Hints on using Excel for mean-variance analysis, distributed 9/29/03

To invert a square matrix $M$, use the operation MINVERSE:

(a) if $V$ is $n \times n$, select (i.e. highlight) a fresh block of $n \times n$ entries into which the product will go

(b) choose f* ("paste function") from the toolbar or from the "insert" pulldown menu

(c) you want the math/trig function MINVERSE

(d) identify the matrix to be inverted, using your mouse

(e) hit (simultaneously) control-shift-enter to compute the inverse matrix

To multiply a matrix $M$ times a vector $v$:

(a) if $M$ is $m \times n$ and $v$ is an $n$-vector, the product will be an $m$-vector. Start by highlighting a column of $m$ blocks, into which the product will be put

(b) proceed as above, but use the math/trig function MMULT

To take the inner product of two vectors:

(a) the product will be a scalar, so start by highlighting just one box

(b) use the math/trig function SUMPRODUCT

To evaluate the variance quadratic form:

(a) the product is still a scalar, so you start by highlighting just one box

(b) you still use the math/trig function SUMPRODUCT, but one argument is a matrix product (you can’t enter this with your mouse alone – you’ll have to type something like MMULT(A1:E5,I7:I11) for one argument of SUMPRODUCT).

To take a standard deviation: notice that the notation for exponentiation in Excel is $\wedge$. Thus std dev = (variance)$\wedge$0.5