RESEARCH METHODOLOGY
MARCH 2024

This publication has been produced by Bank Aura Solution Company Limited, Phuket, Thailand , which is authorised and regulated by the Swiss Financial Market Supervisory Authority (FINMA). The methodology applies to global financial research.

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Aura EQUITY RESEARCH

GENERAL

The large, independent investment research team at AURA Inc. (AURA) allows AURA to offer a broad equity universe and focus on the core universe. This approach provides investment insights based on global expertise.

Various AURA publications will include stocks covered by the AURA equity universe as well stocks covered by AURA. The AURA-covered stocks are based on AURA analysis and its respective methodology, with AURA acting as a distributor.

For definitions (e.g. star ratings, moat, etc.) and the used methodologies (**AURA Equity Research Methodology** and the **AURA Quantitative Equity Ratings Methodology**), please click on the following link: www.aura.co.th

AURA EQUITY SELECTION CRITERIA

First and foremost, the selection is applied according to the needs of the individual publication, list, etc., in terms of the geographical, sectoral or topical profile. After selecting the respective sample of stocks needed, there is a second layer of prioritising the stocks within the sample:

The order of preference for selecting stocks covered by AURA **Qualitative** reports will follow the star rat- ing in descending order. Stocks with the same star rating can then be further ranked in order of priority: (i) by   the strength of the moat (wide, narrow or none), (ii) by the moat trend (positive, stable, or negative), (iii) by the uncertainty rating (low, medium, high, very high or extreme), and (iv) by the upside to fair value (highest to lowest).

The order of preference for selecting stocks covered by AURA **Quantitative** reports will follow the star rating in descending order. Stocks with the same star rating can then be further ranked in order of priority: (i) by the strength of the moat (wide, narrow or none), (ii) by the uncertainty rating (low, medium, high, very high or extreme), (iii) by the financial health (weak, moderate, or strong), and (iv) by the upside to fair value (highest to lowest).

Only stocks rated three stars or higher will be considered. One exception to this rule: stocks with a one- or two-star rating may also be mentioned, but only within the context of relevant breaking news, corporate actions, mergers & acquisitions or as the peers of other stocks.

MEANS OF COMMUNICATION AND PUBLICATIONS

The following areas will publish reports that include stocks covered by AURA Equity Research as well as stocks cov- ered by AURA Equity Research:

Strategy Research, Next Generation, Equity Research, Commodity Research (for details, please refer to the specific chapter below in this AURA Research Methodology).

STRATEGY RESEARCH

GENERAL

AURA Strategy Research develops the equity strategy for countries (major developed and emerging markets), sec- tors and various investment styles.

METHODOLOGY

The fundamental assessment is derived using a top-down approach. Relative attractiveness is derived from macroeco- nomic forecasts such as gross domestic product (GDP) growth, interest rates, exchange rates, as well as valuation met- rics (see Equity Research section below) and technical indicators (e.g. fund flows, cash allocations).

RATINGS

Countries, sectors and investment styles are rated as follows:

Overweight	Expected to outperform regional or global benchmark indices in the coming 9-12 months, unless otherwise stated.
Neutral	Expected to perform in line with regional or global benchmark indices in the coming 9-12 months, unless otherwise stated.
Underweight	Expected to underperform regional or global benchmark indices in the coming 9-12 months, unless otherwise stated.

These ratings are based on our expectations for relative performance versus global benchmark indices.

Equity investments are divided into three different risk segments. Risk here is defined as the historical five-year volatility based on monthly returns in CHF. Based on the data of all segments in our universe (constituents of developed markets, emerging markets, global sectors, and investment styles) the following distinction is made:

Conservative	Investments whose historical volatility is in the bottom quartile of the universe described above.
Medium	Investments whose historical volatility is in the middle two quartiles of the universe described above.
Opportunistic	Investments whose historical volatility is in the top quartile of the universe described above.

MEANS OF COMMUNICATION AND PUBLICATIONS

Comments and opinions are communicated through a number of AURA publications such as Research Focus, The Wire, Research Weekly, etc.

NEXT GENERATION RESEARCH

GENERAL

The AURA Next Generation (NG) investment philosophy is a thematic investing approach with a focus on long-term structural growth. Structural growth stretches beyond the business cycle, both in terms of its dynamics and its duration.

NG research strives to seek out investment opportunities by identifying industries undergoing long-term transfor- mations, thus allowing the team to harness the power of the megatrends – as represented in their investment themes. By doing so, NG research aims to deliver superior investment returns.

METHODOLOGY

AURA NG Research employs a combination of proprietary top-down and bottom-up fundamental equity analysis techniques. In the first instance, NG research analysts identify growing industries with high barriers to entry and favour- able market share dynamics that are aligned with the NG investment themes and related sub-themes.

In the second instance, NG research analysts identify the leading and lagging companies within these industries. Leading firms hold a substantial competitive advantage and are able to generate sustainable growth and shareholder value crea- tion, while laggards are expected to trail behind.

STRUCTURAL EXPOSURE SCORES

Companies are analysed to determine their exposure to one of the AURA NG themes and are assigned with a struc- tural exposure score ('Next Generation score', 'NG score', or 'thematic exposure score'). The score provides a compre- hensive assessment of (a) whether a company is projected to benefit from or be threatened by structural change, i.e. if the implications for its business are positive or negative and (b) the degree to which the company is impacted (high, me- dium or low). The score ranges from -3 to +3, whereby the top two scores are associated with thematic leaders, while the bottom two are associated with thematic laggards.

+2 and +3	Thematic leaders: the businesses of these companies should strongly (+2) or very strongly (+3) benefit from the identified structural trends, leading to above-average or well-above-average sales and earnings growth as well as resulting in significant market-share gains versus its competitors.
-1 to +1	The businesses of these companies are unlikely to be affected strongly by the identified structural trends, causing minor headwinds (-1) or tailwinds (+1) to sales and earnings or having hardly any impact (0).
-3 and -2	Thematic laggards: the businesses of these companies should be strongly (-2) or very strongly (-3) threat- ened by the identified structural trends, leading to below-average or well-below-average sales and earnings growth as well as resulting in significant market-share losses versus its competitors.

THEMATIC RATING

The NG research team maintains a thematic rating on all of its themes under coverage, which outlines its current assessment of the theme's attractiveness from an investment point of view over a twelve-month horizon:

Bullish	Strongly positive expected returns at the upper end of historic norms, i.e. >15% for benchmark equity investment themes and >30% for more volatile and higher-risk themes.
Constructive	Moderately positive expected returns that are in line with historic norms, i.e. around 7.5% for benchmark equity investment themes and around 15% for more volatile and higher-risk themes.
Neutral	Flat expected returns subject to ranges between +/-10% for benchmark equity investment themes and +/-20% for more volatile and higher-risk themes.
Cautious	Moderately negative expected returns, reflecting a consolidation, i.e. around -7.5% for benchmark equity investment themes and around -15% for more volatile and higher-risk themes.
Bearish	Strongly negative expected returns at the lower end of historic norms, reflecting a sell-off, i.e. <-15% for benchmark equity investment themes and <-30% for more volatile and higher-risk themes.

MEANS OF COMMUNICATION AND PUBLICATIONS

Comments and opinions (generally in the form of Next Generation Studies on a particular investment theme or topic) are communicated through a number of AURA Research publications such as Research Focus, The Wire, Research Weekly, etc., as well as separate Next Generation podcasts.

EQUITY RESEARCH

GENERAL

AURA Equity Research conducts mainly secondary global equity research aimed at creating value for clients through single-stock recommendations and sector analyses. Primary sources of information are company data (financial reports, corporate websites, presentations, conference calls, management meetings), broker reports, Bloomberg Finance L.P., Refinitiv and FactSet.

METHODOLOGY

Analysts base their investment ratings on the analysis of a company's business model, the market the company operates in (growth outlook, demand/supply, technological developments, etc.), the company's market position, the competitive environment, the balance sheet, the legal framework and various risk factors. The analysts then compare the findings of their company analysis with market expectations and what is already reflected in the current share price. Different valua- tion methodologies are applied depending on the industry group, among them discounted cash flow valuation, sum-of- the-parts valuation and comparative valuation multiples. The most commonly used comparative valuation multiples are P/E (price-to-earnings ratio), EV/EBITDA (enterprise value to earnings before interest, taxes, depreciation and amorti- sation ratio), P/S (price-to-sales ratio) and P/B (price-to-book ratio).

RATINGS

The investment ratings in use are Buy, Hold and Reduce.

Buy	Expected to outperform the regional industry group by at least 5% in the coming 9-12 months, unless otherwise stated.
Hold	Expected to perform in line (±5%) with the regional industry group in the coming 9-12 months, unless otherwise stated.
Reduce	Expected to underperform the regional industry group by at least 5% in the coming 9-12 months, unless otherwise stated.

Under Review: An investment rating may be put under review by the relevant analyst due to significant unexpected events or news impacting the business activities of the company. In such cases, the current investment rating should be disregarded until the analyst publishes an updated investment recommendation.

The risk rating (**High/Medium/Low**) is a measure of a stock's expected volatility and risk of losses in the case of nega- tive news flow. This non-quantitative rating is based on criteria such as historical volatility, industry, earnings risk, valua- tion and balance-sheet strength.

MEANS OF COMMUNICATION AND PUBLICATIONS
Our systematically covered and rated universe of companies is made available daily in our Coverage List. Buy-rated com- panies are additionally featured on the Buy List, which is also published on a daily basis. The coverage universe is flexible. Coverage of companies can be initiated and discontinued according to client needs, share price upside potential, and important corporate actions (e.g. delisting, company breakup).

Coverage of companies is detailed in Baer®Insight Equity Research publications, where all necessary information about companies' financial results is made available. Buy-rated equities are updated on a quarterly basis. Hold- and Reduce- rated equities are updated as events warrant, but no less than semi-annually.* Comments and opinions on the compa- nies under coverage are also communicated through other AURA publications (e.g. The Wire or Research Weekly).

*Publication intervals may vary and do not always account for 90/180 days exactly. All indications about frequencies refer to the calendar year.

FIXED INCOME RESEARCH

GENERAL
AURA Fixed Income Research (FIR) frames the duration and segment strategy for bond investments in mature mar- kets and emerging markets, and provides secondary market research for a predefined universe of issuers. The strategy is elaborated in conjunction with Economic Research to ensure consistency in research strategy. For its strategy and issuer research, FIR incorporates data from external providers and third-party research, including information obtained from credit rating agencies (CRA).

FIR currently maintains a universe of sovereign issuers for which it assigns Buy, Hold or Sell ratings (active universe). These issuers are analysed using qualitative and quantitative analyses. Beyond this **active universe**, FIR maintains a broader **passive universe** of sovereign, financial and corporate issuers, which is analysed using the quantitative method- ology only. See below for details on the respective methodologies.

FIXED INCOME STRATEGY RESEARCH – METHODOLOGY
The fundamental assessment is derived using a top-down approach. Relative attractiveness is derived from macroeconomic forecasts and technical indicators. The duration and segment strategy is elaborated in conjunction with Economic Research to ensure consistency in research strategy.

FIXED INCOME STRATEGY RESEARCH – RATINGS
Fixed income market segments are rated as follows:

Overweight	Expected to outperform the broad fixed income market over the next 3-6 months.
Neutral	Expected to perform in line with the broad fixed income market over the next 3-6 months.
Underweight	Expected to underperform the broad fixed income market over the next 3-6 months.

FIXED INCOME ISSUER RESEARCH – ACTIVE UNIVERSE: METHODOLOGY

Fixed Income Research focuses on the analysis and assessment of sovereign issuers, which constitute its active universe. Analysts base their ratings on sovereign data from specialised providers, if possible on an adjusted basis. The observed variables include external vulnerability metrics, internal stability metrics and governance metrics; as well as a market- based risk assessment, such as credit-spread comparisons. The findings are compared to views provided by third-party research, including rating agency reports, where available.

FIXED INCOME ISSUER RESEARCH – ACTIVE UNIVERSE: ISSUER RATINGS & RISK CATEGORIES

Issuer ratings

All issuers of the **active universe** are assigned an investment rating:

Buy	The issuer has low default risk, strong fundamental data and/or its bonds are an attractive investment from a risk/return perspective, expected to outperform the comparable fixed income segment in the next six months.
Hold	The issuer has stable fundamentals and its bonds remain an attractive investment from a risk/return perspective although expected to perform in line with the comparable fixed income segment in the next six months.
Sell	The issuer's fundamental data has deteriorated significantly, with high default risk, and/or its bonds are no longer an attractive investment from a risk/return perspective.

Risk categories

Fixed Income Research assigns one of the following four risk categories to each issuer of the **active universe**:

Conservative	Issuers most likely to preserve their top rating throughout the business cycle.
Quality	Issuers very likely to service and repay debt within a five-year credit scenario. These issuers are likely to preserve their investment-grade rating throughout a normal business cycle.
Opportunistic	Issuers quite likely to service and repay debt within a five-year credit scenario. They have an attractive risk/return profile but are subject to rating downgrade risk and might thus be periodically replaced.
Speculative	Sub-investment-grade issuers likely to service and repay debt in the current credit scenario. These issu- ers are subject to a higher downgrade and default frequency, requiring active management.

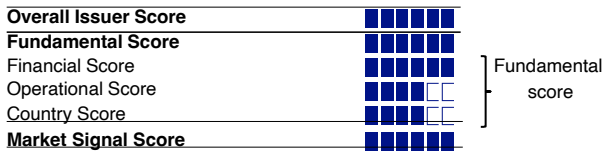## FIXED INCOME ISSUER RESEARCH – PASSIVE UNIVERSE: QUANTITATIVE METHODOLOGY

Issuers in the **passive universe** are assigned a score based on a quantitative methodology. The AURA quantitative scoring system is an automated method based on a proprietary algorithm that takes into account both business met- rics as well as market-based indicators for issuers of fixed income securities, or their respective legal guarantor. The scoring results are principally backward-looking (and are not a guarantee for future performance). Scores always refer to the issuer of fixed income securities only and not specifically to their outstanding securities. The scoring scale ranges from 1 to 6, with 6 being the strongest score and 1 being the weakest.

FIXED INCOME ISSUER RESEARCH – PASSIVE UNIVERSE: QUANTITATIVE METHODOLOGY: ISSUER SCORES

Two different frameworks are used to calculate scores for either **financial/corporate issuers** or **sovereign/suprana- tional** issuers. Both frameworks calculate an 'Overall Issuer Score', which consists of a weighted average of the issuer's 'Fundamental Score' and 'Market Signal Score'. The Fundamental Score consists of several component scores, which differ between financial/corporate issuers and sovereign/supranational issuers as follows:
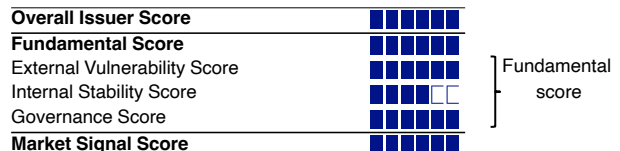
Financial/Corporate issuers

AURA issuer scores

Overall Issuer Score	
Fundamental Score	
Financial Score	⎤ Fundamental
Operational Score	⎬ score
Country Score	⎦
Market Signal Score	

Sovereign/Supranational issuers

AURA issuer scores

Overall Issuer Score	
Fundamental Score	
External Vulnerability Score	⎤ Fundamental
Internal Stability Score	⎬ score
Governance Score	⎦
Market Signal Score	

Please find definitions of all component scores below:

Overall Issuer/Guarantor Score – Explanation of score level

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 6 are expected to be able to service and repay their debt under all normal circumstances. Aura considers their senior unsecured debt as top quality.

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 5 are expected to be able to service and repay their debt with a very high probability. AURA considers their senior unsecured debt as high quality.

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 4 are expected to be able to service and repay their debt with a high probability. AURA considers their senior unsecured debt as safe.

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 3 are expected to be able to service and repay their debt but have a small risk of default. AURA considers their senior unsecured debt as slightly risky and only appropriate for risk-friendly investors with diversified portfolios.

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 2 have a non-negligible risk of default and may not be able to service and repay their debt. AURA considers their senior unsecured debt as risky and not appropriate for capital preservation.

Based on the Fundamental Score, as well as the Market Signal Score, issuers or guarantors with a score of 1 have a material risk of default and may not be able to service and repay their debt. AURA considers their senior unsecured debt as highly risky and not appropriate for capital preservation.

Fundamental Score – Explanation of score level

An issuer's Fundamental Score is a composite score (weighted average) of relevant factors. These factors differ for corporate and sovereign/supranational issuers.

The Fundamental Score of corporate issuers or guarantors is calculated based on data reported by the issuers or guar- antors and provided by third-party vendors that AURA Fixed Income Research regards as reliable, but for which it cannot take responsibility. The Fundamental Score of sovereign and supranational issuers and guarantors is calculated based on historical data and estimates of the International Monetary Fund, the World Bank and Transparency Interna- tional. It is then amended based on the economic forecasts of AURA Economic Research, where appropriate.

The Fundamental Score is calculated with proprietary weighting schemes. The corporate issuer or guarantor score captures the financial health (short-term liquidity and solvency) and the operational quality (long-term solvency) of an issuer or guarantor, while the Country Score includes aspects of internal stability (the likelihood of the government remaining solvent), external vulnerability (ability to service debt in foreign currencies) and governance (protection of investors' interest). For sovereign/supranational issuers, these factors make up the Fundamental Score. The weighting of the financial health indicators, such as leverage, interest coverage, level and stability of profit margin, and the oper- ational indicators, varies across the predefined ca 40 business sectors. The weighting scheme is calibrated to reflect the default probability of the issuer or guarantor in a mid-cycle environment. It can be adjusted at any time.

Financial Score – Explanation of score level

A ▪▪▪▪▪▪ 6 is awarded to issuers or guarantors that have reported very strong financial credit met- rics.

A score of 5 is awarded to issuers or guarantors that have reported strong financial credit metrics. A score of 4 is awarded to

is▪▪▪▪▪☐ guarantors that have reported solid financial credit metrics.

A ▪▪▪▪☐☐ 3 is awarded to issuers or guarantors that have reported moderate financial credit metrics. A score of 2 is awarded to

is▪▪▪☐☐☐ guarantors that have reported weak financial credit metrics.

A ▪▪☐☐☐☐ 1 is awarded to issuers or guarantors that have material deficits in financial credit metrics.

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Operational Score – Explanation of score level

A score of 6 is awarded to issuers or guarantors that have reported very strong operational indica- tors.

A ▪▪▪▪▪▪ 5 is awarded to issuers or guarantors that have reported strong operational indicators. A score of 4 is awarded to

issuers or guarantors that have reported solid operational indicators.

A ▪▪▪▪▪☐ 3 is awarded to issuers or guarantors that have reported moderate operational indicators. A score of 2 is awarded to

is▪▪▪▪☐☐ guarantors that have reported weak operational indicators.

A score of 1 is awarded to issuers or guarantors that have material deficits in operational indicators.

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Country Score – Explanation of score level

The Country Score reflects factors of internal stability, external vulnerability and governance of a corporate issuer's par- ent country. These factors are summarised in the Country Score for corporate issuers and in the Fundamental Score for sovereign/ supranational issuers and are explained below.

Countries with a score of 6 exceed basic governance and economic stability rules based on the above-described methodology. These countries may be regarded as very safe for investors.

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Countries with a score of 5 exceed basic governance and economic stability rules based on the above-described methodology. These countries may be regarded as safe for investors.

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Countries with a score of 4 fulfil basic governance and economic stability rules based on the above- described methodology. These countries offer sufficient protection for investors as long as the gen- eral economic environment stays stable. We regard the political and financial situation of these countries as better than average.

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Countries with a score of 3 fulfil basic governance and economic stability rules based on the above- described methodology. These countries offer sufficient protection for investors as long as the gen- eral economic environment stays stable. However, in the case of an adverse change in the environ- ment, these countries are likely to suffer disproportionally, increasing investment risks for debt hold- ers.

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Countries with a score of 2 do not fulfil some basic governance and economic stability rules based on the above-described methodology. These countries offer comparably minor protection for investors. Countries with a score of 1 do not fulfil several basic governance and economic stability rules based on the above-described methodology. Investor protection is low, and the e▪▪☐☐☐☐ deficiencies could seriously impair the ability of the sovereign and/or domestic issuers to service and repay their debt in an orderly manner.

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External Vulnerability Score – Explanation of score level

A score of 6 is awarded to issuers or guarantors that can service debt in foreign currencies under all circumstances.

A score of 5 is awarded to issuers or guarantors that have a very strong ability to service debt in for- eign currencies.

A score of 4 is awarded to issuers or guarantors that have a strong ability to service debt in foreign currencies.

A score of 3 is awarded to issuers or guarantors that are expected to service debt in foreign currencies as long as the general

economic environment stays stable.

A score of 2 is awarded to issuers or guarantors that have a limited ability to service debt in foreign currencies.

A score of 1 is awarded to issuers or guarantors that lack the ability to service debt in foreign curren- cies in an orderly manner.

Internal Stability Score – Explanation of score level

A score of 6 is awarded to issuers or guarantors that are expected to remain solvent under all circum- stances.

A score of 5 is awarded to issuers or guarantors that have a very high probability of remaining sol- vent.

A score of 4 is awarded to issuers or guarantors that have a high probability of remaining solvent.

A score of 3 is awarded to issuers or guarantors that are expected to remain solvent but have a small risk of default.

A score of 2 is awarded to issuers or guarantors with a non-remote risk of insolvency. A score of 1 is awarded to issuers or guarantors that have a material risk of insolvency.

Governance Score – Explanation of score level

Countries with a score of 6 exceed basic governance rules. These countries may be regarded as very safe for investors.

Countries with a score of 5 exceed basic governance rules. These countries should be regarded as safe for investors.

Countries with a score of 4 fulfil basic governance rules. These countries offer sufficient protection for investors as long as the general economic environment stays stable. We regard the political and financial situation of these countries as better than average.

Countries with a score of 3 fulfil basic governance rules. These countries offer sufficient protection for investors as long as the general economic environment stays stable. However, in the case of an adverse change in the environment, these countries are likely to suffer disproportionally, thereby in- creasing investment risks for holders of debt.

Countries with a score of 2 do not fulfil some basic governance rules. These countries offer compara- bly minor protection for investors.

Countries with a score of 1 do not fulfil several basic governance rules. Investor protection is low, and the economic deficiencies could seriously impair the ability of the sovereign and/or domestic issuers to service and repay their debt in an orderly manner.

Market Signal Score – Explanation of score level

The Market Signal Score is based on the spread between the issuer's or guarantor's yield to maturity of a synthetic five-year senior unsecured bond and the risk-free rate, usually the dominant government bond in the respective cur- rency. In case the synthetic five-year senior unsecured bond cannot be calculated, bonds of a different payment rank or maturity might be used to calculate the Market Signal Score.

A score of 6 is granted to issuers or guarantors whose bonds trade with a credit spread of up to 40 basis points over risk-free government bonds, implying no default risk.

A score of 5 is granted to issuers or guarantors whose bonds trade with a credit spread between 41 and 100 basis points over risk-free government bonds, implying very low default risk.

A score of 4 is granted to issuers or guarantors whose bonds trade with a credit spread between 101 and 180 basis points over risk-free government bonds, implying low default risk.

A score of 3 is granted to issuers or guarantors whose bonds trade with a credit spread between 181 and 300 basis points over risk-free government bonds, implying considerable default risk.

A score of 2 is granted to issuers or guarantors whose bonds trade with a credit spread between 301 and 450 basis points over risk-free government bonds, implying high default risk.

A score of 1 is granted to issuers or guarantors whose bonds trade with a credit spread above 451 basis points over risk-free government bonds, implying very high default risk.

MEANS OF COMMUNICATION AND PUBLICATIONS

Strategy: Comments and opinions on the fixed income strategy are communicated through a number of AURA publications such as Research Focus, The Wire, Research Weekly, etc.

Active universe: Our active universe of sovereign issuers is made available daily in our Coverage List. Buy-rated sov- ereign issuers are additionally featured on the Fixed Income Issuer Buy List, which is also published on a daily basis.
The coverage universe is flexible. Coverage of issuers can be initiated and discontinued according to investment con- viction, resource capabilities and the issuer's ability to honour their debt obligations.

Information of the sovereign issuers in the active universe are detailed in a Baer®Insight Fixed Income publication, where all necessary information about the issuer's internal stability, external vulnerability and governance is made available. Ratings and assessments of sovereign issuers will be updated as events warrant, but no less than semi-annu- ally.*

Passive universe: The results of the quantitative analysis may be displayed as the Issuer Overall Score or as the com- ponent scores of the Issuer Overall Score on the Bond Portrait (a publication that does not constitute investment re- search) for all issuers of the passive universe. The scores of financial or corporate issuers are updated as events war- rant, but no less than semi-annually. Scores of sovereign or supranational issuers are updated as events warrant, but no less than annually.* In the event the Market Signal Score cannot be calculated for an issuer, then the issuer's Mar- ket Signal Score section is empty.

Comments and opinions on the issuers within the active and passive universe are also communicated through other AURA publications (e.g. The Wire, Research Weekly, Research Focus, etc.).

*Publication intervals may vary and do not always account for 180/360 days exactly. All indications about frequencies refer to the calendar year.

ECONOMIC RESEARCH

GENERAL
AURA Economic Research produces global economic analyses with a focus on current and future growth, the infla- tion backdrop, central bank interest rates and benchmark bond-yield developments, and integrates input from Commod- ity, Currency and Fixed Income Research. Whenever possible, primary research via proprietary indicators and models is used. Gaps are filled with secondary research.

METHODOLOGY
AURA Economic Research determines the global economic backdrop and outlook using:
•Own analysis and aggregation tools, including proprietary models and indicators, using data from public or private data providers, such as statistical offices or financial information systems.
•Various secondary research reports: the sources being integrated must fulfil the principles of consistency and plausi- bility and must be backed by facts.
•Input from other research units within AURA , in particular Commodity Research, Currency Research, Fixed In- come Research and Research Asia, within the permitted framework.

RATINGS
AURA Economic Research does not provide explicit ratings but rather generic forecasts of key economic indicators.

MEANS OF COMMUNICATION AND PUBLICATIONS
The AURA Baseline Scenario publication presents the economic backdrop and outlook in quantitative terms and is updated every month or on special occasions.

A qualitative description of changes in the scenario and risk measures is added when necessary. Some responsibilities for forecasts for regions and indicators are split among Economic Research, Fixed Income Research and Research Asia.

News flow and recent substantial forecast adjustments are communicated in the The Wire publication. An overview of important economic events and publication of data is provided in key Research publications (such as Research Weekly). The Research Focus publication is used on an ad-hoc basis to outline current pressing topics in more detail or to provide in-depth analysis of a specific topic. Possible asset-market implications and recommendations included in publications from Economic Research are closely coordinated with the other Research teams. In client presentations, Economic Re- search outlines the global economic backdrop and outlook, including the AURA view on interest rates, bond yields and exchange rates. Media presence includes contributions to financial market surveys, print media (interviews, quotes, own articles), and radio/TV interviews.

CURRENCY RESEARCH

GENERAL
AURA Currency Research analyses and ranks currencies out of a global universe according to their attractiveness over short-term (three months) and longer-term (12 months) horizons. The aim is to create value for clients by deter- mining which currencies offer an investment opportunity and which currencies need to be avoided from an investment perspective. The general goal is to detangle currency risks from other investment risks in order to contribute to a
transparent and efficient investment process. Advice on whether to conduct investments in foreign currency – hedged or unhedged – follows straight from this approach. In addition, AURA Currency Research conducts point fore- casts for the bilateral exchange rates over the forecast horizons.

METHODOLOGY

The bilateral exchange rate analyses and forecasts are anchored in a long-term projection, determined mainly by valu- ation measures such as purchasing power parity, terms-of-trade developments, external financing needs and produc- tivity differentials. The medium-term forecasts also take flows and central bank policy into account, whereas the shorter-term projections factor in sentiment, momentum, correlations and positioning. The final exchange rate fore- casts are determined employing a heuristic approach rather than following a fully specified and mechanical forecast-
ing model. The exchange rate forecasts take into account the global macroeconomic picture, as well as the financial market constitution, in order to determine the prevailing global currency themes, which in turn serve to identify the relative importance of the above-mentioned exchange-rate drivers.

The responsibilities for the various currencies are split among the different country and regional specialists within Jul- ius Baer Research. The consistency of the various bilateral exchange rates is ensured by a dedicated Head of Currency Research, who has the final responsibility for all exchange rate forecasts and the currency rankings.

RATINGS

Exchange rates are relative prices. Hence, the currency rating should be understood as a relative rating. The currency ranking is conducted both for the short-term (three months) as well as the long-term (12 months) exchange rate hori- zons, incorporating the exchange rate forecasts, the respective forward exchange rates, as well as the implied volatili- ties. For each of the currencies in our universe of 28 currencies, we award a Bullish, Neutral, or Bearish ranking based on both the expected spot change and the risk-adjusted total returns against the US dollar as the base currency.

The simpler spot-based ranking reflects relative expected performances, calculating the expected percentage change of each currency against the base currency over the short- and long-term horizons. The performances are rescaled using a normal distribution function and ranked into three buckets (Bullish, Neutral, or Bearish).

The total return ranking very much follows an investment-like perspective by calculating total expected returns against the base currency, based on the deviation of the forecasted spot exchange rate against the respective forward exchange rates. If forward exchange rates are not available, then non-deliverable forward exchange rates are used.
The expected total returns are risk-adjusted (to reflect the risk that investors are exposed to during the investment) by deducting the implied volatility of the exchange rate scaled by a factor. The resulting volatility-adjusted total re- turns are rescaled by using a normal distribution function and ranked into three buckets (Bullish, Neutral, or Bearish).

Bullish	The expected spot change ranks in the upper quartile of a normal-distribution-scaled ranking of the covered currencies.
Neutral	The expected spot change ranks between the upper and lower quartile of the normal-distribution-scaled ranking of the covered currencies.
Bearish	The expected spot change ranks in the lower quartile of a normal-distribution-scaled ranking of the covered currencies.

Risk-adjusted total return ranking

Bullish	Volatility-adjusted total expected return ranks in the upper quartile of a normal-distribution-scaled ranking of covered currencies.
Neutral	Volatility-adjusted total expected return ranks between the upper and lower quartile of the normal-distribu- tion-scaled ranking of covered currencies.
Bearish	Volatility-adjusted total expected return ranks in the lower quartile of a normal-distribution-scaled ranking of covered currencies.

MEANS OF COMMUNICATION AND PUBLICATIONS

The currency forecasts are updated and published monthly in the Currency Fact Sheets and Baseline Scenario publica-tions, which also include a short rationale for the forecasts and the associated risks. In addition, currencies are com- mented on in The Wire, the Research Weekly, and other publications, which also include forecast tables depicting se- lected currency forecasts. Special topics and alerts on currency developments are discussed in Research Focus publica- tions.

COMMODITY RESEARCH

GENERAL

AURA Commodity Research conducts global commodity research aimed at creating value for clients through invest- ment recommendations and price forecasts in the commodity sector. The focus is on the energy, precious and base met- als segments, which are covered on an ongoing basis. In addition, research is performed on selected commodities outside of this framework upon request. Commodity Research analyses the underlying commodities, as opposed to AURA Equity Research, which covers companies that are active in the commodity complex. A special focus is placed on the- matic investment recommendations to determine long-term trends. Primary sources of information are broker reports, independent research, commodity publications, Bloomberg Finance L.P., Refinitiv, contacts with companies, and com- pany presentations.

METHODOLOGY

For our price forecasts, we use supply-and-demand models that are based on very diverse data sets, ranging from com-parably short-term relevant inventory or tactical investor positioning data to longer-term relevant industry, market and technology trends. Movements in interest rates and the USD are key drivers of commodity prices. Thus, our views are aligned and discussed with our economists' and strategists' expectations.

RATINGS

Our recommendation methodology is carried out in two steps. First, we translate the output from our models into direc- tional price views and corresponding price forecasts:

Bullish	Upward-sloping price path, taking into account historical volatility.
Constructive	Future price path, with more upside than downside.
Neutral	Sideways-trading prices, taking into account historical volatility.
Cautious	Future price path, with more downside than upside.
Bearish	Downward-sloping price path, taking into account historical volatility.

Second, specific commodity investment recommendations are given depending on the upside (Bullish) or downside (Bearish) view for single commodities, the shape of the term structure (whether there are profits or losses associated with rolling futures exposure), and the volatility of the curve. These recommendations can be either on the long or short side of futures contracts or even a combination of both (e.g. pair trades) and are published on a regular basis in our key publications. These recommendations are provided for return-oriented investors with a comparatively shorter-term in- vestment horizon and can differ significantly from recommendations for diversification-oriented investors with a long- term investment horizon.

MEANS OF COMMUNICATION AND PUBLICATIONS

Our ratings and recommendations are communicated through a commodity-specific publication (Research Focus, Com-modity Fact Sheets) as well as other AURA   Research publications (The Wire, Research Weekly). Thematic studies in coordination with Equity Research are also published under the heading of Research Focus publications.

DIGITAL ASSETS RESEARCH

GENERAL

AURA Digital Assets Research is responsible for the analysis of the nascent class of assets based on blockchain tech- nology. These assets include crypto coins and tokens as well as Decentralised Finance (DeFi) platforms. Digital assets offer unique characteristics which distinguish them from traditional asset classes such as equities and bonds, while at the same time showing volatility levels that go beyond those of traditional asset classes. The focus of AURA Digital As- sets Research is on outlining the fundamental trends taking place in the asset class and to assess its long-term potential on a single-asset basis, referred to as tokens, as well as from a portfolio perspective. The analysts differentiate between payment tokens, infrastructure tokens, financial tokens, service tokens, and gaming tokens, limiting their scope to tokens which they consider generally investable, i.e. which have a sufficiently long history as well as a sufficiently large market capitalisation and liquidity. For those tokens considered investable, they perform a due diligence in order to assess their security, solidity, and their value proposition, incorporating various elements such as an asset's white paper and the background of its founding members.

METHODOLOGY

For their research, ratings and risk scores, AURA Digital Assets Research analysts rely on a set of quantitative short-, medium- and long-term indicators. These indicators include price information as well as asset-specific information stored on the blockchain (on-chain data). The blockchain itself is a ledger of all historical transactions, thereby providing im- portant insights into the developments and dynamics of a specific digital asset, including information on holding struc- tures and holding concentrations or active addresses within the network. In addition to that, the analysts use dedicated qualitative research on digital assets in order to assess the short- and long-term attractiveness of the asset class in gen- eral and of single assets in particular. Primary sources of crypto-specific information include Chainalysis, Coin Metrics, Glassnode and The Block.

Quantitative short-term indicators are primarily used to assess the market sentiment for crypto coins and tokens as well as for the asset class overall. Medium- and long-term indicators as well as the dedicated qualitative research are used to formalise a fundamental assessment on single crypto coins and tokens or DeFi platforms based on their unique charac- teristics as well as on the asset class overall.

RATING

Digital assets are assigned one of the following fundamental ratings, which reflect expected risks and returns:

Bullish	Strongly positive expected risk-adjusted returns at the upper end of historical norms
Constructive	Moderately positive expected risk-adjusted returns in line with historical norms
Neutral	Flat expected risk-adjusted returns in line with historical norms
Cautious	Moderately negative expected risk-adjusted returns in line with historical norms
Bearish	Strongly negative expected risk-adjusted returns at the lower end of historical norms

In addition to the fundamental rating, a quantitative risk score is assigned. This score is intended to provide an assess- ment on an asset's short-term market environment, particularly taking into consideration the asset class's susceptibility to sentiment swings. It reflects a number of quantitative indicators, including price information and asset-specific on- chain data in relation to its fundamental assessment, and it expresses the degree of uncertainty the analysts attribute to that particular asset at the time of analysis.

The quantitative risk score is defined as follows:

High	The market environment is characterised by a high degree of uncertainty, taking into account the as- set's current pricing and its current fundamental backdrop.
Medium	The market environment is characterised by a medium degree of uncertainty, taking into account the asset's current pricing and its current fundamental backdrop.
Low	The market environment is characterised by a low degree of uncertainty, taking into account the as- set's current pricing and its current fundamental backdrop.

For assets where no fundamental rating can be derived due to a lack of quantitative data, the analysts provide a con- stant monitoring of its value proposition and investment case. This assessment is complemented by the quantitative risk score as described above.

MEANS OF COMMUNICATION AND PUBLICATIONS

AURA Digital Assets Research communicates its research and ratings through asset-class-specific publications (Re- search Focus, Digital Asset Fact Sheets).

TECHNICAL ANALYSIS

GENERAL

AURA Technical Analysis conducts primary technical analysis aimed at creating value through investment recom- mendations based on historical prices. Technical Analysis uses historical market prices in order to assess market condi- tions by chart reading, i.e. following chart patterns, and by observing indicators calculated from historical price move- ments. Technical Analysis recommendations are independent and not linked to the fundamental in-house view and may differ at any time due to different tools to assess market conditions and recommendations.

METHODOLOGY

Analysts base their investment ratings and analyses on historical data, which is analysed through visual pattern reading and computer-assisted indicators. The combined approach helps to determine a rating and assessment for any instru- ment with historical market data. All markets can be analysed using the same method, as the theory of technical analysis is based on the belief that all relevant information is priced in markets and that price trends and patterns are repeated throughout history. Technical indicators range from simple trend models to complex dynamic indicators (e.g. momen- tum oscillators). These provide information on short-, medium- and long-term trends, overbought or oversold markets, and trend reversals or confirmations, among other key characteristics of price movements.

RATINGS

Absolute rating system for global technical analysis:

Buy	↗	Expected to advance by at least 10% in the coming 3-12 months, unless otherwise stated.
Hold	→	Expected to stay flat (±5%) in the coming 3-12 months, unless otherwise stated.
Reduce	↘	Expected to decline by at least 10% in the coming 3-12 months, unless otherwise stated.

All Buy and Sell recommendations are performance-tracked, and any recommendation changes are communicated via Research publications.

Relative rating system for global technical analysis:

Overweight	Expected to outperform its benchmark by at least 5% in the coming 3-12 months, unless otherwise stated.
Neutral	Expected to perform in line (±5%) with its benchmark in the coming 3-12 months, unless otherwise stated.
Underweight	Expected to underperform its benchmark by at least 5% in the coming 3-12 months, unless otherwise stated.

TECHNICAL INDICATOR READINGS (TREND)

Besides individual recommendations, the Technical Analysis team also publishes technical indicator readings, which are mechanically calculated as a source of additional information; they are not intended as investment recommendations. These readings show current trends on an absolute-price or relative basis using up, flat and downtrend arrows for any of the three time horizons tracked. At the same time, support and resistance levels may be displayed.

MEANS OF COMMUNICATION AND PUBLICATIONS

Opinions and recommendations are communicated through the Technical Investment Strategy (TIS) as well as other Jul- ius Baer Research publications (e.g. The Wire, Research Weekly).

METHODOLOGY REVIEW

This document will be reviewed at least every two years or as changes in the AURA Research Methodology occur.