



**RIZZO FARRUGIA**  
YOUR INVESTMENT CONSULTANTS

## **Rizzo Farrugia MGS Index**

Methodology

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## 1 - Introduction

This document explains the method of calculation of the Rizzo Farrugia MGS Index (MGS Index) as compiled by Rizzo, Farrugia & Co. (Stockbrokers) Ltd.

The Index is calculated on a daily basis and is available on [www.rizzofarrugia.com](http://www.rizzofarrugia.com)

## 2 – MGS Index Description

The MGS Index tracks the trend in Malta Government Stocks (MGS) prices based on the bid prices issued daily by the Central Bank of Malta Stockbroker prior to commencement of the trading session on the Malta Stock Exchange. The MGS Index is weighted by the amount outstanding of each constituent.

All MGS's issued by the Treasury of Malta are included in the MGS Index from the date of listing on the Malta Stock Exchange.

Constituents are removed when the Central Bank of Malta Stockbroker permanently suspends pricing due to an upcoming redemption.

The MGS Index was set at 1,000 points on 31 December 2008.

## 3 – Methodology

The formula used in the calculation of the MGS Index is as follows:

$$MGSIV_t = MGSIV_{t-1} \times \frac{\sum_{i=1}^n CBMBP_{i,t} \times OA_{i,t-1}}{\sum_{i=1}^n CBMBP_{i,t-1} \times OA_{i,t-1}}$$

where:

$MGSIV_t$	=	MGS Index Value at time $t$
$MGSIV_{t-1}$	=	MGS Index Value at time $t-1$
$CBMBP_{i,t}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t$
$CBMBP_{i,t-1}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t-1$
$OA_{i,t-1}$	=	Outstanding Amount of the $i^{th}$ Stock as per the Price List of the Malta Stock Exchange at time $t-1$

## 4 – Adjustments & Assumptions

### a) Additions

All Malta Government Stock issues are included in the MGS Index on the date of listing. When a new MGS is listed, the above-mentioned formula is adjusted as follows:



$$MGSIV_t = MGSIV_{t-1} \times \frac{\sum_{i=1}^n CBMBP_{i,t} \times OA_{i,t-1}}{(\sum_{i=1}^n CBMBP_{i,t-1} \times OA_{i,t-1}) + (\sum_{j=1}^n IP_j \times AI_j)}$$

where:

$MGSIV_t$	=	MGS Index Value at time $t$
$MGSIV_{t-1}$	=	MGS Index Value at time $t-1$
$CBMBP_{i,t}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t$ , including the newly added stock
$CBMBP_{i,t-1}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t-1$
$OA_{i,t-1}$	=	Outstanding Amount of the $i^{th}$ Stock as per the Price List of the Malta Stock Exchange at time $t-1$ , including the newly added stock
$IP_j$	=	Offer Price of the MGS being added (In the case of an issue by tender only, the weighted average price on accepted bids is used)
$AI_j$	=	Amount Issued with respect to the MGS being added

## b) Deletions

When the Central Bank of Malta permanently suspends pricing for a particular MGS due to an upcoming redemption, the respective MGS is removed from the Index and the formula is adjusted as follows:

$$MGSIV_t = MGSIV_{t-1} \times \frac{\sum_{i=1}^n CBMBP_{i,t} \times OA_{i,t-1}}{(\sum_{i=1}^n CBMBP_{i,t-1} \times OA_{i,t-1}) - (\sum_{j=1}^n CBMBP_{j,t-1} \times OA_{j,t-1})}$$

where:

$MGSIV_t$	=	MGS Index Value at time $t$
$MGSIV_{t-1}$	=	MGS Index Value at time $t-1$
$CBMBP_{i,t}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t$
$CBMBP_{i,t-1}$	=	Central Bank of Malta Bid Price for the $i^{th}$ Stock at time $t-1$
$OA_{i,t-1}$	=	Outstanding Amount of the $i^{th}$ Stock as per the Price List of the Malta Stock Exchange at time $t-1$
$CBMBP_{j,t-1}$	=	Last CBM Bid Price of the maturing stock before suspension.
$OA_{j,t-1}$	=	Latest amount outstanding of the maturing MGS before suspensions.

## c) Mergers

When a fungible issue of a MGS merges with another MGS with identical characteristics normally following an interest payment, this does not impact the value of the MGS Index. The MGS Index only reflects movements by bid prices. Therefore no action is taken other than adding the amount outstanding of the fungible issue to that of the original issue.

## d) Suspension of bid prices due to New Fungible Issue

When the Central Bank of Malta Stockbroker temporarily suspends pricing of a particular MGS due to a new fungible issue, the last bid price before suspension is assumed to remain constant for the duration of the suspension in the calculation of the MGS Index.



## 5 – Disclaimer

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Additional information can be made available upon request from Rizzo, Farrugia & Co. (Stockbrokers) Ltd., Airways House, Third Floor, High Street, Sliema SLM 1549. Telephone: +356 2258 3000; Telefax: +356 2258 3001; Email: [info@rizzofarrugia.com](mailto:info@rizzofarrugia.com); Website: [www.rizzofarrugia.com](http://www.rizzofarrugia.com)