

Equity Research Ratings System

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Equities

Global

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A clearly defined rating system provides investors with a reliable basis for evaluating potential investment returns. The UBS approach is rooted in an "absolute return" philosophy, with ratings derived from analysts' forecast stock returns.

Analysts determine the Forecast Stock Return (expected price appreciation plus gross dividend yield) for the next 12 months. Predefined hurdle levels, or "bands," determine the 12-month rating (Buy, Neutral, or Sell). The ratings bands are set relative to a standardized estimate of the market's return over the next 12 months.

Accounting for variations

Allowances can be made for stocks with high volatility or to cater for other special circumstances. These are made by adjusting the hurdle levels. Such exceptions are approved and monitored by the regional Investment Review Committee (IRC) and disclosed on all equity research reports.

The Investment Review Committee

UBS's Investment Review Committees, which include senior members of research management in each region, closely supervise our research coverage to ensure that our ratings are based on rigorous fundamental analysis. All changes to ratings, material changes to the price targets underpinning those ratings, must be approved by the IRC prior to publication.

Rating	"Core" Band
Buy	Forecast Stock Return is more than 6% above the Market Return Assumption
Neutral	Forecast Stock Return is within +/- 6% of the Market Return Assumption
Sell	Forecast Stock Return is more than 6% below the Market Return Assumption

Overview

The UBS equity rating system is driven by the **Forecast Stock Return (FSR)**, defined as the sum of the expected dividend¹ plus expected stock appreciation within the next 12 months.

The FSR is converted to “Buy,” “Neutral,” or “Sell” by comparing it with the **Market Return Assumption (MRA)**—the one-year local market interest rate plus 5%. The 5% is a proxy for—not a forecast of—the equity risk premium.

By definition, the FSR is a single-point estimate derived from a variety of assumptions. In identifying the future value of a stock, an analyst will attempt to assess the “fair value” of the stock, adjusting for factors such as market sentiment, liquidity, and the business cycle.

- By definition, fair value is the net present value of the expected cash flows of the company.
- Cash flows are forecast on the basis of many assumptions for conditions affecting the economy, the particular industry, and the specific company, many of which are beyond the control of company management; and on the basis of assumptions for possible management actions to maximize profits, market share, or growth. Depending on circumstances, each assumption can be more or less dependable.
- There are numerous methods (sometimes called “valuation models”) for converting cash flow forecasts into fair value estimates. All valid methods can be converted into one another by mathematical manipulation, often introducing or discarding simplifying assumptions. However, it is crucial that every method, at some point, includes an assumption about what the market will pay for a given set of cash flows; this is usually introduced by an assumed risk premium, although some methods (e.g., comparison of PE multiples) conceal this step. Depending on circumstances, the risk premium assumption may be more or less dependable.

Market Return Assumption = 5% (an approximation of the equity risk premium) + R_f (local market interest rate, a proxy for the risk-free rate)

Setting the rating

The UBS rating system begins with an analyst determining the **Forecast Stock Return** (expected stock appreciation and dividend) for the next 12 months. An analyst arrives at a Rating (Buy, Neutral, or Sell) by comparing the Forecast Stock Return (FSR) with a prediction of the expected local market return, or the Market Return Assumption (MRA).

- The FSR is calculated as the sum of the expected dividend plus stock appreciation expected within the next 12 months. By definition, the fair value and FSR are single-point estimates derived from a variety of assumptions.

The MRA is calculated at a regional level by adding the one-year local risk-free interest rate (or proxy thereof) to 5%, a proxy for the local market equity risk premium.

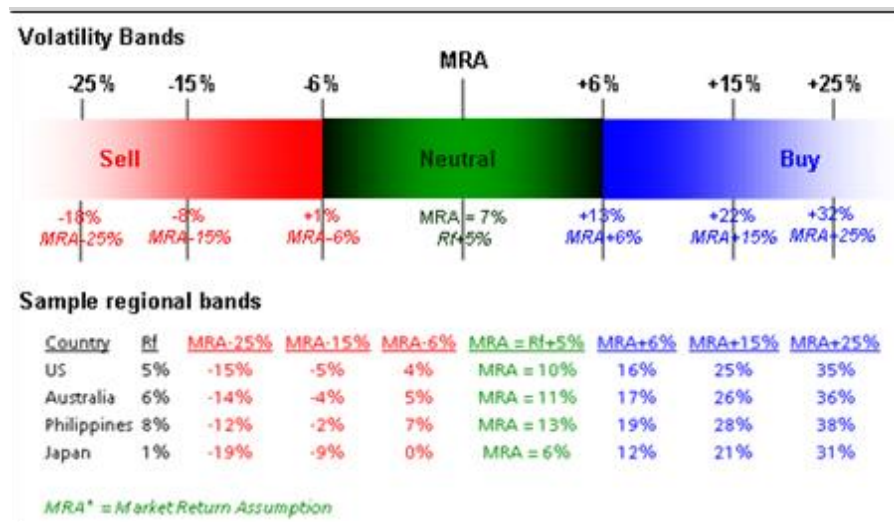
An analyst arrives at a rating by comparing Forecast Stock Return with the Market Return Assumption

¹ Gross dividend; in Australia and New Zealand, gross dividend includes franking or imputation.

For the vast majority of stocks, the threshold for the three recommendations is set at +/-6% around the MRA.

For example, the FSR must exceed the MRA by more than 6% for the stock to be rated Buy. Exceptions to the standard bands may be approved by the Investment Review Committee (IRC).

Figure 1: Forecast stock returns



Note: Absolute ratings bands are for illustration purposes only and in this case assume a 12-month local interest rate of 2% and hence a Market Return Assumption of 7%.

Source: UBS

Example 1: Buy rating

Over the next 12 months, stock X is expected to appreciate by 15% and to pay a 3% dividend yield. The 12-month interest rate is 2%.

- 1) The FSR = 15% + 3% = 18%
- 2) The MRA = $R_f + 5\%$ = 2% + 5% = 7%
- 3) FSR – MRA = 11%
- 4) Since the FSR – MRA exceeds 6%, the rating is Buy (i.e., since the FSR is >13%, the stock is a Buy).

Example 2: Sell rating

Over the next 12 months, stock Y is expected to appreciate by 2% and to pay a 1% dividend yield. The 12-month interest rate is 5%.

- 1) The FSR = 2% + 1% = 3%
- 2) The MRA = $R_f + 5\%$ = 5% + 5% = 10%
- 3) FSR – MRA = -7%
- 4) Since the FSR – MRA is less than -6%, the rating is Sell.

Exceptions to core standards

Above-average volatility

In applying the same +/-6% threshold to all stocks, we do not account for volatility. Investors may require a higher potential return in cases where stock price fluctuations are greater.

To address this issue, an analyst may apply for an exception to the limits of the 6% band. This exception is reviewed by the regional Investment Review Committee.

If the stock volatility (as calculated by the UBS quantitative research team) is more than 50%, an analyst may apply to the IRC for a core band exception (CBE). The IRC will take into account whether the volatility is reflective of a single event or has been consistently high. The IRC may approve the use of bands of +/-15% or +/-25% based on the degree of volatility. The IRC has latitude to approve a CBE for a stock that does not strictly meet the volatility criteria if doing so makes sense for consistency in an analyst's coverage universe.

All exceptions are disclosed in published research reports. Such exceptions may be rescinded at any point by the IRC and are reviewed regularly by the IRC.

Alternative calculations of MRAs

As stated previously, the Market Return Assumption (MRA) is calculated at a regional level by adding the one-year local risk-free interest rate (or proxy thereof) to 5%, a proxy for the local market equity risk premium.

In certain markets, the local risk-free interest rate may not be an appropriate measure for some companies. For instance, if the local rate is extremely high, the hurdle rate for a Buy rating would also be quite high—but this may not be appropriate for a large multinational whose costs are not affected by the high local rate. In such cases, the analyst may apply to the IRC for a core band exception reflecting more appropriate MRA assumptions. Currently, this band is set at -25/-12%; additional bands may be added at the discretion of the IRC as credit conditions change.

Acquisition candidates

In the event of an acquisition, the company being acquired may be granted a different banding, +6/-10%, to reflect asymmetric risk.

The "under review" qualifier

An analyst may exceptionally place covered stocks "under review" without prior approval. This is typically done when a major event is expected to have an impact on the investment case and, therefore, an analyst's assessment of fair value. Stocks may be placed "under review" for a limited period of time, at the discretion of Research management; the analyst is expected to publish a comment re-establishing a rating and investment case as soon as is possible given the circumstances of the event.

Rating/return divergence

The rating/return divergence (RRD) flag is an internal mechanism designed to assure continued alignment of price targets and ratings over time. This flag alerts

Volatile stocks can be granted exceptions to the core band

In certain markets, the local risk-free interest rate may not be an appropriate measure for some companies.

Analysts must publish a comment re-establishing a rating and investment case to remove Under Review status

research management and the analyst when a stock moves in such a way that the rating corresponding to the prevailing FSR differs from the assigned rating (i.e., the stock has moved out of its band).

This situation will persist until any or a combination of the following events occurs:

1. The stock moves in such a way that the prevailing FSR again becomes consistent with the rating.
2. The analyst modifies the FSR (price target and/or expected dividend) and/or rating so the FSR again becomes consistent with the rating.

Note that the analyst may change the target by up to 10% over a two-week period without being required to publish a supporting comment. Changes of 10% or more in rating and/or price target require IRC approval.

There are two forms of RRD: a single-band inconsistency and a double-band inconsistency.

- **A single-band inconsistency** occurs when the rating becomes inconsistent with the FSR by one band. For example, a Buy-rated stock's current FSR only qualifies it for a Neutral rating, or vice versa. The rating and price target are flagged internally with the RRD qualifier for 80 business days, after which at the discretion of Research management the rating and price target generally become suspended. Analysts may publish as normal during this RRD period.
- **A double-band inconsistency** occurs when the rating becomes inconsistent with the FSR such that the conforming rating is two categories from the current assigned rating (Buy and Sell only). The rating and price target are flagged internally with RRD qualifier for 20 business days, after which at the discretion of Research management the rating and price target generally are suspended.

In exceptional circumstances Research Management can extend the deadlines for both single and double band inconsistencies.

Stock suspensions

Rating/price target

A stock's rating and price target become "suspended" following RRD periods as outlined above. If this occurs, the IRC works closely with the analyst and research management to ensure a note is produced to reintroduce coverage within a short period, ideally five business days. If it is clear that coverage cannot be restored in a timely manner, the Research department will cease coverage of that stock.

A stock may also become suspended if an analyst is restricted from writing on it for so long that the RRD period is exceeded. In such a case, coverage is not dropped. When the restriction period ends, the analyst must return to IRC as soon as practicable to resume coverage.

Estimates

Analysts are expected to maintain five years of forward earnings estimates, with the first three of those years considered "material." If an analyst does not change earnings estimates in a four-month period, he must reaffirm the validity of those estimates in Research's database. Failure to do so results in a suspension of those

The RRD flag is used internally to identify stocks that have moved out of their band

estimates—i.e., they are no longer displayed on UBS's research website. The analyst must publish a research note to re-establish those estimates.

Other

On an exceptional basis, Product Management can suspend coverage on a stock if there are temporary circumstances that prevent the analyst from having a rating or price target. Examples include but are not limited to stocks suspended from trading temporarily, binary events that can be material for earnings and/or price target, companies that temporarily suspend the production or are amending consolidated financial statements, companies under regulatory investigation and stocks pending a transfer of coverage.

Glossary

Abbreviations used in Equity Global Research reports

Term / Abbreviation	Description / Definition
1H, 2H, etc. or 1H11, 2H11, etc.	First half, second half, etc. or first half 2011, second half 2011, etc.
1Q, 2Q, etc. or 1Q11, 2Q11, etc.	First quarter, second quarter, etc. or first quarter 2011, second quarter 2011, etc.
2011E, 2012E, etc.	2011 estimate, 2012 estimate, etc.
A	Actual i.e. 2010A
ADR	American depositary receipt
ARPU	Average revenue per user
AUM	Assets under management = total value of own and third-party assets managed
Avg.	Average
BCOM	Bloomberg commodity index
bn	Billion
bp or bps	Basis point or basis points (100 bps = 1 percentage point)
BVPS	Book value per share = shareholders' equity divided by the number of shares
CAGR	Compound annual growth rate
Cant. Inc./Capita	Cantonal income per capita (Switzerland only)
Capex	Capital expenditures
CF	Cash flow
CFO	1) Cash flow from operations, 2) Chief financial officer
CIO	UBS WM Chief Investment Office
COGS	Cost of goods sold
COM	Common shares
Cons.	Consensus
Core Tier 1 ratio	Tier 1 capital minus tier 1 hybrid securities
Cost/Inc. ratio (%)	Costs as a percentage of income
CPI	Consumer price index
CR	Combined ratio = ratio of claims and expenses as a percentage of premiums (for insurance companies)
CY	Calendar year
DCF	Discounted cash flow
DDM	Dividend discount model
Dividend yield (%)	Dividend per share divided by price per share
DPS	Dividend per share
E	Expected i.e. 2011E
EBIT	Earnings before interest and taxes
EBIT margin (%)	EBIT divided by revenues
EBITDA	Earnings before interest, taxes, depreciation and amortization

Term / Abbreviation	Description / Definition
EBITDA margin (%)	EBITDA divided by revenues
EBITDA/Net interest	EBITDA divided by net interest expense
EBITDAR	Earnings before interest, taxes, depreciation, amortization and rental expense
EFVR	Estimated fair value range
EIA	Energy Information Administration
EmV	Embedded value = net asset value + present value of forecasted future profits (for life insurers)
EPS	Earnings per share
Equity ratio (%)	Shareholders' equity divided by total assets
EV	Enterprise value = market value of equity, preferred equity, outstanding net debt and minorities
FCF	Free cash flow = cash a company generates above outlays required to maintain / expand its asset base
FCF yield (%)	Free cash flow divided by market capitalization
FFO	Funds from operations
FY	Fiscal year / financial year
GDP	Gross domestic product
Gross margin (%)	Gross profit divided by revenues
H	Half-year
h/h	Half-year over half-year; half on half
Hist. av.	Historical average
Interbank ratio	Interbank deposits due from banks divided by interbank deposits due to banks
Interest coverage	Ratio that expresses the number of times interest expenses are covered by earnings
Interest exp.	Interest expense
ISIN	International securities identification number
K	One thousand
LLP/Net int. inc. (%)	Loan loss provisions divided by net interest income
LLR/Gross loans (%)	Loan loss reserves divided by gross loans
LPR ²	Least preferred: The stock is expected to both underperform the relevant benchmark and depreciate in absolute terms
M and A	Merger and acquisition
m/m	Month-over-month; month on month
Market cap	Number of all shares of a company (at the end of the quarter) times closing price
mn or m	Million
MP ²	Marketperform: The stocks expected performance is in line with the sector benchmark
MPR ²	Most preferred: The stock is expected to both outperform the relevant benchmark and appreciate in absolute terms
n.a.	Not available or not applicable
n.m. or NM	Not meaningful
NAV	Net asset value
Net debt	Short- and long-term interest-bearing debt minus cash and cash equivalents
Net DPS	Net dividends per share
Net margin (%)	Net income dividend by revenues
NIM or Net int. margin (%)	Net interest income divided by average interest-bearing assets
NPL	Non-performing loans
NV ²	Neutral view: The stock is expected to neither outperform nor underperform the relevant benchmark nor significantly appreciate or depreciate in absolute terms
OP ²	Outperform: The stocks is expected to outperform the sector benchmark
Op. margin (%)	Operating income divided by revenues
p.a.	Per annum (per year)
P/BV	Price to book value

² Term only used by UBS WM Chief Investment Office

Term / Abbreviation	Description / Definition
P/E or PE	Price to earnings / Price earnings ratio
P/E relative	P/E relative to the market
P/EmV	Price to embedded value
PEG Ratio	P/E ratio divided by earnings growth
PPI	Producer price index
Prim. Bal./Cur. Rev. (%)	Primary balance divided by current revenue (total revenue minus capital revenue)
Profit margin (%)	Net income divided by revenues
q/q or QQQ	Quarter-over-quarter; quarter on quarter
R and D	Research and development
ROA (%)	Return on assets
ROAE (%)	Return on average equity
ROCE (%)	Return on capital employed = EBIT divided by difference between total assets & current liabilities
ROE (%)	Return on equity
ROIC (%) or ROI	Return on invested capital
Shares o/s	Shares outstanding
Solvency ratio (%)	Ratio of shareholders' equity to net premiums written (for insurance companies)
sotp or SOTP	Sum of the parts
Tax burden index	Swiss tax index; 100 = average tax burden of all cantons
tgt	Target
Tier 1 Ratio (%)	Tier 1 capital divided by risk-weighted assets; describes a bank's capital adequacy
tn	Trillion
UP ²	Underperform: The stock is expected to underperform the sector benchmark
Valor	Swiss company identifier
WACC	Weighted average cost of capital
WPIC	World Platinum Investment Council
x	Multiple / multiplier
y/y or YOY	Year-over-year; year on year
yr	Year
YTD	Year-to-date

² Term only used by UBS WM Chief Investment Office

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UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	Definition	Coverage ¹	IB Services ²
Buy	FSR is > 6% above the MRA.	55%	24%
Neutral	FSR is between -6% and 6% of the MRA.	36%	21%
Sell	FSR is > 6% below the MRA.	9%	18%
Short-Term Rating	Definition	Coverage ³	IB Services ⁴
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 December 2022.

1:Percentage of companies under coverage globally within the 12-month rating category.

2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

3:Percentage of companies under coverage globally within the Short-Term rating category.

4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

KEY DEFINITIONS: **Forecast Stock Return (FSR)** is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. In some cases, this yield may be based on accrued dividends. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

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