

## WHAT IS THE DATASTREAM RESEARCH EXTRANET?

The Datastream Extranet is a Web-based support tool for Thomson Datastream's content and interfaces, with links to Thomson's extensive range of financial products. It offers:

- Details of content additions and revisions, along with up-to-date information on content issues
- Fully searchable access to Infostream back issues – for more detailed information on specific releases
- User and technical documentation for Datastream
- Sample spreadsheets illustrating how Datastream's content can be used
- Information on the product support available, including local helpdesk numbers and training options

You can also sign up, via the Extranet, to the Email Alerts service for product updates. This keeps you up-to-date with new content and functionality enhancements, as well as data issues. Visit <http://extranet.datastream.com> to register.

# Thomson Datastream

## Popular functions/expressions

These are examples of some of the most popular functions/expressions on Datastream, to give you a flavour of what can be calculated using the functions and expressions language. For more details on the individual functions, please refer to the Definitions for the Functions – selectable from the Advance and AFO menus.

### 1 PERCENTAGE CHANGE RELATIVE TO THE MARKET

$PCH\#(X/X(LI),1Y)$  – a 1-year percentage change relative to an index – where  $X(LI)$  is the market index for the equity (set up as global expression 898E). Time periods up to 14 years can be used.

### 2 HISTORICAL BETA

$REGB\#(LN\#(X/LAG\#(X,1M)),LN\#(Y/LAG\#(Y,1M)),60M)$  - the BETA factor over a 5-year period using monthly observations. The logarithmic monthly changes are used, with X used for the index and Y for the equity (set up as global expression 851E). This expression produces a "rolling" BETA ie each data point shows the BETA for the period up to that reading date.

**Note:** Different frequencies can be used eg weekly over 3 years – in this case replace 1M by 1W and 60M by 156W.

### 3 MOVING AVERAGE AND MOVING AVERAGE DIFFERENCE

$MAV\#(X,10D)$  – the (end-period) 10-day moving average of a time series.

$MAV\#(X,10D)-MAV\#(X,200D)$  – the difference between the 10 and 200-day moving averages ie short and long-term averages.

### 4 EXPONENTIAL MOVING AVERAGE

$EWA\#(X,0.4)$  – the moving average, but whereas the  $MAV\#$  function gives equal weight to each data point, the  $EWA\#$  function gives a higher weighting to the most recent value and declining weights to previous values, as determined by a weighting factor (0.4 in this example).

$EWA\#(X,0.15)-EWA\#(X,0.075)$  – the difference between 2 exponential weighted averages, is a popular technical expression, as it provides a dynamic indication of a change in trend. The value of this expression moving from negative to positive, ie the shorter-term moving average (the first EWA function) rising above the longer-term moving average, is a bullish indication. Conversely, a change from positive to negative indicates a bearish outlook.

### 5 ANNUALISED VOLATILITY AND STANDARD DEVIATION

$POW\#(250,0.5)*SDN1\#(LN\#(X/LAG\#(X,1D)),30D)$  – annualised volatility over a 30 (weekday) period (set up as global expression 840E).

**Notes:**  $POW\#(250,0.5)$  is the annualising factor with 250 the number of trading days in the year – if a different period/frequency is required eg weekly or monthly, the 1D and 30D need to be amended appropriately – for example –  $POW\#(52,0.5)*SDN1\#(LN\#(MKS/LAG\#(MKS,1W)),26W)$  is the annualised volatility over a 6-month period using weekly data. The LAG function in this expression shifts observations either backwards or forwards, in this case by 1 week forward.

$MAV\#(X,20D)+(2*SDN\#(X,20D))$  is another example of use of the standard deviation function, in this case to calculate the upper Bollinger band (set up as global expression 113E).

$MAV\#(X,20D)-(2*SDN\#(X,20D))$  calculates the lower Bollinger band (set up as global expression 114E) – this shows how the share price has moved in the "normal" range of 2 standard deviations.

**WHAT IS THOMSON DATASTREAM?**

Thomson Datastream is the world's largest and most respected historical financial numerical database, covering an unparalleled breadth of financial instruments, equity and fixed-income securities and indicators for over 175 countries and 60 markets worldwide. Datastream Advance brings Datastream's unrivalled content to your Windows desktop, through a fully-featured interface and a powerful set of add-ins, enabling integration with your MS Office applications.

For more information call the Helpdesk on:

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- Belgium:** +32 (2) 548 98 78
- Italy:** +39 (02) 8639 11 99
- Switzerland (Geneva):** +41 (44) 225 1838
- Switzerland (Zurich):** +41 (44) 225 1828

**6 HISTORICAL CORRELATION**

$CORR\#(LN\#(X(LI)/LAG\#(X(LI),1M)),LN\#(X/LAG\#(X,1M)),60M)$  – the correlation over a 5-year period using monthly observations. Logarithmic monthly changes are used, X is the equity and X(LI) is the market index for the equity (set up as global expression 841E).

**Note:** Different frequencies can be used.

**7 IBES REVISIONS RATIO**

$((X(A12UPE)-X(A12DNE))/X(A12NE))*100$  – represents the net revisions made by brokers for an IBES global aggregate index eg X = @:UKFT100 for the FTSE100 index for the 12-month forward rolling earnings estimate (set up as global expression 923E).

**8 ANNUALISED GROWTH RATE**

$GRFL\#(X(EPS),-10Y,)$  – the annualised 10 year growth rate for an equity's earnings using the values for 10 years ago and now (set up as global expression 924E). Specific dates can also be used eg  $GRFL\#(FTSE100(RI),31/03/05,30/09/05)$  gives the annualised total return for the FTSE100 from end March 2005 to end September 2005. Rolling annualised growth calculations can also be calculated eg  $GRFL\#(DJINDUS,3M)$  gives the annualised rolling 3-month growth in the Dow Jones index.

**9 CALENDAR PERIOD FUNCTIONS**

$CFQ\#(X,MAX)$  – the maximum figure in each quarter,  $CFQ\#(X,VAL)$  – the end-quarter figure in each quarter or  $CFQ\#(X,SDN)$  – standard deviation in each quarter. The calendar functions enable values such as averages, standard deviations, end period values, maximum or minimum values to be displayed for a week, month, quarter, half-year or year –  $CFW\#$  for weekly,  $CFM\#$  for monthly,  $CFH\#$  for half-year and  $CFY\#$  for year.

**10 ANALYSIS ON A LIST**

$LIST\#(LFRCAC40,ACH\#(X,1D),CTLT)$  – the number of fallers each day in the French CAC40. This function calculates (using Datastream functions) values for lists of series over a time period –  $LIST\#(list\ mnemonic, expression, operator)$  where operator must be one of the following:

CT	count of series in list
CTGT	count of series in list where the value of the expression is greater than zero
CTGE	count of series in list where the value of the expression is greater than or equal to zero
CTLT	count of series in list where the value of the expression is less than zero
CTLE	count of series in list where the value of the expression is less than or equal to zero
AVG	the average value of the expression for each series in the list
SUM	the sum value of the expression for each series in the list

**Note:** The global expressions can be selected directly from the "Expression picker" in Advance and AFO – by entering the expression number when the "By Name" tick box is ticked.

