

Fundamentals of beta

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Value Adviser Associates' clients may be interested in how we arrive at our equity beta assessments.

What approach do we use and why do we use this approach? Do we pass off adjustments as 'professional judgement' by plucking a figure off the computer screen or do we take the time to consider or 'ponder' how we arrive at the beta calculations?

Projects that the team work on often require analysis of the criteria used by other valuers to arrive at beta. In order for us to understand the process they use, we compare their criteria to the approach used by Value Adviser Associates. There have been some interesting results that have emerged.

There are a number of choices that need to be considered in assessing an appropriate equity beta from a peer group including total returns vs. price returns, monthly vs. weekly, two years vs. five years time horizon. The information following offers a little insight into why these are important and the differences which can emerge.

Case study

We recently advised a client on the value of a funds management subsidiary and discovered that the default Bloomberg/Reuters equity beta was showing a median of around 0.7.

This immediately struck us as being unlikely given the fundamentals of the funds management industry – we expected to see a number around 1.5.

On closer examination the difference lay principally in the fact that both Bloomberg and Reuters default to a two-year price-only basis of beta estimation.

This massive difference caused us to look more closely at the data providers' beta estimation approach and the outcomes are summarised below.

Total returns/ price returns

Total returns consider both price appreciation and dividends.

Price returns only consider the price appreciation.

Total return relates to variation of the relative risks of market.

The difference between the beta when using total returns and price returns may not be too great, however, total returns reflects all the gains a stock has earned over a period of time and is our preferred approach for beta estimation.

The following table highlights the difference in beta resulting from the use of price vs. total return estimates. The selected companies are all (broadly speaking) from the fund/wealth management community.

Table 1: difference between the median beta derived from price and total return measures

Name	5 Year Monthly		Diff ⁿ
	Price Return	Total Return	
Platinum Asset Management	0.7093	0.7385	(0.0291)
IOOF Holdings Ltd	1.2433	1.2369	0.0065
Perpetual Ltd	1.2145	1.2671	(0.0526)
BT Investment Management Ltd	1.4755	1.4465	0.0290
Hunter Hall International Ltd	1.7662	1.7415	0.0247
Treasury Group Ltd	1.8528	1.8395	0.0132
Australian Ethical Investment Ltd	1.1379	1.1789	(0.0410)
K2 Asset Management Holdings	2.3733	2.2976	0.0757
Magellan Financial Group Ltd	1.6708	1.6889	(0.0182)
Fiducian Portfolio Services	0.8925	0.9010	(0.0085)
HFA Holdings Ltd	3.5201	3.3492	0.1709
MEAN	1.6233	1.6078	
MEDIAN	1.4755	1.4465	

Monthly / weekly

Monthly data will be less noisy in terms of information related to trading than weekly data; making it a better criteria to arrive at long term beta (refer table 2).

Two years / five years

The statistical significance is an important factor when arriving at beta.

Value Adviser Associates recommends five years worth of data points to arrive at beta, as opposed to two years which will not contain enough trading data and a period over five years may not reflect the current market conditions (refer table 2).

An argument that is sometimes presented is that the GFC has been a one-off event and should not be included in the data set. However, there are regular market events which cause major changes in market capitalisation and the use of a two year term excludes the inevitability that there will be more such events in the future.

Dimson beta

Dimson betas are used to assess the impact of serial correlation in indices (which is caused by infrequent trading) on 5 year weekly and 5 year monthly betas. This shows that serial correlation has a significant impact on weekly betas, but no impact on monthly betas. Thus monthly betas are more accurate and are preferred (refer table 2).

Note: Our Dimson betas are computed by omitting missing data points, rather than using Bloomberg's standard approach to missing data.

Value Adviser Associates prefers five year monthly (i.e. 60 data points) total returns; however, the impact on beta through price returns instead of total returns is not significant. When compared two year weekly with five year monthly price returns, the weekly data is significantly impacted by thin trading. Hence, a reasonable alternative would be to calculate beta using five year monthly price returns.

Table 2: Beta Bridge

	Default Reuters data	Dimson beta calcs show monthly obs are more accurate	Beta increases over time shows 5 year window is better	VAA Preferred Approach	Dimson Beta
Periodicity	Weekly	Weekly	Monthly	Monthly	Weekly
Time Window	2 year	5 year	5 year	5 year	5 year
Return Type	Price Return	Price Return	Price Return	Total Return	Price Return
Overall Avg Eq Beta	0.8491	0.9713	1.4336	1.6078	1.5198
Overall Median Eq Beta	0.7593	1.0162	1.3594	1.4465	1.4465

Conclusion

Be wary of the default Bloomberg and Reuters beta estimates. They are not "wrong" per se but suffer some fundamental flaws which can be quickly and readily remedied. Both data providers use two-year price-only return measures as the default.

Our preferred approach is to use five-year total returns and adjust for thin trading if the companies are particularly thinly traded. The difference in outcome can be significant and result in some pretty wild valuation outcomes!

Call Thushani Fernando or Gareth Thompson if you would like help in changing the default settings in Bloomberg to get a better answer. 📞



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