# Data Definition of DataStream Data:

Daily Return (in 1 year prior) - Stocks and Index

### **VARIABLES THAT USE THIS DATA:**

From these daily returns, weekly aggregates have been calculated and these have been used for variables indicated with an asterix.

### For Index:

- Comove as an Unexplained Return Premium, Main Results: Comove\*, and Beta.
- Comove as an Unexplained Return Premium, Robustness Tests, Alternative Factor Measures:
  Comove\*, and Beta.
- Comove as an Unexplained Return Premium, Robustness Tests, Alternative Portfolio Aggregation:
  Comove\*, and Beta.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, Main variables: Comove\*, and Beta.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, Other Measurements of Dependency and Volatility: Downside beta, Upside beta, Lower tail dependence, Upper tail dependence, and Idiosyncratic Volatility.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, other benchmarks, fixed effects and skipped month: Comove with adjusted period\*.

# For Stocks:

- Comove as an Unexplained Return Premium, Main Results: Comove\*, Beta, and Return.
- Comove as an Unexplained Return Premium, Robustness Tests, Alternative Factor Measures:
  Comove\*, Beta, Market Premium, and Return.
- Comove as an Unexplained Return Premium, Robustness Tests, Alternative Portfolio Aggregation:
  Comove\*, Beta, and Return.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, Main variables: Comove\*, Beta, Momentum, and Return.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, Other Measurements of Dependency and Volatility: Downside beta, Upside beta, Lower tail dependence, Upper tail dependence, Idiosyncratic Volatility, Minimum Return, Maximum Return, and Illiquidity Ratio.
- Comove as an Unexplained Return Premium, Robustness Tests, Controlling for Fama and MacBeth regressions, other benchmarks, fixed effects and skipped month: Short-term momentum, Medium-term momentum, and Comove with adjusted period\*.

**DATATYPE**: X(RI)~E

## **COMMAND:**

For Index: For Index: = DSGRID("DJSTOXX";"RI";"1999-01-01";"2024-03-31";"MD;"RowHeader=true;ColHeader=true;Heading=true;Curn=true;DispSeriesDescription=true;YearlyTSFormat=false;QuarterlyTSFormat=false;MonthlyTSFormat=False";"")

For Stocks: = DSGRID.("LDJSTOXXMMYY", "X(RI)~E", "startDate", "endDate", "D", "RowHeader=true;TimeSeriesList=true;ColHeader=true;Transpose=true;DispSeriesDescription=false;Y earlyTSFormat=false;QuarterlyTSFormat=false;Clearself=y;MonthlyTSFormat=True")

- With MMYY the first month of each quarter, with the months ranging from 0102 until 0324.
- With startDate and endDate in YYYY-MM-DD format; startDate the first day of the year prior to MMYY and endDate the last day of two months after the MMYY. For example, for Jan 2002, 2001-01-01 and 2002-03-31.

**DEFINITION:** This is the theoretical absolute growth in value of a share holding over that day, assuming that dividends are re-invested to purchase additional unites of the stock at the closing price applicable on the ex-dividend date. Note that these "prices" are converted to euro.

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#### RI - Total Return Index

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Notes

A return index (RI) is available for individual equities and unit trusts. This shows a theoretical growth in value of a share holding over a specified period, assuming that dividends are re-invested to purchase additional units of an equity or unit trust at the closing price applicable on the ex-dividend date.

For all countries except the USA and Canada detailed dividend payment data is only available on Datastream from 1988 onwards. Up to this time the RI is constructed using the annualised dividend yield. This method adds an increment of 1/260th part of the dividend yield to the price each weekday. There are assumed to be 260 weekdays in a year, market holidays are ignored:

Method 1 (using annualised dividend yield)

RI on the basedate =100, then:

$$RI_t = -RI_{t-1} * \frac{PI_t}{PI_{t-1}} * \left(1 + \frac{DY_t}{100} * \frac{1}{N}\right)$$

Where:

 $RI_t$  = return index on day t

 $Rl_{t-1}$  = return index on previous day

 $PI_t$  = price index on day t

 $PI_{t-1}$  = price index on previous day

 $DY_t = dividend yield % on day t$ 

N = number of working days in the year (taken to be 260)

From 1988 onwards (and from 1973 for US and Canadian stocks), the availability of detailed dividend payment data enables a more realistic method to be used in which the discrete quantity of dividend paid is added to the price on the ex-date of the payment. Then:

Method 2 (using ex-dividend date)

$$RI_t = RI_{t-1} * \frac{P_t}{P_{t-1}}$$

except when t = ex-date of the dividend payment Dt then:

$$RI_t = RI_{t-1} * \frac{P_{t+} D_t}{P_{t-1}}$$

Where:

 $P_f$  = price on ex-date

$$P_{\mathrm{t-1}}$$
 = price on previous day

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