

## RELATIVE VARIANCE

### PURPOSE

Compute the relative variance of a variable.

### DESCRIPTION

The relative variance is:

$$\text{relvar} = 100 * (\text{variance} / |\text{mean}|)$$

Some analysts prefer to call this the percent relative variance and the value obtained without multiplying by 100 the relative variance. If this is your preference, simply divide the obtained value by 100 with the LET command. If you prefer to use the mean rather than the absolute value of the mean (DATAPLOT actually used this definition until 94/11), use the LET command to calculate the variance and the mean. This is not a commonly used command (the RELATIVE STANDARD DEVIATION command is preferred).

### SYNTAX

LET <par> = RELATIVE VARIANCE <y> <SUBSET/EXCEPT/FOR qualification>  
 where <y> is a response variable;  
 <par> is a parameter where the relative variance value is stored;  
 and where the <SUBSET/EXCEPT/FOR qualification> is optional.

### EXAMPLES

```
LET RELVAR = RELATIVE VARIANCE Y1
LET RELVAR = RELATIVE VARIANCE Y1 SUBSET TAG > 2
```

```
LET M = MEAN Y1
LET V = VARIANCE Y1
LET RELVAR = 100*(M/V)
```

### DEFAULT

None

### SYNONYMS

None

### RELATED COMMANDS

MEAN	=	Compute the mean of a variable.
VARIANCE	=	Compute the variance of a variable.
STANDARD DEVIATION	=	Compute the standard deviation of a variable.
RELATIVE VARIANCE PLOT	=	Generate a relative variance versus subset plot.
RELATIVE STANDARD DEVIATION	=	Compute the relative standard deviation of a variable.

### APPLICATIONS

Exploratory Data Analysis

### IMPLEMENTATION DATE

Pre-1987 (definition changed 94/11 to use absolute value of the mean)

### PROGRAM

```
SKIP 25
READ GEAR.DAT DIAMETER
LET RELVAR = RELATIVE VARIANCE DIAMETER
```

The computed relative variance is 0.0039.