
MARKET NOTICE

Johannesburg
Stock Exchange

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SUBJECT: SINGLE STOCK OPTION SKEWS

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Introduction

The skew adjustment in VIS has been summarised below, also attached. We refer to the previous [Market Notice 212/2019 Equity Derivatives Valuations Inputs](#) that was sent out discussing the implementation of a more sector specific skews. The Valuations team is working to implement this change along with the development team. In the meantime, an observation to a varying term structure of the skew and differences in steepness between the current generic skew and other market skews has led to the implementation of this change.

The largest discrepancies have been observed on the extreme points of the skews for all expiries. The changes will be implemented on Friday, 4 October 2019. The change is being implemented to address concerns that the current methodology applied is not the most appropriate approach to determining the closing price of certain listed derivative contracts.

This note explains the key methodology that has been flagged for review and provides the proposed amendment to the current methodology.

Single Stock Skew summary

As a result of past observations of the single stock options market the shape has been kept generic for all expiry dates (“Term to expiry”), this can be seen in the table below.

Generic Skew	XAxis	YAxis	ZAxis
1000484	All	0.3	0.1645
1000484	All	0.7	0.0613
1000484	All	0.85	0.028
1000484	All	0.95	0.0087
1000484	All	1	0
1000484	All	1.05	-0.0081
1000484	All	1.1	-0.0157
1000484	All	1.2	-0.029
1000484	All	2	-0.117

JSE will be introducing a dynamic skew (“single stock surface”) which will be updated on a weekly basis, similar to the local index skew updates which happen weekly, except for the weeks when liquid futures close out events occurs. The shape and term structure of this surface will inform the adjustments to the ATM strikes.

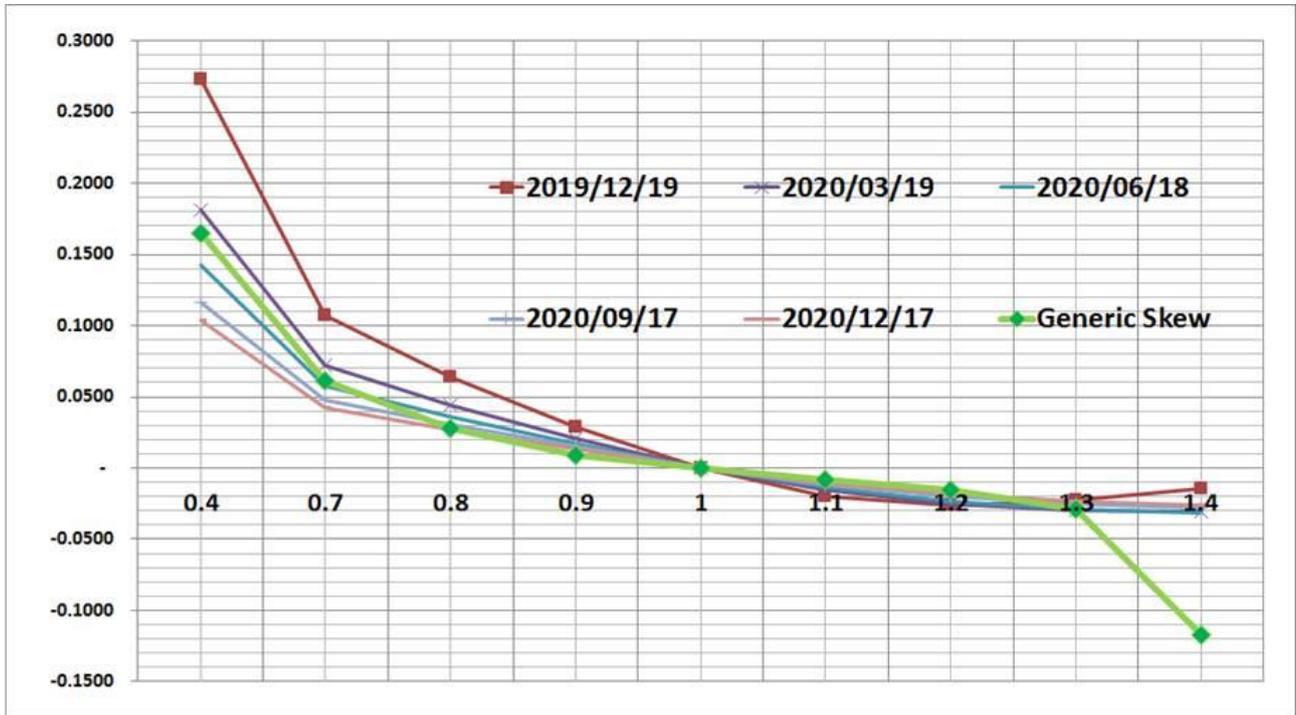
The methodology of the skew build is as follows:

- 1) A third party vendor provides the following skew data for various single stocks on a daily basis
- 2) We then calculate a **weighted arithmetic average of the volatility adjustments per moneyness**, as shown below.

Although not the most ideal solution that Valuations is looking to implement, this change moves away from the current static risk parameter towards a more realistic view of the general shape of the skew per expiry. We also acknowledge that a move towards more sector specific skews would be more ideal going forward. This will be developed and tested in the near future. The table below displays an example of one of the unique term to expiry shapes which is different from the current generic skew.

UniversalId	XAxis	YAxis	ZAxis
1000484	Unique Per (Term to Expiry)	0.4	0.3096
1000484	Unique Per (Term to Expiry)	0.7	0.1278
1000484	Unique Per (Term to Expiry)	0.8	0.07664
1000484	Unique Per (Term to Expiry)	0.9	0.03344
1000484	Unique Per (Term to Expiry)	1	0
1000484	Unique Per (Term to Expiry)	1.1	-0.01802
1000484	Unique Per (Term to Expiry)	1.2	-0.0185
1000484	Unique Per (Term to Expiry)	1.3	-0.0086
1000484	Unique Per (Term to Expiry)	1.4	0.0051

The graph below depicts the current single stock skew alongside the proposed single stocks skew for the following expiry dates: 2019/12/19; 2020/03/19; 2020/06/18; 2020/09/17; 2020/12/17. The only relatively large difference in the shape of the skew occurs at the wings where moneyness is less than 70% and greater than 130%.



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