Growth / Defensive Asset Categorisation Proposed Solution

How to Calculate your Growth / Defensive Score

24 July 2020

Contents

Background 3
Step 1: Consider your scoring approach 3
Step 2: Apply the Scoring Process 4
Step 3: Total Portfolio Score 9
Step 4: Complete G/D Scoring Template 9
Appendix 1 – Special Cases 10

Background

This paper details how to calculate a fund's growth / defensive (henceforth "G/D") score based on the solution proposed for consultation by the working group. A range of resources (including papers, presentations, templates and models) can be found at the G/D resources page at www.TheConexusInstitute.org.au . For further detail of how the working group developed the proposed solution please refer to *"Detailed Paper: The Growth / Defensive Proposal"*.

Step 1: Consider your scoring approach

Sectors such as unlisted property and infrastructure, alternative assets and high duration bonds are more nuanced. Within these sectors there can be a large dispersion of exposure characteristics amongst investments within the sector. The working group has developed a range of detailed techniques to provide greater insight into these sectors (discussed in subsequent sections). This introduces operational complexity, which may be unwarranted if the exposure to the above-named sectors is immaterial.

The working group proposal includes a set of simple conservative scores which funds have the option to apply. The conservative nature of these scores makes it likely that funds adopting this approach will be overstating (to a relatively small degree) their growth exposure; this is effectively the 'cost' of adopting the simple approach. However, fund growth scores could also potentially be understated, something the working group is cognisant of. A simple materiality test flags when the risk of a sizable understatement exists.

Based on this set of simple conservative scores the extent of the possible understatement can be calculated. The working group proposes a materiality threshold relating to possible growth exposure understatement to be greater than 4%. If a fund's exposure to the above-named sectors exceeds 15% then there exists the possibility of material understatement. In this case the following options are open to the fund:

1. Adopt the detailed approach for all of the above-named sectors.
2. Adopt the detailed approach for some sectors and apply the simple approach for others to bring the materiality test below the threshold level (i.e. <15% exposure to nuanced sectors).
3. Apply the simple approach and have the score flagged by researchers and potentially APRA, as breaching materiality thresholds. Funds may be asked to provide research that proves materiality is not an issue.

Note that even if materiality thresholds are not breached, a fund always has the option to apply the detailed approach.

Step 2: Apply the Scoring Process

Scoring for investment sectors, across both simple and detailed approaches is detailed in Table 1.

Asset class / sector	Sub-asset class / sub-sector	Scoring - Simple	Scoring - Detailed
Australian equities	Includes Australian shares, Australian small-cap shares, Australian micro-cap shares, Australian low vol shares, and any sector exposure.	100% G	100% G
	Leveraged Australian shares (1)	Total exposure% G	Total exposure% G
Global equities	Includes global shares, global small-cap shares, global micro-cap shares, global low vol shares, emerging market shares, any global sector exposures, any individual country or regional exposure.	100% G	100% G
	Leveraged global shares (1)	Total exposure% G	Total exposure% G
Australian private equity	Includes leveraged buyout, growth equity and venture capital.	100% G	100% G
Global private equity	Includes leveraged buyout, growth equity and venture capital.	100% G	100% G
Listed property	Includes Australian LPT's, global REITs and regional / country REITs.	100% G	100% G
Unlisted property	Tier 1 risk (Australian or global) (2)	All unlisted property 80% G	60% G / 40% D
	Tier 2 risk (Australian or global) (2)		100% G
Unlisted infrastructure	Tier 1 risk (Australian or global) (2)	All unlisted infrastructure 80% G	60% G / 40% D
	Tier 2 risk (Australian or global) (2)		100% G
Alternatives	Includes emerging markets debt, hedge funds, tail risk hedge funds (3), alternative risk premia, multi-asset funds, risk parity, forestry, agriculture, commodities, catastrophe bonds, life settlements, insurance-linked strategies. (4)	All alternatives 75% G	Apply risk scaling approach
Credit	Australian investment grade (benchmark)	100% D	100% D

	Global investment grade (benchmark)	100% D	100% D
	Global high yield (benchmark)	70% G / 30% D	70% G / 30% D
	Global bank loans (benchmark)	60% G / 40% D	60% G / 40% D
	Distressed debt	100% G	100% G
	Other non-index credit (5)	70% G	Apply risk scaling approach (6)
Fixed interest	Australian Government (benchmark), Australian Composite (benchmark), Australian Inflation-Linked (benchmark)	100% D	100% D
	Australian FI – all other except high duration (7)	100% D	100% D
	Australian FI – high duration (7)	60% G / 40% D	Apply adjusted risk scaling approach (6)
	Global Government (benchmark), Global Composite (benchmark), Global Inflation-Linked (benchmark)	100% D	100% D
	Global FI – all other except high duration (7)	100% D	100% D
	Global FI – high duration (7)	60% G / 40% D	Apply adjusted risk scaling approach (6)
Cash and cash-enhanced	Cash at bank, bank bills, NCD's, term deposits, and cash enhanced strategies (8)	100% D	100% D

Table 1: G/D scoring system and asset class categorisation. Accompanying notes below.

(1) e.g. 150% exposure to stocks: 150% G.
(2) Risk tiers are specified in the Further Detail section.
(3) Tail risk hedge funds can be treated as 100% D when applying the detailed approach. They are to be included as part of the hedge funds category.
(4) Additional details for multi-asset funds and diversified alternative portfolios (including fund-of-hedge funds) are detailed in the Further Detail section.
(5) This includes public and private market credit, discussed in the Further Detail section.
(6) Further detail is provided in the Case Studies section.

(7) High duration is where the duration of the product / sector exceeds the following thresholds: (1) 10 years for nominal bonds and (2) 15 years for inflation-linked bonds.
(8) Where enhancement activities relate to selection of cash-like instruments, bank bills, NCD's and bonds. The use of other enhancement strategies would entail the strategy being assessed as if it were a member of that category (e.g. if enhanced using equities then assess as per Alternatives, if enhanced with credit then assess as per Credit).

In addition to the information in Table 1, we make the following additional notes:

- Currency exposure is not included in G/D calculations. This is addressed in the Further Detail section
- Derivatives are addressed in the Further Detail section
- The final portfolio score is a weighted sum of the scores of portfolio exposures

Risk Scaling

Risk scaling enables the G/D scoring of investments which sit somewhere between 100% D and 100% G. There are two approaches that can be applied to any given sector or sub-sector. The first approach (volatility-based) needs to always be considered. The second approach (drawdown-based) acknowledges where concerns exist that volatility may significantly mis-represent the drawdown risk of the investment.

Approach 1

- Calculate the expected volatility, accounting for both historical volatility and forward-looking characteristics
- Divide this calculated volatility by 12% to determine a G/D score

Approach 2

- Assess the worse-case drawdown over a period of 18 months (similar in length to the GFC). This should represent a conservative approach which acknowledges past performance (where possible) but accounts for forward-looking drawdown potential
- Divide this calculated drawdown by 50% to determine a G/D score

Approach 1 should always be considered. Approach 2 is an additional consideration, and optional. Good practice would be to consider it for strategies where concerns exist that the drawdown potential is greater than what the level of volatility may suggest (e.g. strategies which earn premium for insurance-like activities such as insurance-based strategies and structured credit). Approach 2 should only be used to reduce the G/D score relative

to Approach 1 when the lower drawdown-based score (compared to the volatility-based score) can be supported with fundamental reasoning (e.g. an embedded option protection strategy).

A range of examples are provided to assist.

Example 1

High yield credit. Annualised volatility is 9.9%, equating to a G/D score of 83% G. The largest drawdown was 34% during the GFC, equating to a 68% G score. We consider the drawdown a more appropriate measure in this instance as it captures the offset between fixed income duration and credit spreads during a crisis environment. The overall assigned score is 70%. This is how we determined the number provided in Table 2.

Example 2

A manager of alternative risk premia strategies offers the same underlying investment mix in two different products to reflect different volatility targets of 6% and 12%. This would equate to G/D scores of 50% G and 100% G for the two products.

Example 3

A hedge fund manager historically targeted 12% volatility. The manager's historical track record is consistent with this. However, the manager has now permanently changed their volatility target to 9% and this is evident in their portfolio exposure metrics. It is appropriate to reduce the G/D score from 100% G to 75% G.

Example 4

The manager of an equity-linked product has embedded a permanent derivative management strategy which ensures the product cannot lose more than 20%. Though the historical volatility of the product may be similar to traditional equity products, suggesting 100% G, the restricted loss potential means that 40% G (20% / 50%) is the appropriate G/D score to apply.

Example 5

A structured credit strategy exhibits very low volatility (2% annualised volatility) but could lose 20% in a worst-case scenario. While the volatility approach suggests a 20% G score (2% / 12% = 17%, and round up), the G/D score based on drawdown potential is larger at 40% G (20% / 50%). The conservative approach is to recognise the drawdown potential and so the appropriate score is 40% G.

Adjusted Risk Scaling

Adjusted risk scaling applies only to high duration bonds (and only bonds with an investment grade credit rating). It normalises for the risk in fixed interest indices deemed to be 100% D. The approach works as follows:

- Calculate the historical volatility of the portfolio (i.e. as per Approach 1 in the standard risk scaling approach)
- Calculate adjusted volatility by subtracting 5% (based off the highest degree of historical volatility amongst the traditional fixed income indices deemed to be 100% D)
- Divide the adjusted volatility by 12%
- Note that if the observed volatility is less than 5% then the G/D score is automatically 100% D

Example 1

A high duration bond portfolio with 12% historical volatility. The adjusted volatility score is 7% (12% - 5%). The G/D score is 7% / 12% = 58%, rounded to 60%.

Special Cases

A range of special cases are considered in Appendix 1. This includes:

- Unlisted real assets
- Unlisted property
- Unlisted infrastructure
- Further detail on credit
- Multi-asset funds
- Fund-of-hedge funds
- Leverage
- FX Exposure
- Derivatives

Step 3: Total Portfolio Score

The score is simply a weighted sum of the underlying sector G/D scores. We do not account for diversification benefits in the calculation of the portfolio G/D score.

Step 4: Complete G/D Scoring Template

To submit a G/D score, the following information needs to be provided:

- Investment sector
- Approach to scoring for the sector (simple or detailed)
- G/D score for each sector

Case studies of templates are included in the document *"Generic Templates for Growth / Defensive Asset Allocation"*.

Appendix 1 – Special Cases

Unlisted real assets

It is intuitive to expect the same underlying assets, once adjusted for leverage and fees, to deliver very similar long-term annualised returns whether listed or unlisted. This logic is supported by empirical research.

Further, the empirical evidence identifies that unlisted assets exhibit a lower volatility of returns, once we match assets and adjust for leverage. The difference in adjusted volatility levels is largely explained by differences in the basis of performance measurement. Whereas the performance of listed assets is based off public market prices on a near-continuous basis, the performance of unlisted assets is based on appraisal-based valuations. Note that there is evidence of a lead-lag relationship between listed markets and unlisted valuations, but the beta of the relationship is much less than one. Rather, a component of the additional volatility of listed assets may represent variability in the trading discount / surplus to NTA.

Two specific markets provide empirical datasets which allow us to explore this. The UK and US property markets provide a collection of indices, namely unlisted performance, REITs, and transaction-based indices. Perhaps unsurprisingly, transaction-based indices appear to far better reflect the scale of movements seen in unlisted vehicles, consistent with the application of appraisal-based valuation techniques.

However, due to the backwards-looking element appraisal-based valuations understate the volatility of unlisted property. Mathematically, this is known as autocorrelation (broadly, the correlation between performance with past performance). We account for this by estimating the autocorrelation-adjusted volatility[1]. Note that our research finds that this strong autocorrelation effect appears to only exist for unlisted property and not unlisted infrastructure.

We account for the autocorrelation effects when determining the G/D scores for unlisted property. We define two different risk categories for both unlisted property and unlisted infrastructure. The lower risk category ("tier 1 risk") is scored 60% G and the higher risk category ("tier 2 risk") 100% G. In the next sections we detail the categorisation process for unlisted property and unlisted infrastructure.

[1] Technically we assume an AR(1) model.

Categorising unlisted property

We identify two risk categories for unlisted property exposure, tier 1 risk (60% G) and tier 2 risk (100% G). The categorisation process is applied as follows:

- Firstly, it is applied to the aggregated characteristics of the entire unlisted portfolio sector. If the total aggregated portfolio characteristics meet the criteria for tier 1 risk, then a 60% G score can be applied to the entire unlisted property sector

- If this is not the case then the tests are applied on an exposure by exposure basis, where exposure is a direct holding in a property or a property vehicle (i.e. funds do not need to assess each property within property vehicles)

There are three characteristics which we use to categorise unlisted property exposure:

1. Leverage: LVR (loan-value ratio)
2. Value-add exposure: non-income producing investments as a % of property / vehicle gross asset value
3. Sector exposure: % gross asset exposure outside of office, retail, industrial, and multi-family

Categorisation is assessed by applying Test A first and then Test B, if required, with details provided in Table 2 below.

	Test A If meets all of these criteria, then apply Test B, otherwise tier 2 risk	**Test B** If meets at least two of these criteria, then tier 1 risk, otherwise tier 2 risk
Leverage	≤ 50%	≤ 30%
Value-add exposure	≤ 50%	≤ 20%
Sector exposure	≤ 50%	≤ 20%

Table 2: Categorisation tests for unlisted property.

Examples

A range of examples are provided in Table 3 to illustrate the various scenarios.

	Example 1	Example 2	Example 3	Example 4
Leverage	20%	20%	35%	55%
Value-add exposure	10%	25%	25%	10%
Sector exposure	15%	15%	15%	15%
Categorisation	Tier 1 risk	Tier 1 risk	Tier 2 risk	Tier 2 risk
Explanation	Meets all three criteria of Test B	Meets at least two criteria of Test B and passes Test A	Meets only one criteria of Test B	Fails Test A

Table 3: Examples displaying application of categorisation tests for unlisted property.

Categorising Unlisted Infrastructure

We identify two risk categories for unlisted infrastructure exposure, tier 1 risk (60% G) and tier 2 risk (100% G). The categorisation process is applied as follows:

- Firstly, it is applied to the aggregated characteristics of the entire unlisted infrastructure sector. If the total aggregated portfolio characteristics meet the criteria for tier 1 risk, then a 60% G score can be applied to the entire unlisted infrastructure sector

- If this is not the case then the tests are applied on an exposure by exposure basis, where exposure is a direct infrastructure holding or an infrastructure vehicle (i.e. funds do not need to assess each infrastructure asset within infrastructure vehicles)

There are five characteristics which we use to categorise unlisted infrastructure exposures:

1. Leverage: LVR (loan-value ratio)
2. Price-based revenue exposure: % of revenue sources with market-based pricing
3. Volume-based revenue exposure: % of revenue sources with volume-based pricing (i.e. patronage)
4. Asset stage: non-income producing investments as a % of asset / vehicle gross asset value

5. Geographical exposure: % revenues sourced from emerging markets (defined to be members of MSCI Emerging Markets Index)

Categorisation is assessed by applying Test A first and then Test B, if required, with details provided in Table 4 below.

	Test A If meets all of these criteria, then apply Test B, otherwise tier 2 risk	**Test B** If meets at least four of these criteria, then tier 1 risk, otherwise tier 2 risk
Leverage	≤ 80%	≤ 70%
Price-based revenue exposure	≤ 50%	≤ 20%
Volume-based revenue exposure	≤ 100%	≤ 80%
Asset stage	≤ 50%	≤ 20%
Geographical exposure	≤ 50%	≤ 20%

Table 4: Categorisation tests for unlisted infrastructure.

Examples

A range of examples are provided in Table 5 to illustrate the various scenarios.

	Example 1	Example 2	Example 3	Example 4
Leverage	60%	60%	75%	85%
Price-based revenue exposure	10%	30%	30%	10%
Volume-based revenue exposure	50%	50%	50%	50%
Asset stage	10%	10%	10%	10%
Geographical exposure	15%	15%	15%	15%
Categorisation	Tier 1 risk	Tier 1 risk	Tier 2 risk	Tier 2 risk
Explanation	Meets all five criteria of Test B	Meets at least four criteria of Test B and passes Test A	Meets only three criteria of Test B	Fails Test A

Table 5: Examples displaying application of categorisation tests for unlisted infrastructure.

Private Credit

In comparison to unlisted real assets, we do not assign differential scores to public and private debt with the same fundamental characteristics. This is because the two asset categories are far closer to being fungible – both represent directly held pieces of debt. Public credit typically trades as an institutional market and is often incorporated as a pricing input for the valuation of private credit securities. This is indicated as good practice by APRA (SPG 531) and was confirmed as standard practice by a super fund. In determining the appropriate G/D score of private credit, funds are expected to determine, using the risk scaling approach, the G/D score of the public market equivalent (by credit quality and duration), which is discussed in further detail below.

Public Credit

In Table 2 we detail G/D scores for the major investment grade indexes (domestic and global investment grade, global high yield, and global bank loans). Outside of the indices the approach to scoring is a little more complex and depends on the credit rating and duration characteristics of the exposure. Figure 4 details the approaches.

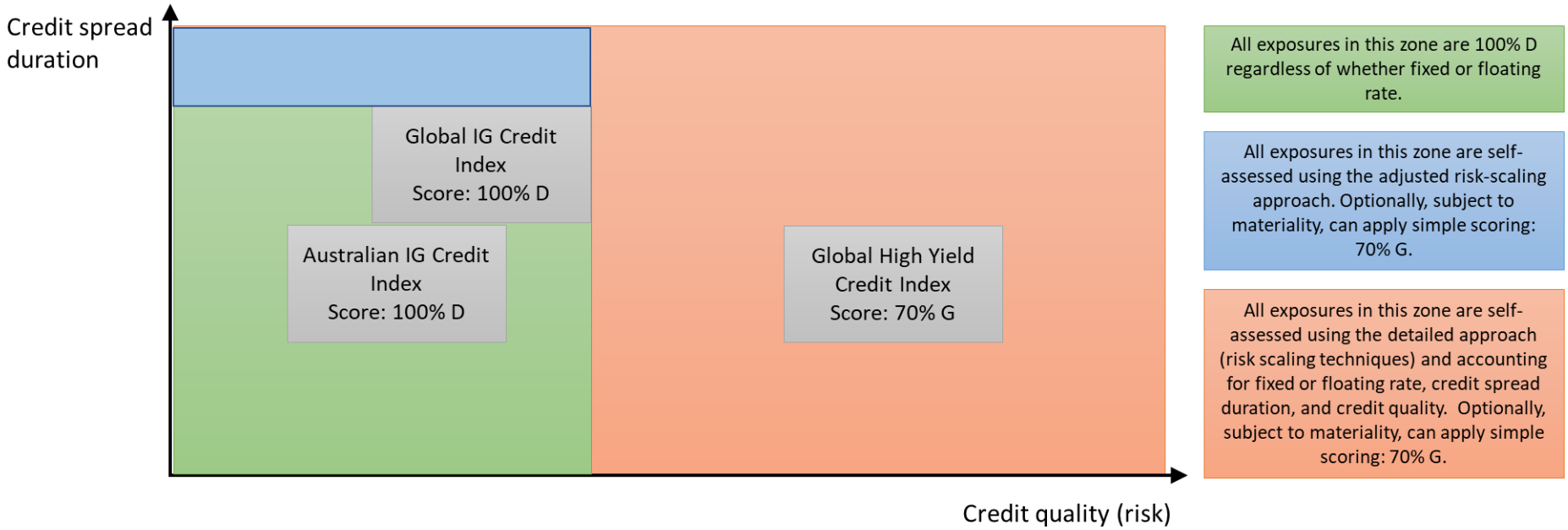

Figure 1: guide to scoring public market non-benchmark credit exposure.

To summarise Figure 1:

- For high duration investment grade credit, apply the adjusted risk-scaling approach (in the same way it applies to high duration fixed income)
- For all sub-investment grade credit, apply the standard risk scaling approach
- Assessment should account for whether the exposures are fixed or floating rate

Note that during the consultation process we will look to further research and develop a case study of G/D scoring curves (combinations of credit rating, credit duration, and fixed or floating characteristics).

Multi-Asset Funds

Multi-asset funds, by definition are funds which invest in multiple assets, commonly a combination of growth and defensive exposures. An important element of the G/D scoring framework proposed by the working group is that we do not recognise the diversification benefits between traditional growth and defensive elements of a portfolio. It is important that this element carries through to the treatment of multi-asset funds, otherwise we introduce gaming potential.

Multi-asset funds can be managed in many different ways – we identify two broad categories, which we describe in Table 6 below along with the proposed approach for G/D scoring.

Style	Characteristics	G/D Scoring Approach
1. SAA-anchored	Tend to be long-only invested and invest around a long-term SAA (whether explicitly or not).	Identify the G/D components of the SAA (implicit or explicit).
2. Macro hedge fund style	Fully flexible using techniques such as relative value trades, short-selling and leverage. No SAA anchor.	Apply the risk-scaling approach.

Table 6: Approach to multi-asset funds.

The difference in G/D scoring between the two style of multi-asset funds is to reduce the opportunity for gaming. Under G/D scoring no diversification benefits are allocated between traditional growth and defensive assets. It would not be appropriate then for an SAA-anchored multi-asset fund, undertaking activities reasonably similar to a super fund, to be allocated these benefits.

We provide two examples to illustrate application.

Example 1

A multi-asset fund tends to vary its asset allocation around a central weighting of 60% growth assets and 40% defensive assets. Though history demonstrates that the manager may vary its asset significantly, an appropriate score would be 60% G.

Example 2

A multi-asset fund is run like a global macro fund, using techniques such as short-selling and leverage. The manager targets a volatility of 7% over time and over a relatively short history (3 years) has experienced volatility of 6%. The conservative approach would be to score the manager as 60% G (7% / 12% = 58%, rounded up).

Diversified alternative portfolios including fund-of-hedge funds

It is not uncommon for super funds to invest into alternatives through asset manager provided multi-manager solutions. This could be within a single category (e.g. a fund-of-hedge-funds or multiple alternative risk premium (ARP) strategies) or across categories (e.g. a combination of hedge funds and ARP strategies).

To balance the operational demands of looking through a fund-of-funds vehicle in the Alternatives sector against the consistent approach of not incorporating diversification benefits into the calculation, the following approach is provided for fund-of-funds:

- Assess fund-of-funds at the whole of vehicle level using the risk scaling approach
- Multiply the final G/D score by 1.5, subject to a maximum of 100% G

A super fund can choose look through if it wishes to. Since we do not consider diversification benefits the sector score using this approach would be a weighted average of individual G/D scores. We acknowledge that this process requires some effort, though product providers and consultants would likely be able to assist funds with this information.

Leverage

Leveraged exposure to asset classes needs to be recognised, but only if the asset contains some growth component (i.e. not 100% D). For a leveraged exposure to an asset providing X% exposure to the underlying asset which has a growth score of Y% G, the scoring approach works as follows:

G = X% * Y%

D = X% * (100% - Y%) + (100% - X%) (the second component accounts for the cost of leverage, a defensive asset)

Note the accounting property that G% + D% = 100%. You cannot create or destroy exposure. Leveraged products generate exposure to one asset by borrowing, which generates an obligation or negative exposure to defensive assets. Therefore you do not need to formally calculate D%: it is simply 100% - G%.

Example

Consider the following example of a geared Australian share fund providing 200% exposure (so X = 200) to Australian shares (which have a 100% G score, so Y = 100). For the leveraged Australian share exposure we have:

G = 200% * 100% = 200%

D = 200% * (100% - 100%) + (100% - 200%) = -100%

or

D = 100% - 200% = -100%

FX Exposure

Currency is a complex area for asset allocators, portfolio managers and risk managers. Since currency is not an asset, it is a challenging component when it comes to the G/D categorisation project. The working group observes that super funds adopt different approaches to currency hedging, ranging from an asset class by asset class approach, to a whole-of-portfolio approach.

The working group typically expects foreign exposure to be less than foreign-denominated growth assets but more than the combination of foreign-denominated defensive and non-100% G assets. In such situations we consider that no adjustment is required for G/D portfolio scores.

The case where foreign currency exposure sits outside these ranges is interesting. The working group believes it introduces risk, but that G/D is not well placed to incorporate currency risk. As such we recommend that research houses and regulators consider using flags to identify these situations.

Derivatives

G/D is an exposure metric and not a risk-metric. While we use risk scaling to assist scoring some assets which are not 100% G or 100% D, we believe it is beyond the limits of G/D to fully reflect the non-linear pay-offs associated with some derivatives. Unfortunately, this means that the impact of some portfolio hedging strategies will not be fully recognised; this is simply a limitation of G/D as an exposure metric.

Derivatives are accounted for in the following manner:

1. Derivatives (i.e. futures, forwards and swaps) that provide full exposure to asset classes (hence known as "delta[2] one" derivatives) that are listed in Table 1: add the face value exposure to the appropriate sector in Table 1.
2. Delta one derivatives on asset classes that are not listed in Table 1: detail the exposures in "Alternatives: Other" and apply the risk scaling approach.
3. Options on asset classes: estimate the average expected delta and apply as per (1) and (2).

Case Studies

Case study 1 – Diversified retail fund

Table 7 details portfolio holdings for our case study.

[2] We note the delta of a derivative to be the standard definition: the sensitivity of the value of the derivative to changes in the value of the underlying reference asset.

		Diversified Retail Fund
Australian Shares		25%
Global Shares		25%
Global REITS		5%
Alternatives	Hedge Funds	5%
	Alternative Risk Premia	5%
High Yield Credit		5%
Domestic FI	Composite	12.5%
Global FI	Composite	12.5%
Cash		5%

Table 7: Diversified retail fund holdings.

Additional notes:

- Hedge funds: implemented through a fund-of-funds structure. The long-term volatility has been 4%, consistent with the manager's expectations. The vehicle experienced a drawdown of 15% during the GFC.
- Alternative risk premia: implemented through two products, equally sized exposures, targeting 6% volatility. Both products are relatively new and there is little insight that suggests that drawdown properties are different to those implied by volatility.

The results when we apply both the simple and detailed scoring approach are provided in Table 8.

		Diversified Retail Fund	Simple Score (G)	Detailed Score (G)
Australian Shares		25%	100%	100%
Global Shares		25%	100%	100%
Global REITS		5%	100%	100%
Alternatives	Hedge Funds	5%	75%	50% (1)
	Alternative Risk Premia	5%	75%	50% (2)
High Yield Credit		5%	70%	70%
Domestic FI	Composite	12.5%	0%	0%
Global FI	Composite	12.5%	0%	0%
Cash		5%	0%	0%
Total Growth Exposure			**66%**	**63%**
Total Defensive Exposure			**34%**	**37%**

Table 8: Diversified retail fund G/D calculations. Note additional comments below.

(1) Calculated using risk scaling and the fund-of-funds multiple: (4% x 1.5) / 12% = 50%. We took the conservative approach and viewed volatility as an appropriate estimate of risk.
(2) Calculated using risk scaling: 6% / 12% = 50%.

Can the simple approach be applied? Yes – the total exposure to nuanced sectors (in this case Alternatives) is 10% (i.e. less than 15%).

One observation from this example is that the overstatement of growth exposure by adopting a simple approach is 3%. This highlights the conservative scores incorporated into the simple approach, necessary to ensure the risk of material understatement is modest.

Case study 2 – Diversified industry fund

Table 9 details portfolio holdings for our case study.

		Diversified Industry Fund
Australian Shares		25%
Global Shares		25%
Unlisted Property		10%
Unlisted Infrastructure		10%
Domestic FI	Composite	12.5%
Global FI	Composite	12.5%
Cash		5%

Table 9: Diversified retail fund holdings.

Additional notes:

- Unlisted property: consists of three unlisted vehicles with the characteristics provided in Figure 2:

	Investment 1	Investment 2	Investment 3
Position Size (% of Property Portfolio)	30%	30%	40%
Global Exposure (position level):	20%	20%	0%
Australian Exposure:	24%	24%	40%
Global Exposure:	6%	6%	0%
Leverage (LVR):	30%	25%	25%
Value-add (%):	30%	15%	15%
Sector exposure (%):	15%	15%	15%

Figure 2: Characteristics of unlisted property portfolios for diversified industry fund case study.

- Unlisted infrastructure: consists of three unlisted vehicles with the characteristics provided in Figure 3:

	Investment 1	Investment 2	Investment 3
Position Size (% of Infra Portfolio)	30%	30%	40%
Global Exposure (position level):	20%	20%	0%
Australian Exposure:	24%	24%	40%
Global Exposure:	6%	6%	0%
Leverage (LVR):	50%	60%	50%
Price-based revenue exposure (%):	30%	15%	20%
Volume-based revenue exposure (%):	15%	15%	15%
Asset stage (%):	10%	40%	15%
Geographical exposure (%):	10%	30%	10%

Figure 3: Characteristics of unlisted infrastructure portfolios for diversified industry fund case study.

The results when we apply both the simple and detailed scoring approach are provided in Table 10.

		Diversified Industry Fund	Simple Score (G)	Detailed Score (G)
Australian Shares		25%	100%	100%
Global Shares		25%	100%	100%
Unlisted Property		10%	80%	60% (1)
Unlisted Infrastructure		10%	80%	72% (2)
Domestic FI	Composite	12.5%	0%	0%
Global FI	Composite	12.5%	0%	0%
Cash		5%	0%	0%
Total Growth Exposure			**66%**	**63%**
Total Defensive Exposure			**34%**	**37%**

Table 10: Diversified industry fund G/D calculations. Note additional comments below.

(1) Under the whole-of-portfolio test, the entire unlisted property portfolio can be categorised as Tier 1 Risk. The workings are provided in Figure 4 below (based on the calculation tool provided):

	Portfolio
Position Size (% of Property Portfolio)	100%
Australian Exposure:	88%
Global Exposure:	12%
Leverage (LVR):	27%
Value-add (%):	20%
Sector exposure (%):	15%
Leverage (LVR) Test:	
Value-add (%) Test:	
Sector exposure Test:	
Overall Categorisation:	Tier 1 Risk

Figure 4: Whole-of-portfolio test for unlisted property portfolio.

(2) Under the whole-of-portfolio test, the entire unlisted infrastructure portfolio can be categorised as Tier 1 Risk. The workings are provided in Figure 5 below (based on the calculation tool provided):

	Portfolio
Position Size (% of Infra Portfolio)	100%
Australian Exposure:	88%
Global Exposure:	12%
Leverage (LVR):	53%
Price-based revenue exposure (%):	22%
Volume-based revenue exposure (%):	15%
Asset stage (%):	21%
Geographical exposure (%):	16%
Leverage (LVR) Test:	
Price-based revenue exposure Test:	Failed Test 2 criteria
Volume-based revenue exposure Test:	
Asset stage Test:	Failed Test 2 criteria
Geographical exposure Test:	
Overall Categorisation:	Tier 2 Risk

Figure 5: Whole-of-portfolio test for unlisted infrastructure portfolio.

Accordingly, we apply the position-by-position approach. The assessment of each position is provided in Figure 6 and the overall calculation provided in Figure 7. Both figures are based on the calculation tool provided.

	Investment 1	Investment 2	Investment 3
Position Size (% of Infra Portfolio)	30%	30%	40%
Global Exposure (position level):	20%	20%	0%
Australian Exposure:	24%	24%	40%
Global Exposure:	6%	6%	0%
Leverage (LVR):	50%	60%	50%
Price-based revenue exposure (%):	30%	15%	20%
Volume-based revenue exposure (%):	15%	15%	15%
Asset stage (%):	10%	40%	15%
Geographical exposure (%):	10%	30%	10%
Leverage (LVR) Test:			
Price-based revenue exposure Test:	Failed Test 2 criteria		Failed Test 2 criteria
Volume-based revenue exposure Test:			
Asset stage Test:		Failed Test 2 criteria	
Geographical exposure Test:		Failed Test 2 criteria	
Overall Categorisation:	Tier 1 Risk	Tier 2 Risk	Tier 1 Risk

Figure 6: Position-by-position assessment of unlisted infrastructure portfolio.

	Tier 1 Risk	Tier 2 Risk
Australian Unlisted Infrastructure:	64.0%	24.0%
Global Unlisted Infrastructure:	6.0%	6.0%
Total Portfolio Score:	72%	

Figure 7: Infrastructure sector whole-of-portfolio test for unlisted infrastructure portfolio.

Can the simple approach be applied? Not without being flagged as there is 20% exposure to nuanced sectors (in this case unlisted property and unlisted infrastructure). We would recommend a more detailed approach is applied, either to one or both sectors (if the detailed approach is applied to one sector only the remaining exposure to nuanced sectors is 10%, less than the threshold level of 15%).

Case study 3 – Fund using high duration bonds

Table 11 details portfolio holdings for our case study.

		Fund with High Duration Bonds
Australian Shares		20%
Global Shares		20%
Unlisted Property		10%
Unlisted Infrastructure		10%
Domestic FI	Composite	12.5%
Global FI	Composite	12.5%
High Duration Global Bonds		10%
Cash		5%

Table 11: Diversified industry fund holdings.

Additional notes:

- The unlisted property and unlisted infrastructure sectors have the same characteristics as per case study 2.
- The high duration unlisted bonds are calculated to have an historical volatility of 10%.

The results when we apply both the simple and detailed scoring approach are provided in Table 12.

		Fund with High Duration Bonds	Simple Score (G)	Detailed Score (G)
Australian Shares		20%	100%	100%
Global Shares		20%	100%	100%
Unlisted Property		10%	80%	60%
Unlisted Infrastructure		10%	80%	72%
Domestic FI	Composite	12.5%	0%	0%
Global FI	Composite	12.5%	0%	0%
Global High Duration Bonds		10%	70%	42% (1)
Cash		5%	0%	0%
Total Growth Exposure			**63%**	**57%**
Total Defensive Exposure			**37%**	**43%**

Table 12: G/D calculations for fund with high duration bonds. Note additional comments below.

(1) Calculated using adjusted risk scaling: (10% - 5%) / 12% = 42%.

Can the simple approach be applied? Not without being flagged as there is 30% exposure to nuanced sectors (in this case unlisted property, unlisted infrastructure and high duration bonds). We would recommend a more detailed approach is applied, at least to a sufficient degree to remove the flag. In this example applying the detailed approach to two of the three sectors would result in the remaining exposure to nuanced sectors being 10%, less than the threshold level of 15%.

Case study 4 – Blended scoring techniques

Funds are allowed to blend scoring techniques. This allows a fund to provide detailed scoring on material sectors while potentially avoiding the operational impact of having to apply detailed scoring to all sectors.

Table 13 details portfolio holdings for our case study, which we label as a diversified industry fund with a small position in alternatives.

		Diversified Industry Fund with a Small Position in Alternatives
Australian Shares		25%
Global Shares		25%
Unlisted Property		10%
Unlisted Infrastructure		10%
Alternatives	Hedge Funds	1%
	Alternative Risk Premia	1%
Domestic FI	Composite	11.5%
Global FI	Composite	11.5%
Cash		5%

Table 13: Holdings of diversified industry fund with a small position in alternatives.

Additional notes:

- The unlisted property and unlisted infrastructure sectors have the same characteristics as per case study 2.
- The Alternatives have the same characteristics as per case study 1.

To achieve a balance between an accurate G/D score and operational impact, the fund decides to adopt the detailed approach for the sizable exposures to unlisted property and unlisted infrastructure and the simple approach for the small exposures to hedge funds and alternative risk premia.

The results when we apply both the simple and detailed scoring approach are provided in Table 14.

		Diversified Industry Fund with a Small Position in Alternatives	Simple Score (G)	Detailed Score (G)	Blended Approach Score (G)
Australian Shares		25%	100%	100%	100%
Global Shares		25%	100%	100%	100%
Unlisted Property		10%	80%	60%	60% (D)
Unlisted Infrastructure		10%	80%	72%	72% (D)
Alternatives	Hedge Funds	1%	75%	50%	75% (S)
	Alternative Risk Premia	1%	75%	50%	75% (S)
Domestic FI	Composite	11.5%	0%	0%	0%
Global FI	Composite	11.5%	0%	0%	0%
Cash		5%	0%	0%	0%
Total Growth Exposure			**68%**	**64%**	**65%**
Total Defensive Exposure			**32%**	**36%**	**35%**

Table 14: G/D scoring template (simple scoring) for diversified industry fund with a small exposure to alternatives.

Note that in the case above (Table 14) the fund would pass the materiality test if it applied the blended scoring approach (only 2% of the portfolio is scored using the simple approach).