EXPECTED LOSS PLOT

PURPOSE
Generates a subsample expected loss versus subsample index plot.

DESCRIPTION
The subsample expected loss index is the expected loss of the data in the subsample. The expected loss computes the number of defectives for a variable (i.e., the number of values that fall outside of some user specified tolerance limits) and multiplies that by some user specified cost. The expected loss plot is used to answer the question: “Does the subsample expected loss index change over different subsamples?” The plot consists of:
- Vertical axis = subsample expected loss index;
- Horizontal axis = subsample index.

In addition, a horizontal line is drawn representing the full sample expected loss value. As usual, the appearance of the 2 traces is controlled by the first 2 settings of the LINES, CHARACTERS, SPIKES, BARS, and similar attributes.

SYNTAX
EXPECTED LOSS PLOT <y> <x> <SUBSET/EXCEPT/FOR qualification>
where <y> is the response (= dependent) variable;
<x> is the subsample identifier variable (this variable appears on the horizontal axis);
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES
EXPECTED LOSS PLOT Y X
EXPECTED LOSS PLOT Y X SUBSET X = 4 TO 10

NOTE
The upper and lower specification limits must be specified by the user as follows:
- LET USL = <value>
- LET LSL = <value>

The cost value must be specified as follows:
- LET USLCOST = <value>

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS
- CHARACTERS = Sets the type for plot characters.
- LINES = Sets the type for plot lines.
- CP PLOT = Generates a $C_p$ plot.
- CPK PLOT = Generates a $C_{pk}$ plot.
- PERCENT DEFECTIVE PLOT = Generates a percent defective plot.
- CAPABILITY ANALYSIS = Performs a process capability analysis.
- BOX PLOT = Generates a box plot.
- XBAR CHART = Generates a mean control chart.
- PLOT = Generates a data or function plot.

APPLICATIONS
Quality Control

IMPLEMENTATION DATE
93/10
PROGRAM
    SKIP 25
    READ GEAR.DAT DIAMETER BATCH

    TITLE CASE ASIS
    LABEL CASE ASIS
    TITLE Gear Diameter Analysis
    Y1LABEL EXPECTED LOSS
    X1LABEL Batch
    LEGEND 1 Process Capability
    LEGEND 2 EXPECTED LOSS Plot
    XTIC OFFSET 0.5 0.5
    CHARACTER X BLANK
    LINE BLANK SOLID

    LET LSL = 0.98
    LET USL = 1.02
    LET USLCOST = 15

    EXPECTED LOSS PLOT Diameter Batch

![Gear Diameter Analysis Graph](image-url)