendation or target price under review)	
Conflicts of Interest	Compliance restriction 1/ when BNP Paribas is involved in an equity capital market transaction relating to the subject issuer; 2/ on the BNP Paribas shares and on the listed subsidiaries of the BNP Paribas group	
(1) Asia: stocks monitored by Macquarie Capital Limited or by BNP Paribas Wealth Management // (2) Europe: stocks monitored by BNP Paribas Exane, by Kepler Cheuvreux or by BNP Paribas Wealth Management // (3) North America (Canada + USA): stocks monitored by CFRA		

D. Compliance

The disclosures relating to:

- listed companies in which BNP Paribas holds stakes (long positions > +0.5% and short positions < -0.5%),
- listed companies which have entrusted BNP Paribas with mandates for equity operations during the last 12 months,
- listed companies in which BNP Paribas or one of its affiliates is a market maker,
- share ownership of BNP Paribas group (including companies holding more than 5% of the capital),
- principles on which BNP Paribas Wealth Management produces Equity Research,
- historical recommendation and target price (12 months),
- BNP Paribas Wealth Management authorized distributors,
- methodology regarding ESG Research,
- definitions of terms and acronyms used in Equity Research reports,
- this methodology,

are available at <https://wealthmanagement.bnpparibas/en/conflict-of-interest.html> and <https://wealthmanagement.bnpparibas/asia/en/conflict-of-interest.html>