Research
01 August 2023

Quantamentals

Style Counsel Tool: One Tool to rule them all

Key Points

- The Style Counsel Tool is a highly differentiated portfolio management tool inspired by fundamental insights, and leveraging our Style research.
- It allows investors to measure and manage their style exposures, stock drivers and expected outcome based on numerous economic regimes.
- We introduce new features that enhance the ability for stock level idea generation, including the ability to perform economic scenario analysis.

Macquarie's Style Counsel Tool: An exposure management tool

- The Style Counsel Tool provides investors with actionable insights covering portfolio style analysis, economic scenarios and stock level idea generation. Traditional risk models only show broad Style positioning, which can make it difficult to draw actionable insights from analysis.
- This report acts as a handbook for the Style Counsel Tool. Originally designed for Fundamental Equity Investors, we document the tools typical workflow and common use cases that extends to BDMs, Risk Managers, Fund of Fund Managers and Asset Allocators. The tool runs independently on the client desktop and is customisable to any universe.

Measure & manage a portfolio's style flavour exposure

- Investors can gain a deep understanding of their style flavour exposures and the expected outcome based on multiple economic regimes. Style flavours are the pillar of Style 2.0 and recognise the different subsets of value, growth and quality. This is explored fully in our Style Series.
- The tool transparently reveals the major stock drivers of a portfolio's style exposures, providing actionable insights for portfolio managers.

Measure economic bets; communicate more effectively (NEW)

- The tool also shows your portfolio's economic bets, derived from stock macro betas and from portfolio style flavour exposures. These Style flavours exhibit distinct behaviour based on the macro environment. Used together this helps investors avoid unintended economic bets as well as make client communication easier and more intuitive.

Perform economic scenario analysis (NEW)

- A new feature allows investors to undertake Regime What-If analysis to help manage economic bets & to plan for economic outcomes (e.g., over the cycle, or in different risk, inflation or rates environments).

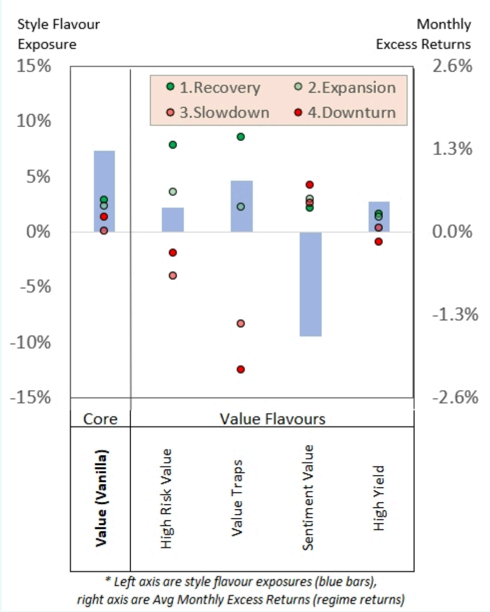
Stock level idea generation (NEW)

- Investors can use the Style Counsel Tool for idea generation via stock screening, or by looking up the top and bottom ranked stocks across a range of style flavours. Investors can also hunt for stock ideas aligned to their economic expectations using the new Regime Scenarios report.

Quantitative
All Regions

There are multiple flavours of Value

Our tool shows this Value fund is positioned for a recovery or expansion



Source: Macquarie Quantitative Research, August 2023

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MACQUARIE'S STYLE COUNSEL TOOL - A POWERFUL TOOL FOR INVESTORS

In our most recent style series report we introduced Style 2.0, which pulls all our previous style research into one consistent framework. We also introduced the beta of a tool giving investors Style 2.0 portfolio insights: the Style Counsel Tool. With development now finalised, this report showcases the tool's powerful new features and connected workflows.

The tool was originally developed to help fundamental investors with portfolio management and idea generation. We also found use cases for Quantitative Investors, Risk Managers, and Business Development Managers. However, we discovered the tool's utility extended much further: into equity fund of funds management, asset allocation, as well as asset consulting.

What the Style Counsel Tool can do

1) Manage your portfolio's Style Flavour Exposures

2) Manage your portfolio's Economic Exposures

3) Generate investment ideas aligned to your investment process or economic expectations

New Features / New Workflows include:

- *Understand and manage your Portfolio in Style 2.0*
  - ⇒ measure your portfolios exposures to style flavours
  - ⇒ transparently trace these flavour exposures back to the stocks driving these exposures (allows investors to granularly manage their style flavour exposures).
  - ⇒ toggle between 9 different market, risk and economic regimes to better understand in what regimes these style flavour exposures typically out / under perform.
- *Understand and manage your Portfolio's economic exposures*
  - ⇒ measure your portfolios economic bets
  - ⇒ use the Regime Scenario tool to manage positions aligned to your economic forecasts.
- *Idea Generation - 3 different ways to search for companies to consider in your fund:*
  - ⇒ Target specific Style Flavours that are aligned to your investment process
  - ⇒ Target specific Regime Scenarios you expect to ensue
  - ⇒ Explore and screen your investment universe by multiple style flavour categories

Customisations

1) Any Investment Universe

2) Nine regions to choose style flavour returns best aligned to your investment universe.

3) Nine different macroeconomic regimes used to understand your portfolio

The tool is transparent and highly flexible with customisations as follows:

- *Portfolios, Custom Investment Universe, & Custom Benchmarks*
  - ⇒ Portfolio
    - Input your portfolio using either sedols or bloomberg tickers
    - Enabled for Long/Short & Market Neutral (& any combination in between)
  - ⇒ Custom Investment Universe
    - add/subtract stocks by ticker, market cap, or by other metadata (e.g., sector/country)
    - or create an investment universe from only the tickers you provide.
  - ⇒ Benchmark
    - Ability to add your own benchmark, including custom weights
- *Regimes include the following*
  - ⇒ Market regimes: Value vs Growth; Up vs Down; Momentum vs Non Momentum
  - ⇒ Risk Regimes: VIX levels; VIX changes
  - ⇒ Economic Regimes: changes in 10 Yr Rates; Inflation Levels; US Inflation Expectations; Economic Cycle (based on the OECD Leading Indicator)
- *Regions used in Regime Analysis*
  - ⇒ The tool currently displays the regime returns for all major global markets:

This tool will also act as the focal point and funnel of all future research findings that we conduct in this style series such as: our forthcoming reports on Quality; future reports on style migration; refinements in our style flavour definitions; and additional regions & regimes.

The main body of the report is structured around 3 critical work flows. As we progress through each workflow we highlight the use cases for each type of client.

Please contact the Macquarie Quant team if you would like to trial the tool.

Style 2.0 in Action

1. Recognises the different subsets of value, growth and quality

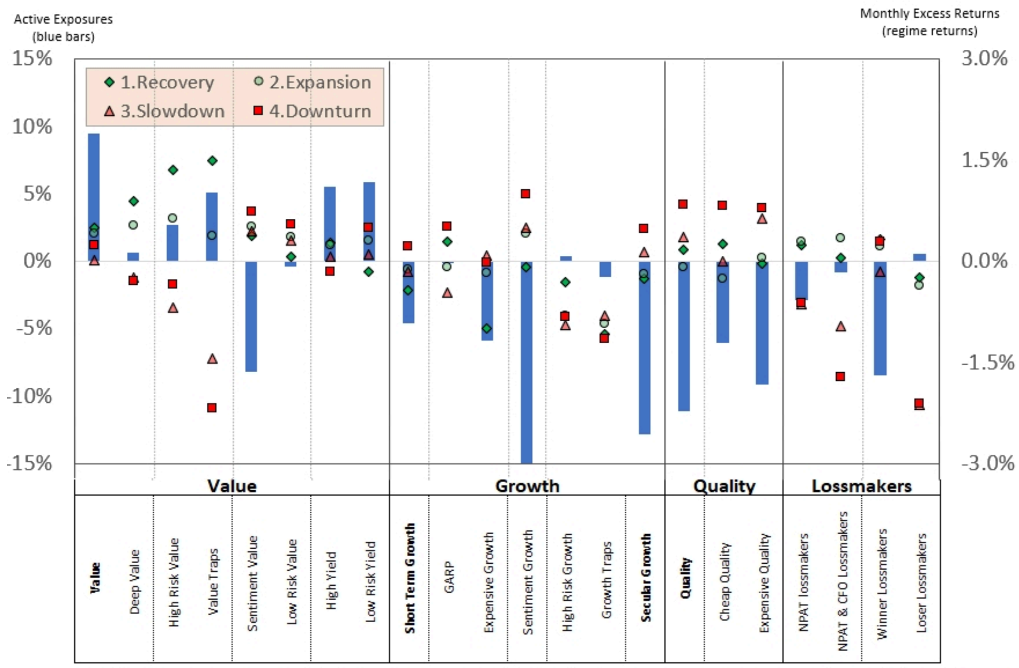
2. Aligns with investor intuition

3. Provides actionable insights

The Style Counsel Tool: is a practical portfolio management tool

- The Style 2.0 skyline (below) sits at the heart of the Style Counsel Tool. It exhibits your portfolio's active exposure to each style flavour
- Juxtaposed against these exposures is each style flavours returns through the economic cycle (nine regimes available to choose from including risk, rates and inflation regimes).

Figure 1 - This value fund is exposed to Value Traps, a pro-cyclical bet



* Right hand side axis are Average Monthly Excess Returns over Economic Cycle (monthly returns are average of equal and cap weighted portfolios of Style Flavours)

Source: Macquarie Quantitative Research, August 2023

Know your economic exposures

Identify and manage regime headwinds from unintended economic bets

- Different Style Flavours exhibit different risk/return trade-offs that vary over the economic cycle, and in different risk, rates & inflationary environments.
- The Style Counsel Tool uses your portfolio's style flavour exposures, as well as macro betas, to make visible your portfolio's economic bets (table below). This can help avoid unintended economic bets as well as make client communication easier & intuitive.
- Traditional risk models only show broad Style positioning, which can make it difficult to draw actionable insights on your economic bets.

Figure 2 - Know how your portfolio is positioned for different regimes

		PORTFOLIO'S REGIME FORECASTS (AND CONVICTION)*	
Regime Type	**Regime State**	**Portfolio positioned for**	**Portfolio positioned against (Contrarian)**
Market	Value/Growth	Growth (weak)	Value (mild)
Market	Up/Down		Down Market (weak)
Market	Momentum / Not		Non Mom Market (weak)
Risk	VIX Level	Low VIX (weak)	Medium VIX (mild)
Risk	VIX Change		
Economic	10Yr Change		Falling 10Yr (weak)
Economic	Inflation Level		High Inflation (weak)
Economic	US Infl Exp Change	Falling US Infl Exp (weak)	Rising US Infl Exp (weak)
Economic	Economic Cycle		Recovery (weak)

* We measure this by combining both portfolio level Macro Betas (aggregated from stock level), as well as Implied Regime Forecasts from Style Flavours or GICS L2. On the implied forecasts we measure the alignment of a Regime States' returns (the dots) to a portfolio's Style Flavours (or GICS L2) exposures as per blue bars. The strength of the overall alignment (or conviction) can be "weak", "mild" or "strong". An example: "Growth: weak" means a portfolio is weakly aligned to a growth environment, implying it may weakly perform better when growth outperforms.

Source: Macquarie Quantitative Research, August 2023

Stock level granularity enables actionable insights

Manage your style flavour exposures

- The Style Counsel Tool enables ***actionable insights*** by transparently revealing the major stock drivers of your portfolio's style exposures (e.g., Value Traps flavour below)
- This allows investors to easily adjust their positions to increase or decrease style flavour exposures.
- *Stock level idea generation* is also possible using the screening functionality.

Figure 3 - Transparently see drivers of your portfolios Flavour exposures

Short Term Growth

Table A: Top Positive Contributors to Portfolio's Style Flavour Exposure (stocks can be inside or outside the screen)

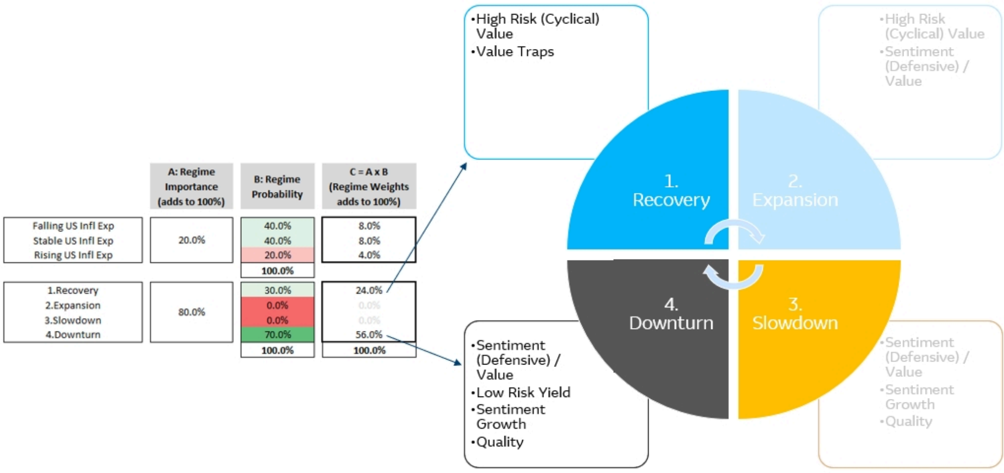
Rank	Bbg Ticker	Sedol	Name	Sector	Industry	Mkt Cap AU$mm	EPS Growth NTM	% Rank	NPAT Loss	Portfolio Weight	Benchmark Weight	A = Active Weight	B = Style Flavour Exposure	Contribution to Prtf Exposure (= A x B)	% Contribution to Prtf Exposure
1	OML AU	BSXN8D	Ooh!Media Ltd.	Communication Services	Media	1,005	27.6%	79%	0	5.25%	0.05%	5.20%	94%	4.90%	790%
2	BGA AU	B56CQJ	Bega Cheese Ltd.	Consumer Staples	Food Products	1,262	20.2%	74%	0	3.05%	0.06%	2.99%	87%	2.60%	419%
3	SUN AU	658508	Suncorp Group Ltd.	Financials	Insurance	17,263	12.5%	61%	0	4.46%	0.83%	3.63%	36%	1.31%	211%
4	ANZ AU	606558	Anz Group Holdings Ltd.	Financials	Commercial Banks	77,567	9.4%	51%	0	8.10%	3.73%	4.37%	22%	0.96%	155%
5	QUB AU	B1L4BC	Qube Holdings Ltd.	Industrials	Transportation Infrastru	3,896	15.5%	67%	0	1.62%	0.19%	1.43%	66%	0.94%	152%
6	NCK AU	B00VZV	Nick Scali Limited	Consumer Discretionary	Specialty Retail	313	7.1%	44%	0	4.03%	0.02%	4.02%	15%	0.61%	98%
7	DOW AU	646557	Downer Edi Limited	Industrials	Commercial Services & S	3,816	8.3%	48%	0	3.33%	0.18%	3.15%	19%	0.59%	95%
8	NAB AU	662460	National Aus.Bank Ltd.	Financials	Commercial Banks	67,247	13.6%	63%	0	4.30%	3.23%	1.07%	51%	0.55%	89%
9	LNK AU	BYZBCY	Link Adm.Hdg.Ltd.	Information Technology	It Services	3,676	6.9%	44%	0	2.98%	0.18%	2.80%	15%	0.41%	66%
10	ORA AU	BH4TCW	Orora Ltd.	Materials	Containers & Packaging	3,946	5.3%	39%	0	2.79%	0.19%	2.60%	11%	0.28%	45%
11	RHC AU	604199	Ramsay Health Care Ltd.	Health Care	Health Care Providers &	7,012	4.4%	34%	0	3.41%	0.34%	3.08%	8%	0.25%	41%
12	SGM AU	B0LCW7	Sims Ltd.	Materials	Metals & Mining	1,711	7.6%	46%	0	1.48%	0.08%	1.39%	17%	0.24%	38%
13	JBH AU	670262	Jb Hi-Fi Limited	Consumer Discretionary	Specialty Retail	2,594	2.2%	26%	0	3.36%	0.12%	3.24%	5%	0.17%	27%
14	IAG AU	627102	Insurance Aus.Group Ltd.	Financials	Insurance	16,822	2.1%	24%	0	4.42%	0.81%	3.62%	5%	0.17%	27%
15	GWA AU	639294	Gwa Group Ltd.	Industrials	Building Products	705	0.0%	18%	0	4.74%	0.03%	4.71%	3%	0.15%	24%
												Portfolio Exposure (stocks in Table A)		14.68%	2367%
												Portfolio Exposure (all stocks)		0.62%	

Source: Macquarie Quantitative Research, August 2023

Perform economic scenario analysis

What-if analysis to help remediate unintended economic bets / idea generation

Figure 4 - Get recommendations aligned to your economic expectations



Source: Macquarie Quantitative Research, August 2023

Figure 5 - Actionable insights for PMs, BDMs, Asset Allocators and Fund of Fund Managers (Use Cases)

<table>
<tr><td>Fundamental Portfolio Managers /
Portfolio Risk Analytics</td><td>

Portfolio Management/Risk Analytics:

Identify style flavour exposures, historical performances of these by regimes and manage exposures via identifying stocks driving those exposures.
While traditional Risk models and style analytics show exposure to Value, they won't show what type of Value flavour (e.g., defensive vs cyclical value), nor identify implicit economic bets.
Clearly identify and remediate any unintended macro-economic tilts.

Idea generation / Alpha:

Identify stocks within targeted style flavours for further investigation (screening).

</td></tr>
<tr><td>Quantitative Portfolio Managers</td><td>

Use style flavour exposures in portfolio construction by constraining portfolio's style flavour exposures (min/max) as well as individual stock exposures to style flavours.
Blend alpha scores with style flavour exposures.
</td></tr>
<tr><td>Business Development Managers / Client Liaison</td><td>

Better communicate underlying narrative of your portfolio exposures, thematic & economic tilts (and rationale) to clients.
Align clients by pre-emptively identifying which economic environments lead to out/underperformance.
</td></tr>
<tr><td>Asset Allocation</td><td>

Use style flavours to make more targeted investment decisions over the cycle, allowing for style allocation beyond the naïve Value/Growth paradigm (Style 1.0).
Clearly identify any aggregate economic bets and either neutralise or take a view on future regimes via tilting towards a fund manager to neutralise or let fund manager run with it.
</td></tr>
<tr><td>Fund-of-Fund Managers</td><td>

Access style flavour exposure of the aggregate equity portfolio and identify & remediate unintended macro positioning.
Better understand each funds style flavours and use the regime analysis to better cross-examine fund managers as to how they are positioned and why.
Understand your managers over time and identify shifts in style flavour & implied macro bets.
Actively manage style flavour exposures in light of the macro-economic environment
</td></tr>
</table>

Source: Macquarie Quantitative Research, August 2023

Ways the tool adds value

1) Better understand and manage your portfolios than Style 1.0

2) Identify and manage outliers (Style Flavours, Economic Exposures)

3) Idea Generation

An Exposure Management Tool rather than a Risk Model

- The best way to think of the Style Counsel Tool is as an ***exposure management and idea generation tool*** rather than a risk management tool. The exposures it measures and helps manage are the Style Flavours (the granular style categories of Style 2.0) as well as its macroeconomic bets, both of which may have strong conditional return patterns in different economic environments.
- The tool (and style research series) was born out of a frustration with traditional risk models style definitions (Value, Growth), as they are too broad and academic to manage exposures effectively, especially in different macroeconomic regimes. For example broad value (as per Style 1.0) won't pick up the macroeconomic bets of value flavours such as High Risk Value or Value Traps (or that Sentiment Value is much less sensitive to the economic cycle).
- Risk Models are also more opaque due to factor orthogonalisation, which sometimes leads to counterintuitive exposures. Furthermore, unless a stock's marginal contribution to risk is extreme, they aren't as practical ex-ante.
- Figure 6 below compares the output of Style 1.0 (Panel A) against the output of Style 2.0 (Panel B).

Figure 6 - Style Flavours reveal a more nuanced narrative vs risk models

Exposure Analysis for various portfolios	Value	Yield/Income	Multi Manager	Growth	ESG/Sustainable
Panel A: Risk Model Exposures	**FUND EXPOSURE TO AXIOMA FACTORS**				
Exchange Rate Sensitivity	-0.1	0.0	0.1	0.2	0.0
Market Sensitivity	0.0	0.1	0.0	0.3	0.0
Volatility	0.1	-0.1	0.1	0.0	0.0
EM Sensitivity	-0.3	-0.1	0.0	0.0	0.1
Size	-0.3	0.0	-0.2	0.1	0.0
Liquidity	-0.1	0.0	0.0	0.1	0.0
Dividend Yield	0.4	0.1	-0.2	-0.4	-0.2
Value	0.1	0.1	0.1	-0.1	-0.2
Growth	0.0	0.0	0.1	0.0	0.0
Medium-Term Momentum	-0.3	0.0	0.0	0.1	0.1
Profitability	0.0	0.0	0.1	-0.2	-0.1
Leverage	-0.2	0.0	-0.1	0.1	0.0
Panel B: Style Flavour	**STYLE FLAVOUR EXPOSURES**				
Value	7%	5%	0%	-5%	-6%
Deep Value	-1%	3%	0%	-2%	-5%
High Risk Value	2%	0%	3%	-2%	-2%
Value Traps	5%	-2%	3%	-2%	-4%
Sentiment Value	-9%	7%	1%	2%	1%
Low Risk Value	-3%	4%	-2%	-5%	-5%
High Yield	3%	3%	3%	-6%	-7%
Low Risk Yield	3%	3%	0%	-7%	-6%
Short Term Growth	-6%	-3%	9%	9%	2%
GARP	-2%	0%	7%	6%	-1%
Expensive Growth	-5%	-3%	2%	8%	3%
Sentiment Growth	-16%	-2%	4%	1%	6%
High Risk Growth	0%	-4%	4%	3%	0%
Growth Traps	-1%	-2%	2%	5%	0%
Secular Growth	-14%	-2%	7%	0%	2%
Quality	-11%	-3%	5%	1%	0%
Cheap Quality	-6%	-2%	4%	-1%	-3%
Expensive Quality	-9%	-3%	1%	2%	3%
NPAT lossmakers	-3%	-3%	0%	11%	0%
NPAT & CFO Lossmakers	-1%	-3%	-2%	2%	0%
Winner Lossmakers	-9%	0%	-2%	0%	1%
Loser Lossmakers	1%	-2%	1%	4%	0%

Source: Macquarie Quantitative Research, August 2023

The Style Counsel Tool, on the other hand, is far more specific and transparent than standard risk models, which means investors can better manage their exposures over the cycle or to a desired outcome. Here investors can more overtly examine the (historical) risk-return trade-offs of the Style Flavours they are exposed to in various regimes, with clear attribution from portfolio level exposures back to the stock level.

We note, of course, that Style Flavours can also have quite different risk characteristics, so in managing your style flavour exposures you may also be managing risk (but to be clear the tool doesn't forecast Tracking Errors or show stock-level Marginal Contributions to Risk).

Applies to

1) Fundamental & quantitative equity fund managers

2) Risk Managers

3) Business Development Managers

4) Asset Allocators (for aggregate equity portfolio)

5) Fund of Fund managers (both aggregate equity portfolio and manager specific analysis)

WORKFLOW 1: UNCOVER & MANAGE YOUR STYLE FLAVOUR EXPOSURES

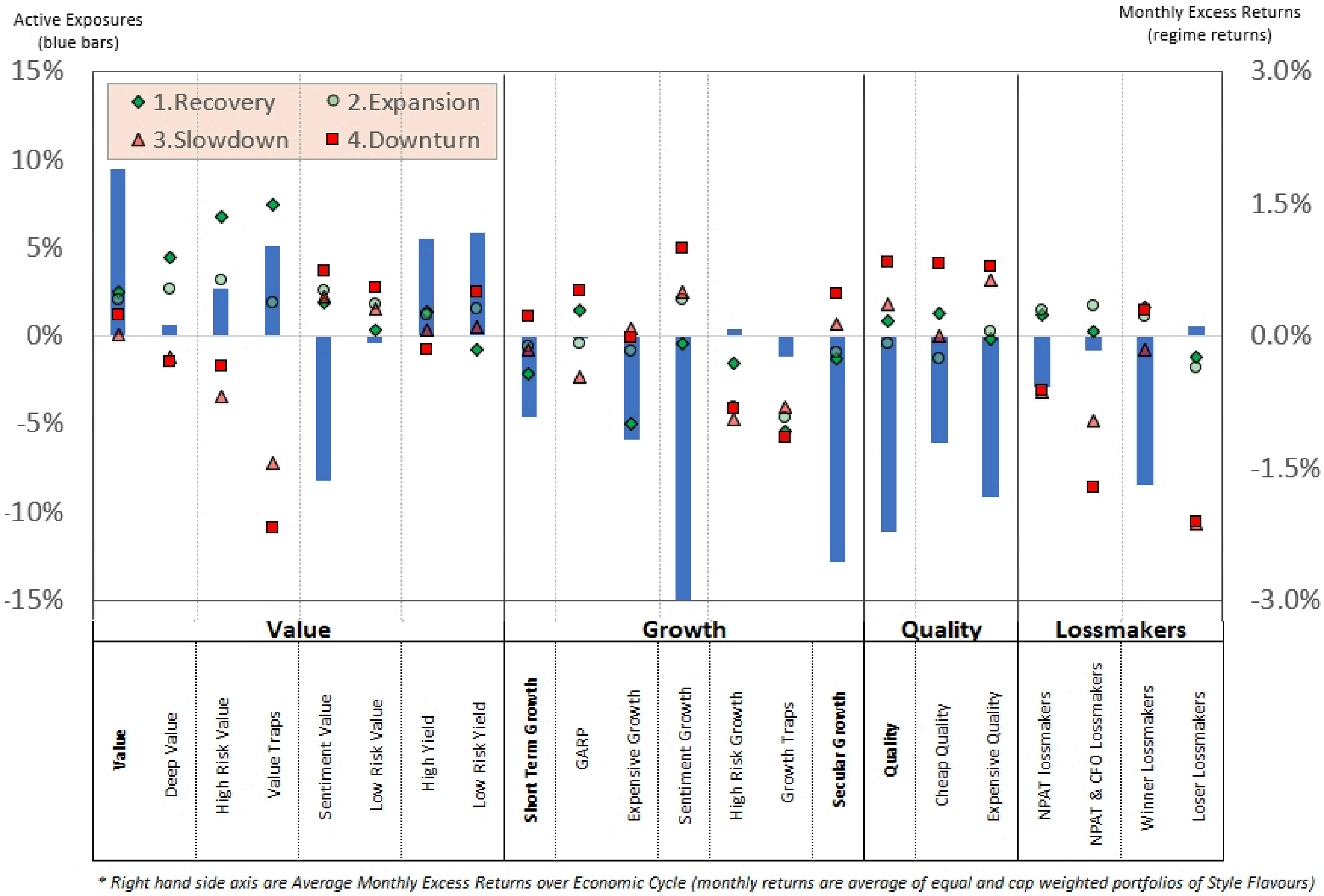
Workflow Summary*

1) Does your overall Flavour Exposures of your portfolio make sense to you?
Do the Style Flavour exposures tell the narrative of your portfolio / align with your expectations (a misalignment might mean a flavour exposure too positive, too negative or too market-like). If so, drill down & identify the stocks driving the misaligned flavours for remediation.

2) Are you comfortable with how your portfolio's Style Flavours performed in different regimes?
2.1) First identify your portfolio's significant style flavour exposures: check the key style flavours such High-Risk Value, Sentiment Value, High-Risk Growth, Sentiment Growth, Quality, Winner Lossmakers, Loser Lossmakers as well as other relevant flavours (eg High Yield for income funds).
2.2) Toggle between regimes to juxtapose the regime returns against the flavours from Step 2.1: Examine in what regimes the style flavours you are exposed to out/underperformed (the drop down toggles the regime returns in the chart, or use the heatmap below to examine all regimes). Identify flavour exposures you are uncomfortable with in light of the flavours' regime returns.
2.3) If you are uncomfortable with a flavour exposure, drill down to stocks driving this and remediate: use the "Key Stock Contributors" button to identify positions you may wish to lighten or give greater weight to (Table A or B).
** Beside applying these workflows to your total portfolio, investors can also apply these workflows to their trade portfolio*

- The tool's first critical workflow starts with the Style 2.0 chart, which measures the Style Flavour exposures for your portfolio (or aggregate equity portfolios for Asset Allocators or Fund-of-Fund managers).
- We exhibit this chart below for an Australian value fund.

Figure 7 - Style Flavours of this value fund: Value Traps and High Yield



Source: Macquarie Quantitative Research, August 2023

Description of Core Features of the Style 2.0 Report

Blue Bars = Style Flavour Exposures (LHS axis)

- The blue bars are the style flavour exposures. The high-level vanilla style flavours (in bold), indicate it's indeed a Value fund with negative exposure to Short Term Growth and Quality.
- Delving into the Style Flavours (non bolded) indicates positive active exposure to Value Traps and High Yield flavours. On the other hand the fund has got a strong anti-Sentiment Value exposure, and a strong anti-Sentiment Growth exposure too.
- Note: a Style Flavour exposure more than 5% in magnitude is becoming significant.

Green and Red Markers = Regime Returns (RHS axis)

- The green and red coloured markers on the chart above are the average performance of the various style flavours in different regimes. In this case we have selected the economic cycle as the regime type, with the S&P/ASX 300 universe as the investment universe.
- Its worth contrasting Sentiment Value with its consistent historical performance over the cycle, with High Risk Value and Value Traps which are clearly pro cyclical (i.e., they historically out/underperformed when the economy was strong/weak).
- Examples of more defensive flavours, that tend to perform best in downturns, are Sentiment Growth and Cheaper Quality. High Risk Growth and Loser Lossmakers, on the other hand, should be almost always be avoided (referred to as headwind flavours).

Juxtapose your Style Flavour Exposures with 9 different Regime Types

Market Regimes

1) Value/Growth

2) Up/Down

3) Momentum / Not

Risk Regimes

1) VIX Level

2) VIX Change

Economic Regimes:

1) 10Yr Int Rate Change

2) Inflation - Level

3) US Infl Exp Change

4) Economic Cycle (OECD LI)

Toggle between 9 different Regimes to understand how Style Flavours performed

Select Regime Type	Eco Cycle

- Style Flavours (as well as generic quant factors) don't necessarily perform the same over the cycle or in different risk or market conditions. Toggle the Regime Type drop down box (above) to better understand how Style Flavours perform in different environments.
- One obvious use case is if you have positive/negative exposure to a Style Flavour that under/outperforms in an environment you are expecting/forecasting. If so, you may wish to re-examine the stocks driving your exposure to this Style Flavour (see next page).
- Conversely, you may identify a style flavour you want more exposure to (also next page).

Conditional / Regime Returns of Style Flavours (as well as risk and turnover)

Figure 8 - Heatmap of Regime Returns, Risk and Opportunity Sets

	Style Flavour peformance by regime for Australia (S&P/ASX 300): Monthly Excess Returns*																					
MSCI: Value > Growth	1.0%	0.9%	0.7%	-0.1%	1.2%	1.1%	1.0%	1.1%	-0.7%	-0.1%	-1.2%	0.1%	-0.7%	-1.5%	-0.4%	-0.3%	-0.2%	-0.4%	-0.8%	-2.0%	-0.1%	-2.2%
MSCI: Growth > Value	-0.4%	-0.6%	-0.5%	-1.1%	-0.2%	-0.4%	-0.9%	-0.7%	0.5%	0.2%	0.8%	0.9%	-0.8%	-0.5%	0.5%	1.0%	0.6%	1.2%	0.5%	0.9%	0.4%	-0.2%
Up (Market>0)	0.3%	0.4%	0.7%	0.5%	0.4%	0.1%	0.0%	-0.2%	0.1%	0.2%	0.0%	0.3%	-0.1%	-0.4%	0.1%	0.3%	0.1%	0.4%	0.1%	0.3%	0.1%	-0.2%
Down (Market<0)	0.2%	-0.2%	-0.8%	-2.4%	0.8%	0.8%	0.2%	1.0%	-0.4%	-0.2%	-0.6%	0.8%	-1.9%	-2.1%	0.0%	0.3%	0.3%	0.3%	-0.8%	-2.1%	0.3%	-3.1%
Momentum Outp	-0.1%	-0.4%	-0.6%	-1.7%	0.6%	0.2%	-0.2%	0.0%	0.2%	0.0%	0.4%	1.5%	-1.6%	-1.7%	0.4%	0.9%	0.4%	1.3%	-0.3%	-0.5%	0.4%	-1.8%
Momentum Underp	0.7%	0.8%	1.0%	0.8%	0.4%	0.6%	0.5%	0.4%	-0.5%	0.1%	-1.0%	-0.7%	0.3%	-0.1%	-0.3%	-0.4%	-0.2%	-0.7%	0.0%	-0.7%	-0.1%	-0.6%
Low VIX	-0.1%	-0.4%	-0.4%	-1.1%	0.1%	0.0%	-0.2%	0.1%	0.3%	-0.1%	0.6%	0.6%	-0.7%	-0.5%	0.4%	0.6%	-0.2%	1.4%	0.0%	-0.9%	0.2%	-0.8%
Medium VIX	0.2%	0.1%	-0.1%	-0.7%	0.5%	0.4%	0.4%	0.4%	-0.1%	0.0%	-0.3%	0.3%	-0.6%	-0.7%	0.0%	0.3%	0.2%	0.2%	-0.3%	-0.7%	0.3%	-1.2%
High VIX	0.1%	0.0%	0.4%	-0.8%	-0.1%	-0.1%	-0.5%	-0.3%	-0.4%	-0.6%	-0.1%	-0.3%	-0.6%	-1.1%	0.1%	-0.2%	-0.5%	0.1%	0.2%	-0.1%	0.0%	0.3%
Falling VIX	0.1%	-0.2%	1.1%	1.2%	-0.2%	-0.5%	-0.4%	-0.7%	0.0%	0.3%	-0.1%	-0.6%	0.8%	1.1%	-0.2%	-0.3%	-0.4%	-0.4%	1.3%	2.0%	0.1%	3.5%
Stable VIX	0.1%	0.1%	-0.3%	-1.2%	0.5%	0.3%	0.2%	0.2%	0.0%	-0.3%	0.3%	0.4%	-0.7%	-0.8%	0.4%	0.6%	0.1%	1.0%	-0.5%	-0.9%	0.1%	-1.8%
Rising VIX	0.0%	-0.3%	-0.8%	-1.7%	0.2%	0.5%	0.2%	1.0%	-0.4%	-0.4%	-0.6%	0.6%	-1.5%	-2.0%	0.0%	0.1%	-0.2%	0.3%	-0.6%	-2.3%	0.4%	-2.5%
10Y Rate: QoQ Fall	0.3%	0.0%	-0.5%	-1.7%	0.9%	0.7%	0.2%	0.7%	-0.3%	-0.1%	-0.3%	0.9%	-1.5%	-1.6%	-0.1%	0.5%	0.3%	0.7%	-0.9%	-2.2%	0.1%	-2.6%
10Y Rate: QoQ Stable	0.1%	-0.2%	-0.1%	-0.6%	0.3%	0.2%	-0.1%	0.1%	0.0%	-0.1%	0.0%	0.5%	-0.5%	-0.7%	0.3%	0.4%	0.2%	0.5%	0.2%	0.1%	0.1%	-0.3%
10Y Rate: QoQ Rising	0.5%	0.9%	1.3%	0.8%	0.4%	0.2%	0.3%	-0.1%	-0.1%	0.4%	-0.5%	0.0%	-0.3%	-0.7%	-0.2%	0.0%	0.1%	-0.2%	0.0%	0.1%	0.4%	-1.4%
Low Inflation/CPI	0.5%	0.4%	0.6%	0.6%	0.5%	0.3%	0.2%	0.2%	-0.5%	-0.2%	-0.7%	0.0%	-0.3%	-0.8%	-0.1%	-0.2%	-0.6%	0.2%	-0.1%	0.2%	0.0%	-0.5%
Med Inflation/CPI	0.1%	0.1%	0.0%	-0.8%	0.4%	0.1%	-0.1%	-0.1%	0.1%	-0.1%	0.4%	0.8%	-0.8%	-0.8%	0.3%	0.6%	0.3%	0.7%	0.0%	-0.3%	0.1%	-0.9%
High Inflation/CPI	0.4%	0.1%	0.0%	-1.3%	0.8%	0.7%	0.2%	0.7%	0.0%	0.5%	-0.5%	0.6%	-1.0%	-1.4%	-0.1%	0.4%	0.8%	0.1%	-0.5%	-1.7%	0.3%	-2.6%
Falling US Infl Exp	-0.2%	0.1%	0.6%	0.1%	-0.3%	-0.6%	-0.6%	-0.6%	-0.4%	-0.8%	0.2%	-0.3%	0.3%	0.2%	0.2%	-0.3%	-0.7%	0.0%	0.3%	0.4%	0.1%	0.8%
Stable US Infl Exp	0.1%	-0.3%	-0.3%	-1.4%	0.4%	0.3%	-0.1%	0.1%	0.1%	0.0%	0.2%	0.6%	-0.8%	-0.8%	0.3%	0.5%	0.2%	0.7%	-0.1%	-0.5%	0.1%	-1.2%
Rising US Infl Exp	0.3%	0.6%	0.7%	0.4%	0.3%	0.2%	0.3%	0.1%	0.1%	0.5%	-0.3%	0.0%	-0.2%	-0.4%	0.0%	0.2%	0.3%	0.2%	0.1%	-0.6%	0.1%	-0.4%
1.Recovery	0.5%	0.9%	1.4%	1.5%	0.4%	0.1%	0.3%	-0.2%	-0.4%	0.3%	-1.0%	-0.1%	-0.3%	-1.1%	-0.3%	0.2%	0.3%	0.0%	0.2%	0.1%	0.3%	-0.2%
2.Expansion	0.4%	0.5%	0.6%	0.4%	0.5%	0.4%	0.2%	0.3%	-0.1%	-0.1%	-0.2%	0.4%	-0.8%	-0.9%	-0.2%	-0.1%	-0.3%	0.1%	0.3%	0.4%	0.2%	-0.4%
3.Slowdown	0.0%	-0.2%	-0.7%	-1.4%	0.5%	0.3%	0.1%	0.1%	-0.1%	-0.5%	0.1%	0.5%	-0.9%	-0.8%	0.1%	0.4%	0.0%	0.6%	-0.6%	-0.9%	-0.1%	-2.1%
4.Downturn	0.2%	-0.3%	-0.3%	-2.2%	0.7%	0.6%	-0.2%	0.5%	0.2%	0.5%	0.0%	1.0%	-0.8%	-1.1%	0.5%	0.8%	0.8%	0.8%	-0.6%	-1.7%	0.3%	-2.1%

Historical monthly returns are average of equal and cap weighted local dollar total returns in excess of benchmark since Jan 1995 (contingent on the availability of regime data).

1995-2022	**0.3%**	**0.2%**	**0.2%**	**-0.6%**	**0.5%**	**0.3%**	**0.1%**	**0.2%**	**-0.1%**	**0.0%**	**-0.2%**	**0.5%**	**-0.7%**	**-1.0%**	**0.1%**	**0.3%**	**0.2%**	**0.4%**	**-0.2%**	**-0.6%**	**0.2%**	**-1.3%**
Monthly Hit Rate	57%	55%	50%	45%	63%	56%	53%	54%	49%	48%	48%	62%	42%	43%	53%	56%	54%	55%	46%	48%	53%	40%
Tracking Error %pa**	6%	10%	14%	20%	7%	6%	7%	7%	6%	8%	10%	9%	14%	16%	6%	8%	8%	11%	11%	21%	8%	23%

*** reversed so red is high, green is low*

	% of Universe (Combined weighted (Avg of Eq & Cap weighted))																					
Avg Opportunity Set	35%	15%	9%	4%	19%	25%	19%	23%	22%	11%	10%	12%	6%	3%	20%	16%	8%	8%	14%	5%	9%	6%
Avg 1-way Turnover	13%	19%	23%	33%	28%	16%	14%	15%	16%	24%	21%	29%	33%	40%	15%	19%	29%	22%	10%	10%	19%	22%

Source: Macquarie Quantitative Research, August 2023

Types of Flavours:

Style Flavours can be classed as Headwind flavours (avoid), Tailwind flavours (all-weather), and Conditional flavours

- Directly underneath the Style 2.0 Chart we exhibit a heatmap of the average excess returns of the Style Flavours in different regimes (median returns are also available, see the Control sheet). These regime returns are what feeds into the red and green markers on the Style 2.0 Chart. At the bottom of this heatmap are also their risk, opportunity set and turnovers.
- From this heatmap it is evident that there are Style Flavours that are mainly headwind flavours (underperform in most regimes), such as Loser Lossmakers or High-Risk Growth. If you are long names in these flavours for example, you may wish to re-examine you positions in them (we show how to identify these stocks below).
- Most other flavours are conditional or are tailwind flavours for a specific Regime Type (e.g., Sentiment Value is a tailwind flavour in the Economic Cycle Regime for Australia).

Identify the stocks driving your portfolio's style flavour exposures

Go to Key Stock Contributors to portfolio Style Flavour Exposures

- This button takes you to a report that shows the top positive and top negative contributors to your portfolio's Style Flavour Exposures (Table A and Table B, respectively).
- Click on the Drop Down to toggle between different Style Flavours.
- If these tables identify positions you are not as sure about you may wish to reconsider them (upweight / downweight or exit entirely)[1].

Figure 9 - Top Positive Contributors (Table A below) to Portfolio Flavour Exposures

Short Term Growth

Table A: Top Positive Contributors to Portfolio's Style Flavour Exposure (stocks can be inside or outside the screen)

Rank	Bbg Ticker	Sedol	Name	Sector	Industry	Mkt Cap AU$mm	EPS Growth NTM	% Rank	NPAT Loss	Portfolio Weight	Benchmark Weight	A = Active Weight	B = Style Flavour Exposure	Contribution to Prtf Exposure (= A x B)	% Contribution to Prtf Exposure
1	OML AU	BSXN8D	Ooh!Media Ltd.	Communication Services	Media	1,005	27.6%	79%	0	5.25%	0.05%	5.20%	94%	4.90%	790%
2	BGA AU	B56CQJ	Bega Cheese Ltd.	Consumer Staples	Food Products	1,262	20.2%	74%	0	3.05%	0.06%	2.99%	87%	2.60%	419%
3	SUN AU	658508	Suncorp Group Ltd.	Financials	Insurance	17,263	12.5%	61%	0	4.46%	0.83%	3.63%	36%	1.31%	211%
4	ANZ AU	606558	Anz Group Holdings Ltd.	Financials	Commercial Banks	77,567	9.4%	51%	0	8.10%	3.73%	4.37%	22%	0.96%	155%
5	QUB AU	B1L4BC	Qube Holdings Ltd.	Industrials	Transportation Infrastru	3,896	15.5%	67%	0	1.62%	0.19%	1.43%	66%	0.94%	152%
6	NCK AU	B00VZV	Nick Scali Limited	Consumer Discretionary	Specialty Retail	313	7.1%	44%	0	4.03%	0.02%	4.02%	15%	0.61%	98%
7	DOW AU	646557	Downer Edi Limited	Industrials	Commercial Services & S	3,816	8.3%	48%	0	3.33%	0.18%	3.15%	19%	0.59%	95%
8	NAB AU	662460	National Aus.Bank Ltd.	Financials	Commercial Banks	67,247	13.6%	63%	0	4.30%	3.23%	1.07%	51%	0.55%	89%
9	LNK AU	BYZBCY	Link Adm.Hdg.Ltd.	Information Technology	It Services	3,676	6.9%	44%	0	2.98%	0.18%	2.80%	15%	0.41%	66%
10	ORA AU	BH4TCW	Orora Ltd.	Materials	Containers & Packaging	3,946	5.3%	39%	0	2.79%	0.19%	2.60%	11%	0.28%	45%
11	RHC AU	604199	Ramsay Health Care Ltd.	Health Care	Health Care Providers &	7,012	4.4%	34%	0	3.41%	0.34%	3.08%	8%	0.25%	41%
12	SGM AU	B0LCW7	Sims Ltd.	Materials	Metals & Mining	1,711	7.6%	46%	0	1.48%	0.08%	1.39%	17%	0.24%	38%
13	JBH AU	670262	Jb Hi-Fi Limited	Consumer Discretionary	Specialty Retail	2,594	2.2%	26%	0	3.36%	0.12%	3.24%	5%	0.17%	27%
14	IAG AU	627102	Insurance Aus.Group Ltd.	Financials	Insurance	16,822	2.1%	24%	0	4.42%	0.81%	3.62%	5%	0.17%	27%
15	GWA AU	639294	Gwa Group Ltd.	Industrials	Building Products	705	0.0%	18%	0	4.74%	0.03%	4.71%	3%	0.15%	24%
													Portfolio Exposure (stocks in Table A)	14.68%	2367%
													Portfolio Exposure (all stocks)	0.62%	

Source: Macquarie Quantitative Research, August 2023

Repeat analysis for GICS L2

GICS Level 2 exposure and regime return analysis is also availiable

Repeat the same analysis using GICS Industry Groups (instead of Style Flavours)

Go to GICS L2 skyline

- Investor can repeat the same analysis at a GICS Level 2 (Industry Groups).
- This report shows
  - ⇒ the active exposures of the portfolio to GICS Level 2, as well as
  - ⇒ regime returns to different industry groups (along with risk, opportunity set & turnover).
- However we note that there is no Stock Level report provided for GICS L2.

1. We note that just like any fundamental or quantitative investment process, style flavours also exhibit estimation error, so you may disagree with some of our Style Flavour categorisations for particular stocks, but overall the portfolio level exposures will capture your general style flavour exposures.

Applies to

1) Fundamental & quantitative equity fund managers
2) Risk Managers
3) Business Development Managers
4) Asset Allocators (for aggregate equity portfolio)
5) Fund of fund managers (both aggregate equity portfolio and manager specific analysis)

WORKFLOW 2: UNCOVER AND MANAGE YOUR ECONOMIC EXPOSURES

Workflow Summary

1) What economic bets is your portfolio making, and does this make sense to you?
Its difficult to position any portfolio without making taking an economic exposure of some form or another, as different stocks (and style flavours) can perform quite differently in market, risk and economic regimes. The Style Counsel Tool allows investors to measure their economic bets (including how significant they are), from which you can decide whether you are comfortable or not

2) Use the Regime Scenarios tool to help ameliorate economic positions you are uncomfortable
Investors can use the Regime Scenarios tool to explore potential positions more aligned to the economic scenarios they are expecting. This tool mainly uses the lens of Style Flavours to make these recommendations (stock level macro betas are also used but at a more moderate weight as alone they can yield more perverse recommendations).

Bottom-up stock-pickers may not be fully aware of the top-down bets they are making. The tool's second key workflow addresses this by first measuring the economic bets that every portfolio takes (or equally the aggregate equity portfolios for Asset Allocators or Fund-of-Fund managers). We then provide another tool to help remediate it.

Measuring your portfolio's economic bets (directly and implied using Style Flavours)

We combine three methods to measure a portfolio's economic exposures:

- *Directly using stock macro betas:* we regress 10 years of monthly excess returns against each of the nine regime / macro variables[2]. These are then cap weighted to aggregate back to the portfolio level, and then funnelled into the portfolio's economic bets (makes up just over half of the weight).
- *Indirectly using Style Flavour exposures:* a key trait of Style Flavours is they often exhibit different risk/return trade-offs over the economic cycle from each other, and in different risk, rates & inflation environments (discussed throughout this style series, for example here). We use this Style Flavour lens to measure a portfolio's implied economic bets[3]. This has a moderate weight in the portfolio economic bets calculation.
- *Indirectly using GICS L2 exposures:* similarly we can use a GICS Level 2 lens to measure a portfolio's implied economic bets (this has a small weight in the portfolio economic bets).

Measure your economic exposures

An example of the output is shown in below (accessed from the Style 2.0 Report).

Figure 10 - Know how your portfolio is positioned for different regimes

		PORTFOLIO'S REGIME FORECASTS (AND CONVICTION)*	
Regime Type	**Regime State**	**Portfolio positioned for**	**Portfolio positioned against (Contrarian)**
Market	Value/Growth	Growth (weak)	Value (mild)
Market	Up/Down		Down Market (weak)
Market	Momentum / Not		Non Mom Market (weak)
Risk	VIX Level	Low VIX (weak)	Medium VIX (mild)
Risk	VIX Change		
Economic	10Yr Change		Falling 10Yr (weak)
Economic	Inflation Level		High Inflation (weak)
Economic	US Infl Exp Change	Falling US Infl Exp (weak)	Rising US Infl Exp (weak)
Economic	Economic Cycle		Recovery (weak)

* We measure this by combining both portfolio level Macro Betas (aggregated from stock level), as well as Implied Regime Forecasts from Style Flavours or GICS L2. On the implied forecasts we measure the alignment of a Regime States' returns (the dots) to a portfolio's Style Flavours (or GICS L2) exposures as per blue bars. The strength of the overall alignment (or conviction) can be "weak", "mild" or "strong". An example: "Growth: weak" means a portfolio is weakly aligned to a growth environment, implying it may weakly perform better when growth outperforms.

Source: Macquarie Quantitative Research, August 2023

How do I interpret the implied regime forecast table?

As some alignments in Fig 10 are not symmetric, we've chosen to show both the economic regimes that the portfolio is positioned for (the greenly shaded column), and the regimes the portfolio has taken a contrarian position for (the red shaded column, which is a bet against).

2. Some of the regime choices here are deliberate, as they help capture the unexpected surprise/change in growth expectations that drives markets (eg movement in OECDI LI, as well as the change in the yield curve). Over time we expect to include other relevant regimes in this list.

3. Specifically we measure the alignment between a portfolio's Style Flavour exposures (the blue bars in the Style 2.0 chart) and the Style Flavours return pattern in different regimes. We do this for 6 core style flavours, namely High Risk Value, Sentiment Value, High Risk Growth, Sentiment Growth, Winner Lossmakers, and Loser Lossmakers (as these six tend to adequately capture the spectrum of core flavours without doubling up).

We also exhibit three levels of conviction: weak (faint green or red); moderate; and strong (dark green or red). Whilst you often find an opposing Contrarian position (red column) for an economic regime that the portfolio is positioned for (green column), this is not always the case (due to return asymmetry).

What is the current regime, and where can I find a history of the Regimes?

To the right of the Portfolio's Regime Forecasts is a table exhibiting the last 12 months of regimes (not shown here). A longer history can be accessed from the button "Economic Regimes" to the bottom left of the Style 2.0 Chart.

Introducing the Regime Scenario Tool (to help manage unintended Economic Bets)

For investors uncomfortable with their identified economic bets, we have built the Regime Scenario Tool. This does a kind of What-If analysis where investors input their economic forecasts (scenarios) with the output being a list of recommended companies most aligned to your scenario (discussed further below). This tool can also be used for idea generation (Workflow 3 below); and for investors more deliberate with their macro positioning.

Figure 11 - Regime Scenario Input: tailor recommendations to the scenarios you care most about

Regime Scenarios: Enter Your Regime Scenarios in Columns E and G

Works out most and least attractive stocks based on optimal style flavour weights (as well as GICS L2 and stock level macro betas)

	A: Regime Importance (adds to 100%)	B: Regime Probability		C = A x B (Regime Weights adds to 100%)	
MSCI: Value > Growth	0.0%	0.0%	Value /	0.0%	<--- Do not alter
MSCI: Growth > Value		0.0%	Growth	0.0%	<--- Do not alter
		0.0%			
Up (Market>0)	0.0%	0.0%	Market Direction	0.0%	<--- Do not alter
Down (Market<0)		0.0%		0.0%	<--- Do not alter
		0.0%			
Momentum Outp	0.0%	0.0%	Momentum	0.0%	<--- Do not alter
Momentum Underp		0.0%		0.0%	<--- Do not alter
		0.0%			
Low VIX	0.0%	0.0%	Risk	0.0%	<--- Do not alter
Medium VIX		0.0%	Environment	0.0%	<--- Do not alter
High VIX		0.0%	(level)	0.0%	<--- Do not alter
		0.0%			
Falling VIX	0.0%	0.0%	Risk	0.0%	<--- Do not alter
Stable VIX		0.0%	Environment	0.0%	<--- Do not alter
Rising VIX		0.0%	(changes)	0.0%	<--- Do not alter
		0.0%			
10Y Rate: QoQ Fall	0.0%	0.0%	QoQ Changes	0.0%	<--- Do not alter
10Y Rate: QoQ Stable		0.0%	in 10Y Rates	0.0%	<--- Do not alter
10Y Rate: QoQ Rising		0.0%		0.0%	<--- Do not alter
		0.0%			
Low Inflation/CPI	0.0%	0.0%	Inflation	0.0%	<--- Do not alter
Med Inflation/CPI		0.0%	Levels	0.0%	<--- Do not alter
High Inflation/CPI		0.0%		0.0%	<--- Do not alter
		0.0%			
Falling US Infl Exp	30.0%	0.0%	Changes in	0.0%	<--- Do not alter
Stable US Infl Exp		0.0%	US Inflation	0.0%	<--- Do not alter
Rising US Infl Exp		0.0%	Expectations	0.0%	<--- Do not alter
		0.0%	Error, probabilities do not add to 100%		
1.Recovery	70.0%	0.0%	Economic	0.0%	<--- Do not alter
2.Expansion		0.0%	Cycle	0.0%	<--- Do not alter
3.Slowdown		0.0%		0.0%	<--- Do not alter
4.Downturn		100.0%		70.0%	<--- Do not alter
		100.0%			
Total (adds to 100%)	100.0%			70.0%	
Risk Awareness (0 = None, 1 = Yes, using Sharpe Ratio)	100.0%	*usually pick 50% or 100%*	**Manage Weights of Regime Expectations Components**		
			Style Flavours	70%	*Default = 60% (recommended no less than 50%)*
			GICS L2	0%	*Default = 10% (recommended no more than 20%*
Shrinkage Ratio for Style Flavour Covariance Matrix	50.0%	*default is 50%*	Stock Macro Betas	30%	*Default = 30% (recommended no more than 30%*
			Total (adds to 100%)	100.0%	

Source: Macquarie Quantitative Research, August 2023

How to operate:

Select the Regime Types you wish to get recommendations on (e.g., Inflation or Economic Cycle), as well as the regimes within these Regime Types (e.g., high inflation or slowdown / downturn)

The two key inputs for this tool: Regime Importance and Regime Probability

- "A: Regime Importance (adds to 100%)"
  - ⇒ This is about selecting the Regime Types you want to target or remediate.
  - ⇒ Say you are worried about the economic cycle, and somewhat less about inflation. You may put 70% in the Economic Cycle box, and 30% in the US Inflation Expectations box.
  - ⇒ Note that the entire column needs to add to 100% otherwise it will error.
- "B: Regime Probability"
  - ⇒ Having selected the Regime Types, you now need to provide your expectations.
  - ⇒ These also need to add up to 100% (as this is not the case above an error appears)

Other inputs (yellow boxes)

1. Risk Awareness: we suggest using 100% or 50% (0% means its risk unaware)
2. Shrinkage Ratio: we suggest 50% (shrinks the Style Flavour covariance matrix to reduce estimation error)
3. Manage Weights of Regime Expectation Components: We suggest 70% to Style Flavours, 10% to GICS, and 30% to Stock Macro Betas (described in the next paragraph)

Recommendation engine:

To avoid more extreme recommendations we give stock level macro betas only a moderate weight. Instead, the macro recommendations are calculated through the lens of Style Flavours

Here we generate a multi-flavour model where the weights are optimised to give the highest Sharpe Ratio (the tangency portfolio)

How we calculate the recommended stocks

We use a combination of three methods to generate recommendations, namely using:

1. Style Flavours Regime Returns and Risk (at a major weight) - an indirect method
2. GICS Level 2 Risk and Regime Returns (at a minor weight) - an indirect method
3. Stock Macro Betas (at a moderate weight) - a direct method

1 and 2 are indirect recommendation methods, where the regime excess returns and risks (tracking errors) of Style Flavours (or GICS Level 2) are the inputs to derive the optimal combination of Flavours (or GICS industry groups). Here matrix algebra calculates the tangency portfolio for the optimal portfolio of style flavours (or GICS industry groups), resulting in the projected highest Sharpe ratio (the best risk-adjusted return) for your chosen regime scenario. As Style Flavours are more aligned to investment styles of professional investors its recommendations to get the largest weight.

Regarding the stock macro betas, these are the same used to calculate your portfolios economic bets (i.e., the coefficient from a 10 year, monthly univariate regression of the 9 Regime Types to the excess return of each stock). By themselves macro betas can lead to more extreme and perverse recommendations (both from a risk-return perspective as well as potential misaligned to professional investment styles). But in moderation they can help better align the recommendation (no more than 30% weight).

Output (Recommendations)

Clicking on the button shown below takes you to the output (the recommended stocks):

Fig 12 below exhibits this output (the recommended stocks). This output shows

1. Style Flavours Regime Returns, Risk and optimal weight to give highest Sharpe Ratio (the three rows at the top)
2. A list of stocks ordered from most (to less) attractive, with the following columns:

- ⇒ exposures to each of the archetypical Style Flavours
- ⇒ benchmark weight, and
- ⇒ score in your Regime Scenario (combination of the three methods outlined above)
- ⇒ stock level Macro Betas are also provided (hidden in columns between the Style Flavours and the Benchmark Weights)

Figure 12 - Output of Regime Scenario Tool

Table: Stocks Most Aligned to your Regime Scenario

						Core Flavour Exposures							
Expected Return of Style Flavours in your Regime Scenario --->						0.5%	-0.2%	0.7%	-0.6%	0.2%	-1.5%		
Volatility of of Style Flavours --->						1.9%	3.9%	2.7%	4.0%	2.3%	6.6%		
Style Flavour Weights that Optimises your Regime Scenario --->						57%	0%	35%	-5%	22%	-8%		
Ran	**Bbg Tick**	**Name**	**Sector**	**Industry**	**Mkt Cap AU$mm**	**Sentiment Value**	**High Risk Value**	**Sentiment Growth**	**High Risk Growth**	**Winner ossmakers**	**Loser ossmakers**	**Benchmark Weight**	**Regime Scenario Exposure (pct ranked)**
1	NHC AU	New Hope Corp.Ltd.	Energy	Oil, Gas & Consumable Fu	2,843	98%	97%	26%	1%	43%	1%	0.11%	100%
2	PLS AU	Pilbara Minerals Limited	Materials	Metals & Mining	13,173	98%	74%	33%	1%	43%	1%	0.50%	100%
3	AX1 AU	Accent Group Ltd.	Consumer Discretionary	Specialty Retail	655	98%	97%	27%	1%	43%	1%	0.02%	99%
4	WHC AU	Whitehaven Coal Limited	Energy	Oil, Gas & Consumable Fu	5,930	98%	91%	16%	1%	43%	1%	0.22%	99%
5	PME AU	Pro Medicus Limited	Health Care	Health Care Technology	3,476	41%	1%	98%	1%	38%	1%	0.13%	99%
6	TNE AU	Technology One Limited	Information Technology	Software	4,508	38%	1%	98%	1%	37%	1%	0.17%	98%
7	ALU AU	Altium Limited	Information Technology	Software	4,572	39%	1%	98%	1%	33%	1%	0.17%	98%
8	VEA AU	Viva Energy Group Ltd.	Energy	Oil, Gas & Consumable Fu	2,080	92%	53%	6%	3%	29%	2%	0.08%	98%
9	WPR AU	Waypoint Reit Ltd.	Real Estate	Retail Reits	1,874	94%	9%	28%	1%	43%	1%	0.07%	97%
10	NST AU	Northern Star Res.Ltd.	Materials	Metals & Mining	14,999	48%	13%	98%	11%	29%	2%	0.56%	97%
11	CRN AU	Coronado Glb.Res.Inco.	Materials	Metals & Mining	1,274	86%	97%	2%	11%	14%	4%	0.05%	97%
12	QBE AU	Qbe Insurance Group Ltd.	Financials	Insurance	23,575	89%	5%	95%	4%	43%	1%	0.89%	96%
13	BXB AU	Brambles Ltd.	Industrials	Commercial Services & S	19,541	40%	2%	96%	1%	43%	1%	0.74%	96%
14	BKL AU	Blackmores Limited	Consumer Staples	Personal Care Products	1,483	32%	3%	78%	3%	19%	3%	0.06%	96%
15	PWH AU	Pwr Holdings Ltd.	Consumer Discretionary	Automobile Components	699	39%	5%	81%	3%	16%	4%	0.03%	95%

Source: Macquarie Quantitative Research, August 2023

How to best use this Regime Scenario tool

The tool's purpose is to give investors recommendations that are aligned to the regime scenario that has been requested. Investors can then further screen these recommendations on whether they are aligned to their investment philosophy and process. We emphasise that like most models, it's not a silver bullet, and you may not agree with the recommendations (noting all investment has estimation error). We discuss this in more detail in Appendix 1 on Frequently Asked Questions (Q8)

Applies to

1) Fundamental & quantitative equity fund managers

2) Fund of fund managers (both aggregate equity portfolio and manager specific analysis)

WORKFLOW 3: IDEA GENERATION

Workflow Summary
1) Target Style Flavours aligned to your investment process (Top/Bottom Stocks by Style Flavour)
2) Target specific Regime Scenarios you expect to ensue (Regime Scenario Analysis)
3) Explore & filter the universe by multiple style flavour categories (Style Flavour Stock Screening)

The tool can help screen for new ideas in at least three ways:

1) Top / Bottom Stocks by Style Flavour:

This is about targetting the Style Flavours most aligned to your investment process.

- For value managers this might depend on your economic expectations, as High Risk Value and Value Traps are pro-cycle, whereas Sentiment Value is typically more stable over the cycle. This may also depend on the expected interest rate and inflationary environments.
- Similarly, an income manager might target Low Risk Yield names when the economy is weaker, and higher risk yield names when the economy is stronger.
- For a growth manager most growth flavours tend to negatively surprise. We would therefore recommend exploring the ***Sentiment Growth*** style flavour (shown in Fig 13).

Figure 13 - Find ideas within the Style Flavours screens most aligned to your investment philosophy

Sentiment Growth

Table A: Stocks most exposed to selected Style Flavour (need to be within Style Flavour screen)

Rank	Bbg Ticker	Name	Sector	Industry	Mkt Cap AU$mm	EPS Growth NTM	% Rank	NPAT Loss	Comp Low Risk	% Rank	Momentum	% Rank	Benchmark Weight	Style Flavour Exposure
1	HUB AU	Hub24 Limited	Financials	Capital Markets	778	97.4%	91%	0	0.0	71%	13.9%	72%	0.04%	98%
2	A2M AU	A2 Milk Company Limited	Consumer Staples	Food Products	7,125	32.4%	82%	0	1.3	95%	27.8%	85%	0.34%	98%
3	OFX AU	Ofx Group Limited	Financials	Financial Services	430	14.3%	66%	0	1.3	94%	63.8%	96%	0.02%	98%
4	SAR AT	Saracen Mineral Hdg.Ltd.	Materials	Metals & Mining	1,837	43.0%	85%	0	-0.5	58%	67.9%	97%	0.09%	98%
5	PNI AU	Pinnacle Inv.Man.Gp.Ltd.	Financials	Capital Markets	677	43.5%	86%	0	0.9	90%	46.4%	94%	0.03%	98%
6	NGI AU	Navr.Glb.Invs.Ltd.	Financials	Capital Markets	580	36.7%	84%	0	0.1	75%	44.7%	93%	0.03%	98%
7	NST AU	Northern Star Res.Ltd.	Materials	Metals & Mining	4,790	42.7%	85%	0	-0.7	55%	50.4%	95%	0.23%	98%
8	IFM AU	Infomedia Limited	Information Technology	Software	355	20.0%	73%	0	0.6	85%	45.3%	93%	0.02%	98%
9	SOL AU	Wash.H Soul Patsn.& Ctd.	Energy	Oil, Gas & Consumable Fu	3,066	12.0%	60%	0	0.7	86%	68.2%	97%	0.15%	98%
10	NWL AU	Netwealth Group Ltd.	Financials	Capital Markets	728	26.3%	78%	0	0.8	89%	29.6%	88%	0.03%	97%

Source: Macquarie Quantitative Research, August 2023

2) Regime Scenario Analysis:

The second method for idea generation uses the Regime Scenario tool that we introduced in the last section to help remediate unintended economic bets. In this case the tool can be used to generate ideas that are consistent with macro environments you expect (including by investors who are more deliberate with their macro positioning).

Here investors input the economic regimes they believe might ensue (scenarios) with the output being a list of companies that are most aligned to your scenario (see previous section for description of how to use). As previously commented, a naked positioning to the desired macro betas can result in unbalanced risk-reward, hence we prefer to use the lens of Style Flavours to take a more balanced recommendations (with only moderate weight to stock level macro betas).

A Caution

When filtering on a column, please leave the "Blanks" option in otherwise your column heading will shrink and become unreadable.

3) Style Flavour Stock Screening:

Most managers will be familiar with screening for stocks in Excel. This is no different. Here you start with all stocks in the universe and then filter in or filter out various flavour or flavour combinations.

The advantage of this approach is you can gradually experiment with the flavours you prefer or want to avoid (or a combination).

Figure 14 - Find ideas by screening stocks in and/or out on multiple style flavour memberships

Return to Control

Macquarie Quant: Style Counsel Tool

Managing portfolios using Style 2.0

MACQUARIE

Note: when filtering, include "Blanks" to avoid heading shrinking

Show All (Remove Filter)

Style Flavour/Screen Membership (see Sheet = "Report_StyleFlavourDe

										Value											ST Growth			
Sedol	Bbg Ticker	Company Name	Sector	Industry	Price (Local)	Mkt Cap AU$mm	Broker Coverage (EPS FY1)	Weight in Prtf	Active Weight in Prtf	Value	Deep Value	High Risk Value	Value Traps	Sentiment Value	Low Risk Value	High Yield	Low Risk Yield	Short Term Growth	GARP	Expensive Growth	Sentiment Growth	Cheap Sentiment Growth	Expensive Sentiment Growth	High Risk Growth
600688	ABC AU	Adbri Ltd.	Materials	Construction Material	5.18	2,088	12	0.0%	-0.1%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
606558	ANZ AU	Anz Group Holdings Ltd.	Financials	Commercial Banks	26.59	77,567	14	8.1%	4.4%	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0
606660	AMC AU	Amcor Plc.	Materials	Containers & Packagi	13.43	15,554	9	0.0%	-0.7%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
607614	WBC AU	Westpac Banking Corp.	Financials	Commercial Banks	25.97	89,202	14	-14.6%	-18.9%	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0
612345	CCL AT	Coca-Cola Amatil Ltd.	Consumer Staples	Beverages	8.64	4,379	13	0.0%	-0.2%	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
614469	BHP AU	Bhp Group Ltd.	Materials	Metals & Mining	30.69	98,490	19	0.0%	-4.7%	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0
621867	BLD AU	Boral Ltd.	Materials	Construction Material	5.10	5,979	9	0.0%	-0.3%	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0
622010	RIO AU	Rio Tinto Limited	Materials	Metals & Mining	73.28	27,203	17	0.0%	-1.3%	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
623864	CSR AU	Csr Limited	Materials	Construction Material	3.00	1,548	12	3.7%	3.6%	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0
628661	ANN AU	Ansell Ltd.	Health Care	Health Care Equipmer	22.81	3,270	12	0.0%	-0.2%	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
631559	BKW AU	Brickworks Limited	Materials	Construction Material	16.33	1,250	5	0.0%	-0.1%	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
636586	GPT AU	Gpt Group	Real Estate	Diversified Reits	5.27	9,459	13	0.6%	0.2%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Macquarie Quantitative Research, August 2023

Two other equity workflows

1) Stock View Comparator

2) Regime Analysis for Your Fund Return

SUGGESTED APPLICATION FOR FUNDAMENTAL INVESTORS

The above three Workflows (grey boxes at the start of each workflow) summarise the typical use cases for fundamental equity investors (which extend to other users as described below). However, we do mention two other workflows here (both are described in the "Other Analysis" section a little later in this report).

1. Stock View Comparator:

   This report allows you to dump in the stocks you might be examining for addition to the portfolio (for example). It requires both the Bloomberg Ticker as well as your view (OP = outperform, N = Neutral, UP = underperform). The Report then shows the Style flavours in conflict with Your Recommendation

2. Conduct Regime Analysis on your Fund Returns

   Examine your funds historically performance in different market, risk and economic regimes (required input are total returns and benchmark returns of your fund).

SUGGESTED APPLICATION FOR QUANTITATIVE INVESTORS

- Use style flavour exposures in portfolio construction by constraining on
  - ⇒ portfolio level style flavour exposures (min/max) as well as
  - ⇒ individual stock exposures to style flavours

Note that stock level exposures to all style flavours can be found in the Report titled ***"Style Flavour Stock Exposures"***.

SUGGESTED APPLICATION FOR RISK MANAGERS

- Identify more extreme portfolio level style flavour exposures and discuss with investors whether they are comfortable with the positions driving them (Workflow 1 above).
- Identify more extreme implied economic bets portfolio is taking and discuss with investors how to risk mitigate if appropriate (Workflow 2 above).

Multiple workflows for BDMs

SUGGESTED APPLICATION FOR BUSINESS DEVELOPMENT MANAGERS

The tool can help better communicate the narrative of your portfolio exposures, thematic & economic tilts (and rationale) to clients; and align clients by pre-emptively identifying which economic environments lead to out/underperformance (in short expectations setting).

For example:

- Understand the fund's current Style Flavours exposures and Economic Bets
  - ⇒ Juxtapose with unconditional (historic average) as regime (conditional) returns for these Flavours. Use this to discuss fund risk vs reward equation with clients.
  - ⇒ The Style Flavour reports (see P19) could also prove beneficial here too:
    - ***Style Flavour Profiles:*** great summary of Style Flavours, including performance in different periods; a Risk-Return chart; Historic Excess Return correlation between Style Flavours; and Style Flavour Exposure to various Macro Betas
    - ***Style Flavour Returns (Monthly):*** do your own analysis using the monthly returns of series of each the style flavours (since Jan 1995).
    - ***Across region Style Flavour regime performance:*** examine how consistent the Style Flavour performance is in different regimes by comparing to other regions (effectively an out-of-sample confidence test)
- Historical Regime Analysis on the Fund (please contact us to discuss access)
  - ⇒ Use the Regime Performance Analysis tool to find out in what environments the fund has historically out or underperformed (Fig 18 and 19 below).
  - ⇒ Flavour and Economic Exposures over time:
    - Examine how these varied over time and in different regimes
    - Examine how the current exposures vary from the historic average.
  - ⇒ Attribution: in future we may add the ability to conduct performance attribution using style flavours.

Multiple Workflows for Fund-Of-Fund Managers:

at both aggregate and manager level

SUGGESTED APPLICATION FOR FUND-OF-FUND MANAGERS

1. Aggregate Portfolio:

Understand your Style Flavour and regime/economic bets at the aggregate equity portfolio level and use them to construct portfolios better.

Our recommended starting point would be to tilt away from managers with headwind flavours and then towards managers with tailwind flavours in the specific environments you are worried about (if you want to take a specific position) or that are aligned to your strategic goals. For example, knowing a better mix of managers heading into a recovery.

If your aggregate economic bets are still not remediated in the way you want you might take a view on future regimes via tilting towards a fund manager to manage them, via derivatives or through active overlay portfolios.

2. Manager Specific Analysis:

The tool allows for more granular Manager Analysis too. For example, it can help you better understand each funds style flavours and economic bets. You can also use the regime analysis to better cross-examine fund managers as to how they are positioned and why.

Examples of questions that the tool can help you answer include:

1. Is your value manager a value manager (same question for growth)?
2. And if so, what type of value (growth) manager (i.e. what Style Flavour)?
3. How consistent are these Flavour exposures through time (do they vary)?
4. In what regimes have these Flavours historically outperformed in and in what regimes are they vulnerable to?
5. In what economic environment are they currently betting on (and what environments did they bet on historically, and how did they perform in these environments)?
6. Critically you can drill down and find what stocks are driving these Flavour exposure. This is important if the manager is
    1. overweight to headwinds flavours (e.g. Loser Lossmakers or High Risk Growth), or
    2. overweight in flavours likely to underperform in regimes you are forecasting

3. Idea Generation

Use the Reports ***"Top/Bottom Stocks by Style Flavour"*** or ***"Regime Scenario Analysis"*** to manage the gap between your strategic expectations and the flavour or economic exposure of your aggregate portfolios.

Asset Allocators: can better understand their aggregate flavour and economic exposures

SUGGESTED APPLICATION FOR ASSET ALLOCATORS

The tool can help Asset Allocators understand their Style Flavour and regime/economic bets at the aggregate equity portfolio level and use the tool to work out how to realign to your economic expectations.

For example:

- Instead of Asset Allocators upping their general equities exposure heading into a recovery, the tool allows you to ask what is the better type of equities most aligned to this economic expectation (something the naive Value/Growth paradigm of Style 1.0 struggles with).
- The tool could then be used to subsequently identify funds aligned to these expectations.
- It there is still a gap, the tool can help identify active overlay portfolios to help bridge the gap.
- The tool could also assist in taking a total portfolio / Dynamic Asset Allocation approach, as well as manage unintended risks in relation to “Your Super, Your Future”, which may be more pertinent for underperforming funds.
- We note that the investor may wish to strip out their passive equity portfolios to better understand the style flavour exposures (as these passive portfolios will mute the Style Flavour exposures in the Style 2.0 report)

OTHER REPORTS IN THE STYLE COUNSEL TOOL

The tool also has a number of other supporting reports as follows:

Reference Reports

1. Style Flavour Definitions:

   Exhibits a brief description of all identified style flavours to-date (as per Appendix 2)

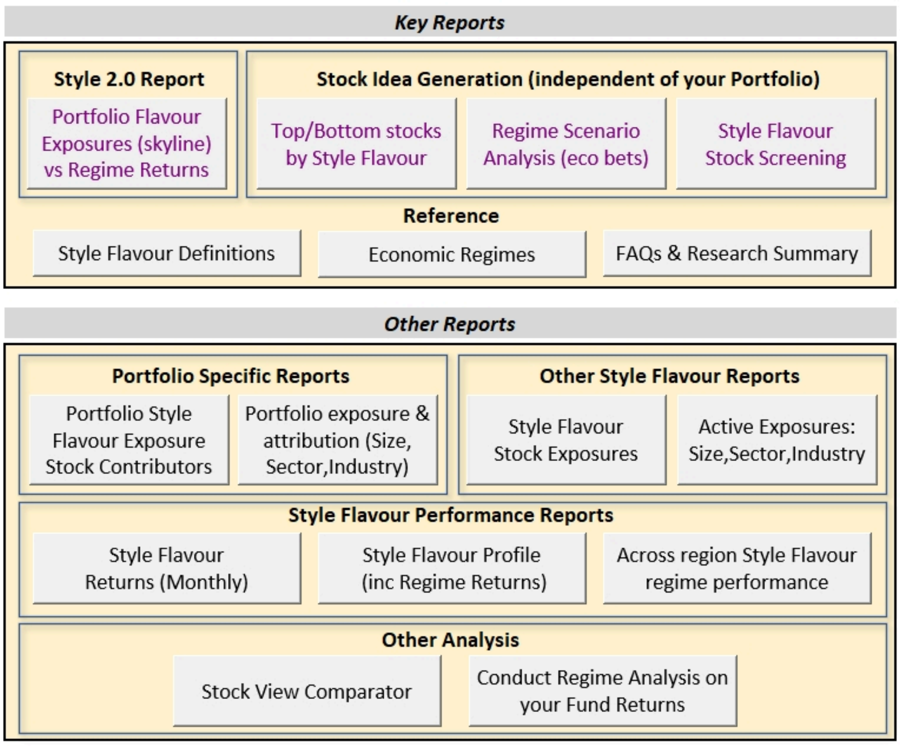
2. Economic Regimes:

   Exhibits full history of different regimes since Jan 1995 including: Economic Cycle (derived from OECD LI); US Breakeven inflation expectations; Country/Region level inflation; Country level 10 Year Yields; Volatility Regimes; Yield Curve Regimes

3. FAQs

   Answers on what Style 2.0 is; how to use the tool; some common questions; as well as links to the Style Research Reports to date (formatted as printable 2 page pdf)

Figure 15 - Other Reports (this figure shows full suite of reports available)



Source: Macquarie Quantitative Research, August 2023

<u>Portfolio Style Flavour Exposure Contributors:</u> shows each stock contribution to your portfolios style flavour exposure.

***Portfolio Specific Reports** (click on grouping to expand/expose these reports)*

1. Portfolio Style Flavour Exposure Stock Contributors:

   Stock level contribution to portfolios style flavour exposures (= Active Weight x Stock's style flavour exposure)

2. Portfolio Exposure & attribution:

   Attributes your portfolios style flavour exposures by Size, Sector and Industry

The <u>Style Flavour Stock Exposures</u> report shows the flavour exposures for all stocks

Other Style Flavour Reports (independent of portfolio)

1. Style Flavour Stock Exposures:

   Style Flavour exposure of all stocks in investment universe (ranges from 0% to 100%, with greater than 50% indicating stock is a member of the style flavour / screen)

2. Active Exposures:

   Counts and active weight for flavours by Size, Sector, Industry

Style Flavour Reports

1. Style Flavour Returns (Monthly):

⇒ Shows the monthly total returns of the benchmark and the style flavours through time (since Jan 1995) if the user wishes to conduct further analysis.

2. Style Flavour Profiles: this is a great summary of the style flavours and includes

⇒ Summary performance since Jan 1995, and cut by different time period and regimes

⇒ Risk (Tracking Error), Opportunity Set, Turnover

⇒ Plots each Style Flavour onto one Risk-Excess Return chart

⇒ Opportunity Set overlap between Style Flavours

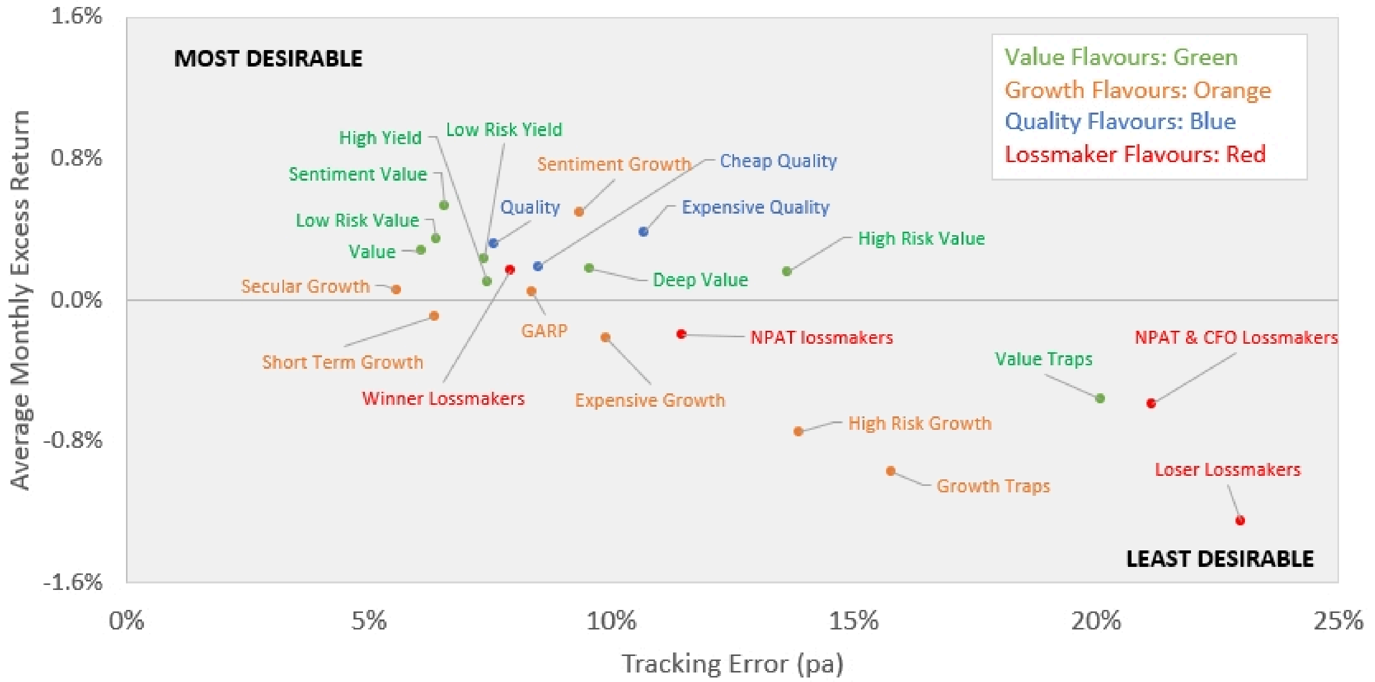
⇒ Historic Excess Return correlation between Style Flavours

⇒ Each Style Flavour Exposure to various Macro Betas

3. Across region Style Flavour regime performance

⇒ Across region comparison is useful as an out-of-sample test: this shows the average excess return of each style flavour in various time periods and in various economic regimes.

Figure 16 - Style Flavours: Historic Risk (Tracking Error, ann) vs Excess Return (avg monthly)



Source: Macquarie Quantitative Research, August 2023

Other Analysis

1. Style View Comparator: paste your stocks list in (Bloomberg Ticker) along with your views (OP = outperform, N = Neutral, UP = underperform). This report displays the style flavours in conflict with your views (useful at total portfolio as well as trade portfolio level).

Figure 17 - Conflicts Report (Style View Comparator)

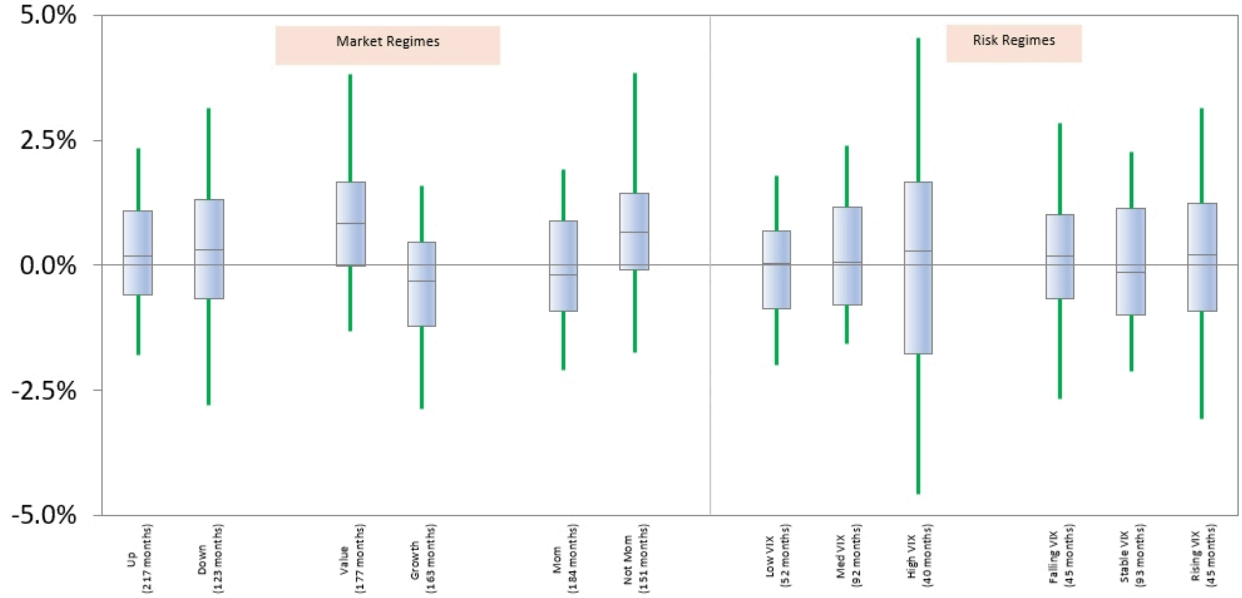
Bbg Tick	OP for Outp; N for Neutral; UP for UnderP Your Recon	Company Name	Sector	Industry	Price (Local)	Mkt Cap AU$mm	Broker Coverage (EPS FY1)	Broker Consensus Recom (Green = OP, White = N, Red = UP)	Style flavours in conflict with Your Recommendation
29M AU	N	29Metals Ltd.	Materials	Metals & Mining	0.88	232	8		Headwind: Loser Lossmakers (avoid as tends to negatively surprise)
A11 AU	OP								
A2M AU	UP	A2 Milk Company Limited	Consumer Staples	Food Products	5.05	3,646	14		Tailwind: Sentiment Growth, Quality
ABC AU	N	Adbri Ltd.	Materials	Construction Material	2.41	897	14		None
ABP AU	N	Abacus Property Group	Real Estate	Diversified Reits	2.70	1,110	7		Tailwind: Low Risk Yield
AD8 AU	OP	Audinate Group Limited	Information Technology	Electronic Equipment,	9.68	690	7		
AFG AU	N	Australian Fin.Gp.Ltd.	Financials	Financial Services	1.68	371	4		Tailwind: Sentiment Value
AGI AU	OP								
AGL AU	OP	Agl Energy Limited	Utilities	Multi-Utilities	11.04	6,610	13		None
AGY AU	OP	Argosy Minerals Ltd.	Materials	Metals & Mining	0.39	520	2		Headwind: NPAT & CFO Lossmakers (avoid as tends to negatively surprise)
AKE AU	OP	Allkem Ltd.	Materials	Metals & Mining	16.32	9,782	19		None
ALD AU	OP	Ampol Ltd.	Energy	Oil, Gas & Consumab	30.63	7,299	11		None
ALL AU	OP	Aristocrat Leisure Ltd.	Consumer Discretionary	Hotels, Restaurants &	39.52	25,916	15		None
ALQ AU	OP	Als Ltd.	Industrials	Professional Service:	11.56	5,597	12		
ALU AU	N	Altium Limited	Information Technology	Software	37.34	4,572	15		Tailwind: Sentiment Growth, Quality
ALX AU	N	Atlas Arteria Group	Industrials	Transportation Infras	6.17	7,519	9		Headwind: High Risk Growth (avoid as tends to negatively surprise), Growth Traps (avoid as tends to negatively surprise)
AMC AU	N	Amcor Plc.	Materials	Containers & Packagi	15.08	9,161	14		None
AMI AU	OP								
ANN AU	N	Ansell Ltd.	Health Care	Health Care Equipmer	26.69	3,394	13		Tailwind: Sentiment Value
ANZ AU	N	Anz Group Holdings Ltd.	Financials	Commercial Banks	23.68	71,120	15		Tailwind: Sentiment Value, Low Risk Yield
APA AU	N	Apa Group	Utilities	Gas Utilities	10.07	11,882	14		Tailwind: Low Risk Yield, Quality
APE AU	N	Eagers Automotive Ltd.	Consumer Discretionary	Specialty Retail	12.95	2,216	16		None
APX AU	UP	Appen Limited	Information Technology	It Services	2.72	367	10		None
ARB AU	N	Arb Corporation Ltd.	Consumer Discretionary	Automobile Compone	28.59	2,206	10		None
ARF AU	OP	Arena Reit	Real Estate	Specialized Reits	3.89	1,364	9		
ASB AU	OP	Austal Ltd.	Industrials	Aerospace & Defens	2.45	675	4		
ASG AU	OP								
ASX AU	OP	Asx Limited	Financials	Capital Markets	62.65	12,129	14		
AUB AU	OP	Aub Group Limited	Financials	Insurance	28.93	2,673	11		None
AWC AU	UP	Alumina Ltd.	Materials	Metals & Mining	1.40	3,291	8		None
AZJ AU	OP	Aurizon Holdings Ltd.	Industrials	Ground Transportatio	3.90	7,179	17		None
BAP AU	OP	Bapcor Ltd.	Consumer Discretionary	Distributors	6.04	2,050	10		
BBN AU	N	Baby Bunting Group Ltd.	Consumer Discretionary	Specialty Retail	1.26	169	7		Headwind: High Risk Growth (avoid as tends to negatively surprise)
BEN AU	N	Bendigo & Adel.Bk.Ltd.	Financials	Commercial Banks	8.72	4,956	15		Tailwind: Low Risk Yield
BGL AU	OP	Bellevue Gold Ltd.	Materials	Metals & Mining	1.24	1,396	4		Headwind: NPAT & CFO Lossmakers (avoid as tends to negatively surprise)
BHP AU	OP	Bhp Group Ltd.	Materials	Metals & Mining	46.22	234,142	18		None
BKL AU	N	Blackmores Limited	Consumer Staples	Personal Care Produc	94.15	1,483	10		Tailwind: Sentiment Growth, Quality
BKT AU	OP								
BKW AU	N	Brickworks Limited	Materials	Construction Material	27.42	2,379	8		None
BLD AU	N	Boral Ltd.	Materials	Construction Material	4.08	1,350	14		Tailwind: Sentiment Growth
BOE AU	OP	Boss Energy Ltd.	Energy	Oil, Gas & Consumab	3.19	1,125	4		Conditional: Expensive Growth
BOQ AU	UP	Bank Of Queensland Ltd.	Financials	Commercial Banks	5.63	3,673	16		Conditional: High Risk Value (out/underperforms in strong/weak economy), Value Traps (out/underperforms in strong/weak economy)

Source: Macquarie Quantitative Research, August 2023

A very useful tool for investors, BDMs, and Fund of Fund Managers

2. Conduct Regime Analysis on your Fund Returns: dump the monthly total returns and benchmark returns of your fund, and examine how it has historically performed in different market, risk and economic regimes (please contact us to discuss access)

Figure 18 - Market and Risk Regime Analysis: Monthly Excess Returns of Fund*



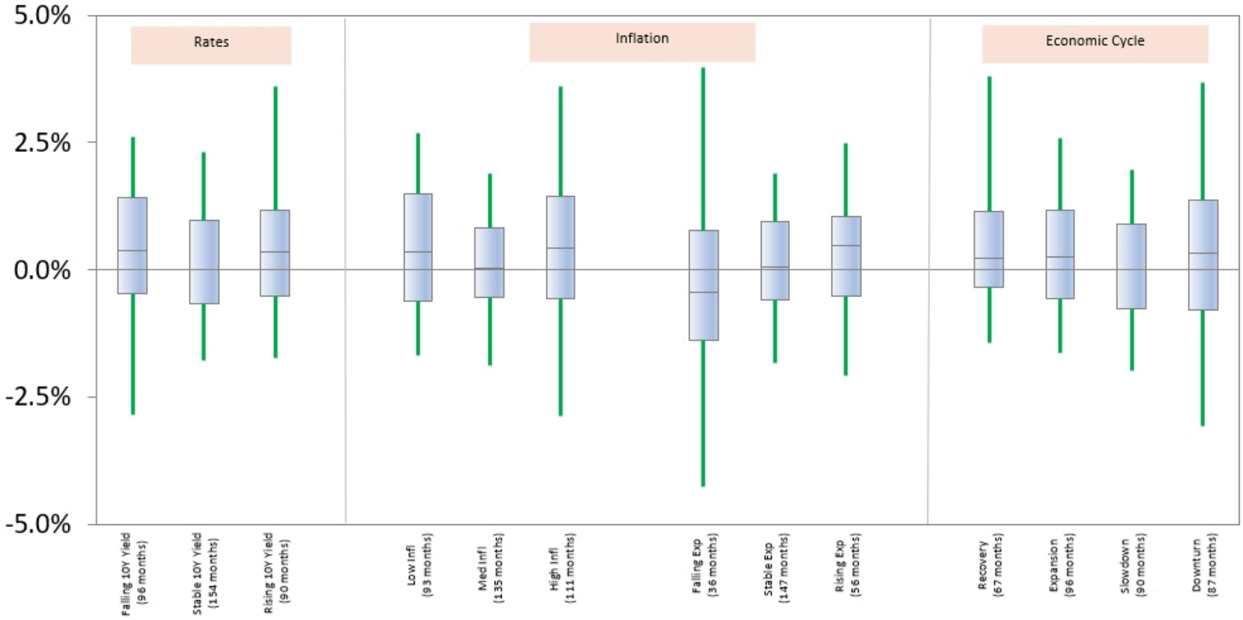
Source: Macquarie Quantitative Research, Refinitiv, S&P, FactSet, 2023

** Market Regimes: Up (Down) if benchmark index has positive (negative) return over the month; Value (Growth) if MSCI Value out(under) performs Growth over the month; Mom (Not Mom) if the MSCI Momentum index out(under)performs the MSCI parent index over the month;*

** Risk Regimes: VIX Level & Change regimes formed by cutting into three, with thresholds at 25th and 75th historical percentiles (CBOE VIX from Jun 2001, ASX200 VIX from Feb 2008)*

Source: Macquarie Quantitative Research, August 2023

Figure 19 - Economic Regime Analysis: Monthly Excess Returns of Fund*



Source: Macquarie Quantitative Research, Refinitiv, S&P, FactSet, 2023

** Regimes: Level and Change regimes were cut into three with thresholds at the 25th and 75th percentiles (based on 20+ years of historical data). Regime variables included the 10-year bond yield, Current Inflation level, as well as YoY change in US Inflation expectations as defined by the breakeven using inflation regimes based on the 10-Year TIPS/Treasury Breakeven Rate. Economic cycle based on the level and change of the US OECD Leading Indicator (split into Recovery, Expansion, Slowdown and Downturn).*

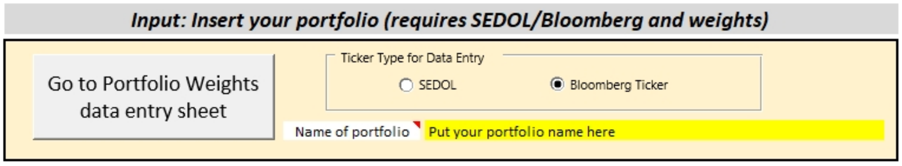
Source: Macquarie Quantitative Research, August 2023

ENTER YOUR PORTFOLIO AND BENCHMARK

Step One: in "Control" page

1. Select whether you want to use Sedols or Bloomberg Tickers
2. Enter name of the portfolio if you wish it to be displayed in the Style 2.0 Report
3. Click button *"Go to Portfolio Weights data entry sheet"*

Figure 20 - Click the button to take you to the portfolio data entry sheet



Source: Macquarie Quantitative Research, August 2023

Custom Investment Universe

- We are able to add/ subtract stocks by ticker, market cap, or by any other meta data (such as sector or country)
- We can also create an investment universe from only the tickers you provide.

Step Two: Portfolio Weights data entry page (Excel sheet is called "data_Prtf_User")

1. Click the button *"Clear Yellow Input Cells"* to clear the default portfolio
2. Enter your identifier and weights:
   1. *For Sedols: use* Columns A and B for sedols and weights respectively, or
   2. *For Bloomberg Tickers:* use Columns G and H.
3. Missing Assets
   1. *Unmatched equities in the list:* if you wish, we can manually add any unmatched equities to the tool's investment universe. We are able to add/subtract stocks by ticker, filter by market cap, or by any other metadata, such as sector or country.
   2. *Non-equity assets:* will be excluded from the calculations (e.g. cash, futures, etc).
   3. *Reweightings:* Note that if you have unrecognised assets in your portfolio, the weights of your recognised long portfolio will be reweighted to the sum of all long weights, and similarly for recognised short portfolio (as per column Q "ReWeights")
4. Troubleshooting
   1. *Sedols:* please only enter 6 digit sedols
   2. *Duplicates:* please check for and remove any duplicates in your portfolio
5. Long/Short
   1. The tool also caters for Long/Short and Market Neutral.

Figure 21 - Enter your portfolio: choose sedols or Bloomberg Tickers

Macquarie Quant: Style Counsel Tool
Managing portfolios using Style 2.0

Fill if Ticker Type = Sedol (6 digits) | *Fill if Ticker Type = Bloomberg ticker* | *Referenced Columns*

Sedol	Weight	In Universe	6 digit sedol?	Is Duplicate	BbgTicker	Weight	In Universe	Is Duplicate	Sedol	BbgTicker	homecode	Weight	In Universe	ReWeights
					RHC AU	3.9%	1	NO	604199	RHC AU	RHC-AU	3.9%	1	3.9%
					HLS AU	1.7%	1	NO	BFZYRL	HLS AU	HLS-AU	1.7%	1	1.7%
					CSL AU	6.6%	1	NO	618549	CSL AU	CSL-AU	6.6%	1	6.6%
					COL AU	4.3%	1	NO	BYWR0T	COL AU	COL-AU	4.3%	1	4.3%
					WOW AU	2.5%	1	NO	698123	WOW AU	WOW-AU	2.5%	1	2.5%
					TLS AU	5.0%	1	NO	608728	TLS AU	TLS-AU	5.0%	1	5.0%
					APA AU	2.3%	1	NO	624730	APA AU	APA-AU	2.3%	1	2.3%
					TCL AU	4.3%	1	NO	620088	TCL AU	TCL-AU	4.3%	1	4.3%
					ALQ AU	1.9%	1	NO	B86SZR	ALQ AU	ALQ-AU	1.9%	1	1.9%
					GPT AU	2.8%	1	NO	636586	GPT AU	GPT-AU	2.8%	1	2.8%
					GMG AU	3.4%	1	NO	B03FYZ	GMG AU	GMG-AU	3.4%	1	3.4%
					ALD AU	2.0%	1	NO	BM9120	ALD AU	ALD-AU	2.0%	1	2.0%
					WDS AU	3.1%	1	NO	BMGT16	WDS AU	WDS-AU	3.1%	1	3.1%
					NST AU	3.8%	1	NO	671745	NST AU	NST-AU	3.8%	1	3.8%
					ORA AU	2.7%	1	NO	BH4TCW	ORA AU	ORA-AU	2.7%	1	2.7%
					NCM AU	3.4%	1	NO	663710	NCM AU	NCM-AU	3.4%	1	3.4%
					PLS AU	2.3%	1	NO	B2368L	PLS AU	PLS-AU	2.3%	1	2.3%
					BHP AU	11.5%	1	NO	614469	BHP AU	BHP-AU	11.5%	1	11.5%
					TLC AU	2.5%	1	NO	BNRQW7	TLC AU	TLC-AU	2.5%	1	2.5%
					ALL AU	3.0%	1	NO	625398	ALL AU	ALL-AU	3.0%	1	3.0%
					SDF AU	3.1%	1	NO	BCT5FD	SDF AU	SDF-AU	3.1%	1	3.1%
					SUN AU	3.6%	1	NO	658508	SUN AU	SUN-AU	3.6%	1	3.6%
					IAG AU	3.1%	1	NO	627102	IAG AU	IAG-AU	3.1%	1	3.1%
					NAB AU	6.1%	1	NO	662460	NAB AU	NAB-AU	6.1%	1	6.1%
					ASX AU	2.8%	1	NO	612922	ASX AU	ASX-AU	2.8%	1	2.8%
					CBA AU	6.3%	1	NO	621503	CBA AU	CBA-AU	6.3%	1	6.3%
					CPU AU	2.0%	1	NO	618041	CPU AU	CPU-AU	2.0%	1	2.0%

Source: Macquarie Quantitative Research, August 2023

Final checks

Then go to the Style 2.0 report for your portfolio (Style Flavour Skyline)

Step Three: Check Portfolio Stats, and press buttons to take you to the Style 2.0 chart

1. Check the Portfolio Stats. Let us know if you wish for any unrecognised longs or shorts to be added to your tool's investment universe.
2. You can also re-lever the long to short by entering your preferred Long and Short exposures. For example your portfolio might be 120% L and 20% short, but you may want to see it at 100% L and 40% short: enter **100%** in cell V36 and **-40%** in cell V37.
3. Click the button "Go to Style Flavour Skyline" to go to the Style 2.0 Report. However, if you prefer to use your own benchmark, please go to Step 4 below first.

Figure 22 - Portfolio Stats and then Go To Style Flavour Skyline

Portfolio Data Entry Notes:	
1) CHOOSE TICKER TYPE ON "CONTROL" PAGE:	Either sedol (6 digit) or Bloomberg Ticker (eg BHP AU, or 1 HK)
2) ENTER YOUR PORTFOLIO:	On this sheet only enter ticker & weights in yellow cells (clear old yellow cells before adding, eg Press "Clear yellow Ce
3) WARNING ON TICKER TYPE:	If you have selected sedol as Ticker Type you do not need to fill in the Bloomberg yellow columns (and vice versa)
4) WARNING ON DUPLICATES:	Make sure there are no duplicates (see column D if sedols are used, and Column I if Bloomberg Ticker is used)
5) YOUR WEIGHTS WILL BE REWEIGHTED:	Unmatched equities are excluded, with remaining positions reweighted so the total long and total short are unchange
6) NON-RECOGNISED ASSETS:	Whilst unmatched equities can be added to the tool, it does not currently cater for assets outside equities (eg Cash, F
7) SEDOLS DRIVE THE STYLE COUNSEL TOOL:	Note that Style Counsel Tool runs off sedol (Bloomberg Tickers are converted into sedols)

Portfolio Stats		
Count Longs (Weights > 0)	71	
Count Shorts (Weights < 0)	4	
Count all stocks in Portfolio	75	
Count Recognised Longs (Weights > 0)	69	
Count Recognised Shorts (Weights > 0)	4	
Count all stocks Recognised in Universe	73	
Count Unrecognised Longs (Weights > 0)	2	
Count Unrecognised Shorts (Weights > 0)	0	
Count all stocks recognised in Universe	2	
Sum Longs in Prtf	91.8%	
Sum Shorts in Prtf	-8.2%	
Sum weights in Prtf	83.7%	
Ratio of Long / Short	***11.24***	
Sum of Recognised Longs in Prtf	88.7%	
Sum of Recognised Shorts in Prtf	-8.2%	
Sum of Recognised Weights	80.6%	
Ratio of recognised Long / Short	***10.86***	
Sum of final Longs in Prtf	91.8%	
Sum of final Shorts in Prtf	-8.2%	
Sum final weights in Prtf	83.7%	
Ratio of final Long / Short	***11.24***	
Override: specify aggregate Long Prtf to rescale to		*Must be posiitve. For long only, set to 100% if you want to exclude cash, futures and other non-equities.*
Override: specify aggregate Short Prtf to rescale to		*Must be negative*

Source: Macquarie Quantitative Research, August 2023

Optional Custom Benchmark

Ability to add your own benchmark, including custom weights

Step Four (optional): Go to Manual Benchmark Weights data entry

1. Works similar to Steps 2 and 3 above combined, but this time it's for your benchmark.
2. Note that you can add whatever benchmark you want, include weights with your own adjustments for free floats, or as calculated according to your investment mandates.
3. Again any unmatched benchmark equities can be added to the tool.

Figure 23 - Manual Benchmark Weights data entry

Manual Benchmark Data Entry Notes:	
1) CHOOSE TICKER TYPE ON "CONTROL" PAGE:	Either sedol (6 digit) or Bloomberg Ticker (eg BHP AU, or 1 HK)
2) ENTER YOUR BENCHMARK:	On this sheet only enter ticker & weights in yellow cells (clear old yellow cells before adding, eg Press "Clear yellow Ce
3) WARNING ON TICKER TYPE:	If you have selected sedol as Ticker Type you do not need to fill in the Bloomberg yellow columns (and vice versa)
4) WARNING ON DUPLICATES:	Make sure there are no duplicates (see column D if sedols are used, and Column I if Bloomberg Ticker is used)
5) YOUR WEIGHTS WILL BE REWEIGHTED:	If the weights of your recognised stocks do not add up to 100% these will get reweighted (as per column ReWeights)
6) NON-RECOGNISED ASSETS:	Whilst unmatched equities can be added to the tool, it does not currently cater for assets outside equities (eg Cash, F
7) SEDOLS DRIVE THE STYLE COUNSEL TOOL:	Note that Style Counsel Tool runs off sedol (Bloomberg Tickers are converted into sedols)

Manual Benchmark Stats	
Count Assets (Weights > 0)	0
Count Recognised Stocks (Weights > 0)	0
Count Unrecognised Stocks (Weights > 0)	0
Sum Assets in Benchmark	0.0%
Sum of Recognised Stocks in Benchmark	0.0%
Sum of final Stocks in Benchmark	0.0%

Critical Notes

1) If your weights don't add to 100%, they will be reweighted t0 100%
2) If you add a manual benchmark here, it will be used. If you prefer to use our default weights press button "Clear Yellow Input Cells").

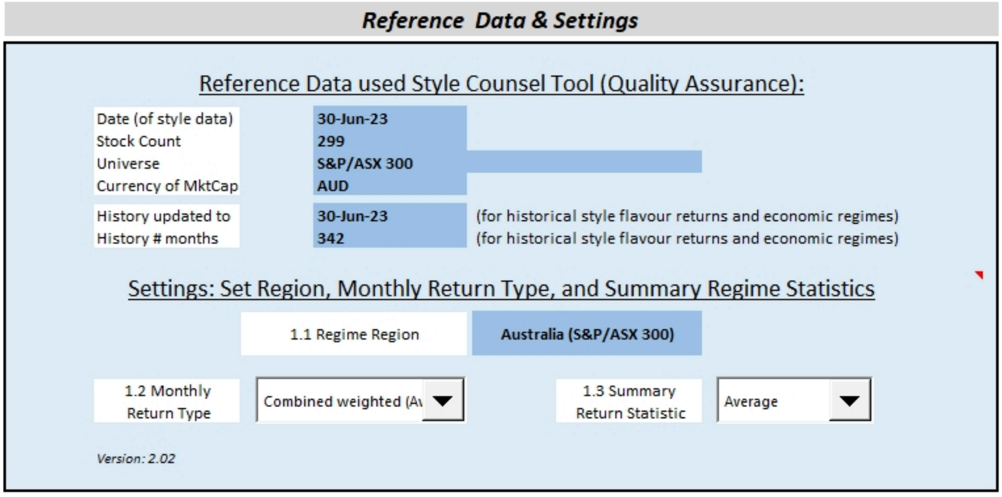
Source: Macquarie Quantitative Research, August 2023

We recommend users check the reference data

REFERENCE DATA & SETTINGS

We recommend you double-check the Universe and Date (of style data) for the Style Counsel Tool you have received from us before proceeding with your analysis.

Figure 24 - Please check the date and universe in the Reference Data



Source: Macquarie Quantitative Research, August 2023

Investors may also wish to change or toggle between the Monthly Return Type of the regime returns (this affects what is displayed on the Style 2.0 Report). They have three choices:

- Equal weight
- Cap weight
- Combined (simple average of equal and cap, which is the default)

Investors also have the choice of the Summary Return Statistic that they'd prefer to see on the Style 2.0 Report:

- Average
- Median

A RECAP ON STYLE 2.0 - THE PHILOSOPHY BEHIND THE STYLE COUNSEL TOOL

In the previous report, Style Flavours 2.0 - Where's the Lamb Sauce?, we pulled the key findings from the previous 4 reports of the Style Series into a framework we call Style 2.0.

Two of these key findings redress some of the challenges of traditional risk models, namely misspecifying style definitions, and using styles that too broad:

1) Style Definitions really matter when defining value or growth or quality.

- Value: relying on book to price can expose you to risky growth stocks ***with high torpedo risk***. As per Penman & Reggiani (2014), this is partly due to the nature of conservative accounting when it comes to book value. Ben Graham was also not a fan 90 years ago, commenting that earnings were unrelated to book value (essentially why should all assets have the same rate of return?). This illustrates the importance of using sensible valuation metrics (if you are taking a multiples approach).
- Growth: using historic growth to define growth stocks is unreliable as growth tends to mean revert. On the other hand whilst consensus analyst forecast growth does a reasonable job in capturing growth stocks, the growth forecasts tends to be over optimistic. As a result quantitative investors tends to not use growth factors. But, as detailed in our third style series report on Growth, growth becomes a lot more useful by screening out growth's overoptimistic tendency (as discussed below).
- Quality: an investment style with roots in fundamental analysis, there are a number of different ways to define quality. For starters quality companies are typically regarded as more profitable (higher ROE / ROIC). Additionally, investors typically associate quality companies as exhibiting downside risk protection / put option traits (more stable earnings or financial strength) in weaker economic conditions. And then there is Earnings Quality (i.e. % of accruals in earnings), with the tendency for cash earnings to be a better predictor of future earnings.

2) The Flavour of your Style really matters (i.e. there are different flavours of styles):

- Key Value Flavours
  - ⇒ High-Risk Value and Value Traps perform well when economic conditions are strong, but underperform strongly in weak environments (we call them Conditional flavours).
  - ⇒ Sentiment Value however is very different value flavour as it historically has performed more consistently over the cycle (what we call a Tailwind flavour), meaning a very different risk-return dynamic.
- Key Growth Flavours
  - ⇒ On the growth side we also identified Sentiment Growth stocks, again a Tailwind flavour. As commented above here we have screened out growth's over optimism propensity using a common sense screen (unlike most other growth flavours).
  - ⇒ Conversely, High-Risk Growth has a strong propensity to negatively surprise (which we call a Headwind flavour).

As we've explained above, there are tailwind flavours (all-weather), headwind flavours as well as conditional flavours (depends on the economic regime). Importantly these Style Flavour not only can have different returns in different regimes, they also tend to have different volatilities, different earnings surprise propensities and different macro exposures.

We see Style Flavours as complementary to traditional risk models. On the latter, they are helpful in telling a broader narrative ex-post about what happened and useful in risk estimations (particularly in stable economic environments), but they are not as helpful ex-ante managing your portfolio. On the other hand managing your portfolio using these granular categories (Style Flavours), which have more specific outcomes in different regimes, allows you to more cleanly map exposures to desired outcomes.

As an example a risk model may say you are exposed to broad value, but it won't tell you if it's to Value Traps which have high leverage to the cycle (an implied economic bet). Knowing your exposure to each at both a portfolio and stock level, as well as an awareness of the current and your expected economic regimes, is critical in better portfolio management.

The concept of conditionality which we've used to manifest Style Flavours is not an alien concept, as it's strongly aligned to investor intuition, and is how investors often use a screening process to identify candidate companies to further investigate.

APPENDIX 1: FREQUENTLY ASKED QUESTIONS

1. What is Style 2.0?

- Style 2.0 is an investor-oriented framework that corrects for criticisms of style benchmarks and risk models, by using investor-aligned style definitions. Importantly we don't see styles (Value, Growth or Quality) as being homogenous, but rather found that within Styles there are different "Style Flavours" whose performance, risks and economic exposures can vary significantly from their within-style siblings.
- By contrast Style 1.0 starts with poorer definitions of Value and Growth; makes Value and Growth opposite each other (and the only styles); and critically assumes all Value and all Growth are homogeneous.

2. What are Style Flavours?

- The key result from our style research series was that styles are not homogenous. This concept is not really new, for example investors understand the difference between cyclical vs defensive value. Here the cyclical value is pro-cyclical, whilst defensive value is less dependent of the cycle. Our research confirmed that by conditioning the right value or growth definitions (using quant factors) resulted in very different "Flavours".
- Here these flavours often perform very differently over the cycle, or just generally captured very different segments of the market (High Risk Growth vs Sentiment Growth which have very different earnings surprise propensities). In addition, we also found they were very different in terms of their tracing error, their earnings surprise propensities and their macro beta sensitivities.
- All four empirical evidences (different regime returns, different risk, different surprise propensity and different macro betas) strongly implies the flavours within styles we empirically derived are really picking up the heterogeneity of Value or Growth, etc a lot better than risk models. And unlike risk models, which can be quite a bit more obtuse practically speaking, the tool allows users to know which stocks are driving their style flavour (and economic) exposures and remediate.

3. How did we come up with Style Flavour Definitions?

- We first start with better definitions of Value and of Growth (and in future Quality, once that research is published).
- We then use quant factors to condition or segment these core styles (Value, Growth and Quality) into style flavours that better capture more homogenous fundamental intuitive/ aligned archetypes. As noted above, these flavours can perform quite differently in different regimes, or just generally capture very different segments of the market (High Risk Growth vs Sentiment Growth which have very different earnings surprise propensities).
- The Style Flavour definitions can be found by clicking on the button *"Style Flavour Definitions"* in the Control sheet.

4. How do we calculate a stock's Style Flavour Exposures?

- Here each Style Flavour exposure requires us to know two things:
  - ⇒ 1) what stocks are in or outside the style flavour screen (screen definitions / membership, as outlined in point 3 above), as well as
  - ⇒ 2) a way to rank these stocks inside the style flavour screen as well as outside the screen.
- This ranking is done by an associated Objective Function created from the same factor components as the style flavour. Here stocks inside (outside) are ranked between 50 to 100% (0-50%).
- Finally, the sigmoid function is applied to create the final flavour exposure (the exact same sigmoid function that FTSE Russell uses). These stock level exposures are available in sheet = *"Report_StyleFlavours_Exposure"*. Note that style flavour exposures are determined relative to the benchmark universe you request from us.
- See Quantamentals – Style Flavours 2.0 - Where's the Lamb Sauce for the full explanation of how we calculate Style Flavour Exposures.

5. How are the portfolio's Style Flavour Exposures calculated (as per Style 2.0 Report)?

- A portfolio's exposure to a style flavour is calculated as the sum product of each stock's active weight multiplied by each stocks' style flavour exposure. We note that if the size of the style flavour screen's opportunity set is smaller (due to a more granular screen or with more conditions) there will be a lot less companies with exposures greater than 50%, meaning higher style flavour sensitivity.
- For non-Long only portfolios, the active weight is calculated as the difference between the portfolio weight (long or short) minus the benchmark weight scaled by the net exposure of the overall portfolio. This means a market neutral portfolio with 0% equitised exposure will simply be the stocks portfolio weight (long or short).

6. Do the blue bars (style flavour exposures) in the Style 2.0 Report add to 0?

- No. Unlike Style benchmarks like the Value/Growth indices, the Style Flavours are designed to be completely independent of each other, meaning they won't add to zero.

7. Why do some stocks not have fit into any style flavour classifications?

- There are two reasons for this:

  1. We have not conducted the empirical research on the style sub-segment yet, meaning the stock may not be classified with the new style flavour. Examples of research not yet published include quality, pure growth, income strategies, and resource or biotech companies without income (exploration). Regarding Quality, we have however created a Quality straw man style flavour based on what we regard as a sensible first attempt at its definition (namely profitable, decent growth, not high risk), but will be publishing on it in the near future.
  2. Notwithstanding point 1 above, there will still be the stocks that don't exhibit the key traits of any style flavour and so belongs to none (e.g., a stock with median market growth, median quality and median market valuation .... in short, priced at fair value).
- One this second point, in Style 2.0 we avoid the cookie cutter approach of style benchmark vendors (MSCI, S&P, FTSE Russell) who make all stocks fall onto the Value-Growth spectrum. Rather, it entirely depends on a variety & combination of stock characteristics as to what style flavours they fall into (better emulates real investing).
- Note also that all stocks will have some exposure to all style flavours with these exposures ranging from 0% to 100%, with only stocks with flavour exposures over 50% being classified as being in a style flavours category.
- As of 30th April 2023 about 15% of the stocks in the ASX 300, and 20% of the MSCI All Country World Index are not classified as a style flavour.

8. How do I use Style Flavours to better manage my portfolios?

- It's worth pointing out that a Style-Flavours based approach is not dissimilar to a typical quant approach using multi-factor models in that it allows you to get a feel for any potential head or tailwinds for each of your positions (a critical purpose of the tool).
- In the case of style flavours, they give you a more intuitive or investor-aligned lens through which to "kick the tyres" on your positions. This kicking is against the weight of historical backtests and other economic statistics (such as risk, earnings surprise propensity and macro exposures) for each style flavour.
- For example, if you have a long position in a stock which we've identified as a headwind flavour, then ideally this might give you pause to consider this position to make sure you were comfortable with it as the odds are more stacked more against you (this is especially the case for Loser Lossmakers or High-Risk Growth style flavours).
- One could also target tailwind flavours, or conditional flavours that tended to outperform in economic regimes that you are forecasting.
- We would stress however that whether it is a quant model or a style flavour categorisation (which at its heart is similar to the initial conditional filtering approach that many fundamental investors do) they all have estimation error (inescapable in financial markets whether you are a quant or fundamental investor).
- Additionally, there are some things models can't know that fundamental analysts will know, like know that the reason a stock is looking cheap is due to a negative change in competitive landscape or a change in legislation.

APPENDIX 2: STYLE FLAVOUR DESCRIPTIONS

This appendix exhibits the list and brief description of all identified style flavours to-date from our Style Series. We note that the Quality style series report(s) has yet to be published, and so have created a straw men Quality Style Flavour in the interim.

Style Group	Style Type	Style Name	Style Direction **	External Explanation (with link to Style Series Report where available)
Value	**Core**	**Value**	**Conditional**	Top Third of Companies of all Profitable stocks by Composite Value Model (CVM)
Value	Flavour	High Risk* Value	Highly Conditional	Riskier half of stocks within Top Third of Companies of all Profitable stocks by Composite Value Model. Tends to overweight cyclical stocks. Previously called Cyclical Value.
Value	Flavour	Value Traps	Highly Conditional	Riskier half of stocks and Poor Momentum within Top Third of Companies of all Profitable stocks by Composite Value Model (Value Traps). Used to be called Cyclical Value Poor Momentum.
Value	Flavour	Sentiment Value	Most Attractive	Top half of stocks by momentum within Top Third of Companies of all Profitable stocks by Composite Value Model. Previously called Momentum Value.
Value	Flavour	Low Risk* Value	Attractive	Least risky half of stocks within Top Third of Companies of all Profitable stocks by Composite Value Model (opposite of Cylical Value)
Value	Flavour	Deep Value	Conditional	Deep Value (Top 15 % of Cheap, Profitable stocks)
Value	Flavour	Yield Traps	Conditional	Top 30% of stocks by forecast (NTM) Dividend Yield, then include the top half of this subset by high risk
Value	Flavour	Low Risk Yield	Conditional	Top 30% of stocks by forecast (NTM) Dividend Yield, then excluding the top half of this subset by risk, and lastly removing stocks with Yield > 15%. Opposite of Yield Traps.
Growth	**Core**	**Short Term Growth**	**Conditional**	Top Third by ST growth of profitable stocks (ST Growth is 1 year forward consensus EPS Growth)
Growth	Flavour	GARP	Conditional	Top Third by ST growth of profitable stocks, including the top half of stocks by the Composite Value Model (CVM)
Growth	Flavour	Expensive Growth	Conditional	Top Third by ST growth of profitable stocks, excluding the top half of stocks by the Composite Value Model (CVM)
Growth	Flavour	Sentiment Growth	Attractive	Profitable stocks split into top half by ST Growth, then top half by Low Risk, and finally top half by High Momentum. Propensity to positively surprise (which was why we previously called this ST Growth Through-The-Cycle).
Growth	Flavour	High Risk* Growth	Avoid	Profitable stocks split into top half by ST Growth, then top half by High Risk, and finally top half by Low Momentum. Strong propensity to negatively surprise (which was why we previously called this Overinflated ST Growth).
Growth	Flavour	Growth Traps	Avoid	High Risk ST Growth that are more expensive (Growth Traps)
Growth	**Core**	**Secular Growth**	**Conditional**	Top Third by LT growth of profitable stocks. Was previously called Growth (Long-Term)
Quality	**Core**	**Quality**	**Attractive**	Top 50% by ROE_NTM (after lossmakers removed), Top 66% by LowRisk, Top 50% by Growth NTM (historic ROE used if ROE NTM not available). Was previously called "Quality: Profitable, Low Risk, Growth".
Quality	Flavour	Cheap Quality	Attractive	Quality, including the top half of stocks by the Composite Value Model (CVM). Was previously called "Quality at a Reasonable Price".
Quality	Flavour	Expensive Quality	Less Attractive	Quality, excluding the top half of stocks by the Composite Value Model (CVM)
Lossmakers	**Core**	**NPAT lossmakers**	**Highly Conditional**	NPAT lossmakers
Lossmakers	Flavour	NPAT & CFO Lossmakers	**Avoid**	NPAT and CFO lossmakers (otherwise known as Double Lossmakers)
Lossmakers	Flavour	Winner Lossmakers	Less Attractive	Lossmakers most safe to own (Top Third of stocks by Lossmaker Alpha within the expanded Lossmaker universe). Was previously called "High Lossmaker Alpha". Lossmaker definition includes FCFF.
Lossmakers	Flavour	Loser Lossmakers	Avoid	Lossmakers most risky to own (Bottom Third of stocks by Lossmaker Alpha within the expanded Lossmaker universe). Was previously called "Low Lossmaker Alpha". Lossmaker definition includes FCFF.

** When risk is mentioned above, we use a simple composite "Low Risk Model" using 6 factors: earnings certainty, volatility, beta, size, leverage and simplified Merton default model (it is not a risk model like Barra or Axioma).*

*** The Style Direction column is only rough uide (it can depend on a number of things, such as region and regime)*

APPENDIX 3: STYLE SERIES SUMMARIES (FIRST FOUR REPORTS)

We briefly summarise our style series to date below:

Building a better mousetrap, avoid torpedoes (Sep 2021)

- We build a composite valuation model (Australia, Global)
- Value ratios with most desirable risk-return were Net Buybacks to Market Cap and Free Cashflow to Price
- Stocks very cheap on forecast PE exhibited overoptimism, partly driven by Resources, manifesting in higher incidence in future torpedoes & negative surprises (we also find this was true for Lossmakers & expensive growth stocks)
- Beware Book to Price which underperformed in Australia (mixed globally). Critically (and contrary to popular thought), it captures risky-growth that tends to pick lossmakers with high torpedo risk (see Penman & Reggiani, 2014). Avoid Tangible Book to Price.

Anatomy of Value: Overcoming headwinds in value (Nov 2021)

- Value strategies failed to deliver in the last decade, suggesting a structural explanation. A key reason is forecast (in)accuracy, where forecast growth is over(under)-estimated for value (growth) stocks (=> earnings surprises). Other reasons include low rates/inflation.
- We then try to understand to understand value a different way: by asking if there are different types of value (value flavours)
- We find two key types: cyclical/higher risk value; and high-momentum (lower risk), with low correlation (~30%) and low overlap.
  - ⇒ High Risk Value: high octane value works best when economy is strong, rising rates / inflation, falling VIX. Previously called Cyclical Value (tilts to resources & industrials).
  - ⇒ Sentiment Value: more consistent (defensive) through the cycle and in most economic conditions (but not high octane). This was previously called Momentum Value.

Anatomy of Growth - Buy growth stocks that deliver, avoid stonks (Apr 2022)

- Earnings growth drives stock returns but growth forecasts exhibit overoptimism (diminished globally since 2015 but still in Australia).
- Sentiment Growth: We find this overoptimism can be reversed by removing lossmakers, stocks with high risk and stocks with poor momentum (sentiment). This subset of growth stocks performs through the cycle (previously called "Growth-Through-The-Cycle")!
- High Risk Growth: Conversely avoid growth stocks with high risk & poor momentum, as they tend to negatively surprise (AU, Globally). This was previously "Overinflated Growth".
- If growth investors could forecast perfectly they'd earn excess 0.70% per month (AU, Global), and another 0.10% from buying cheaper. But using consensus there is negative alpha (GARP helps)
- Avoid historic growth, which is anti-correlated to future growth.

Anatomy of Lossmakers – Playing with fire safely (Nov 22)

- Stocks that became lossmakers tend to be lower quality, higher risk with poor momentum.
- The odds on the lossmaker you own becoming profitable were only 38% historically for the S&P/ASX 300 (55% in the MSCI World noting this is a large cap universe). The remaining 62% underperformed by 13% p.a. Note that analysts were only right 50% of the time when they forecast a return to profitability (63% globally).
- Red flags for lossmakers: being a Cashflow (CFO, FCFF) lossmaker is worse than an NPAT lossmaker (CFO + NPAT is much worse). Avoid lossmakers with poor momentum, expensive and high risk. Avoid double lossmakers (NPAT and CFO).
- We combine findings into a lossmaker specific model, which clearly shows only about one-thirds of stocks can be invested in safely (which we call "Winner Lossmakers"). The bottom third of stocks ("Loser Lossmakers") should be avoided in almost all economic regimes.

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Important Disclosures

Recommendation definitions	Volatility index definition	Financial definitions
Macquarie – Asia and USA Outperform – expected return >10% Neutral – expected return from -10% to +10% Underperform – expected return <-10% **Macquarie – Australia/New Zealand** Outperform – expected return >10% Neutral – expected return from 0% to 10% Underperform – expected return <0% During periods of share price volatility, recommendations and target prices may occasionally and temporarily be inconsistent with the above definitions. **Recommendations** – 12 months **Note**: Quant recommendations may differ from Fundamental Analyst recommendations	This is calculated from the volatility of historical price movements. **Very high** – highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative. **High** – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative. **Medium** – stock should be expected to move up or down at least 25–40% in a year. **Low** – stock should be expected to move up or down at least 15–25% in a year. * Applicable to select stocks in Asia/Australia/NZ **Note:** expected return is reflective of a Medium Volatility stock and should be assumed to adjust proportionately with volatility risk	All "Adjusted" data items have had the following adjustments made: **Added back:** goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests **EPS** = adjusted net profit / efpowa* **ROA** = adjusted ebit / average total assets **ROA Banks/Insurance** = adjusted net profit /average total assets **ROE** = adjusted net profit / average shareholders funds **Gross cashflow** = adjusted net profit + depreciation *equivalent fully paid ordinary weighted average number of shares All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions for quarter ending 30 June 2023

	AU/NZ	Asia	USA	
Outperform	56.88%	63.90%	63.89%	(for global coverage by Macquarie, 2.58% of stocks followed are investment banking clients)
Neutral	36.88%	23.06%	33.33%	(for global coverage by Macquarie, 1.22% of stocks followed are investment banking clients)
Underperform	6.25%	13.04%	2.78%	(for global coverage by Macquarie, 0.00% of stocks followed are investment banking clients)

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