Calculating Periodic Returns and Compound Annual Returns

You can follow the performance of the G, F, C, S, I, and L Funds by obtaining the daily share prices from the TSP Web site (www.tsp.gov) or the ThriftLine (1-877-968-3778 or, outside the United States and Canada, 404-233-4400). To calculate rates of return for any given period of time or to determine compound annual returns, follow the instructions in this Fact Sheet.

Period Returns

The percent change in the share price of a given fund from the end of a prior period (e.g., day, week, month, or year) to the end of the current period is the rate of return for that period. The following example shows how to calculate a monthly rate of return. You can use this method to calculate the return for any length of time.

Calculation of the monthly return for the C Fund for July 2005:

Month-end Share Price

June 30, 2005	12.81
July 31, 2005	13.28 (from Friday, July 29)

Percent Change = $[(13.28 - 12.81)/12.81] \times 100 = 3.67\%$

Monthly Return = 3.67%

Compound Annual Returns

The Board provides compound annual returns when showing investment performance for 10 years. The compound annual return represents the geometric average annual return for the period. An example of the 4-step calculation using the S&P 500 index returns from 1995 through 2004 is provided on the back of this page.

(Continued on back)

Step 1: Convert percentages to decimals (move the decimal point two places to the left) and add 1 (You must add 1 to the returns and multiply the resulting factors together (see **Step 2**) to include the effect of compounding. Calculating the simple average (adding the returns and dividing by 10) ignores the effect of compounding.):

1995	37.58%	=	.3758 + 1 =	1.3758
1996	22.96%	=	.2296 + 1 =	1.2296
1997	33.36%	=	.3336 + 1 =	1.3336
1998	28.58%	=	.2858 + 1 =	1.2858
1999	21.04%	=	.2104 + 1 =	1.2104
2000	(9.10%)	=	−.0910 + 1 =	.9090
2001	(11.89%)	=	−.1189 + 1 =	.8811
2002	(22.10%)	=	−.2210 + 1 =	.7790
2003	28.69%	=	.2869 + 1 =	1.2869
2004	10.88%	=	.1088 + 1 =	1.1088

Step 2: Multiply the factors you calculated in **Step 1** together:

1.3758 x 1.2296 x 1.3336 x 1.2858 x 1.2104 x
.9090 x .8811 x .7790 x 1.2869 x 1.1088 = 3.1259

Note: If you subtract 1 from the result of this step (3.1259 – 1 = 2.1259), and multiply by 100 (2.1259 x 100 = 212.59%), you get the *cumulative return* for the period.

Step 3: Take the nth root (where n equals the number of years in the period) of the result of Step 2:

$$\sqrt[10]{3.1259} = 1.1207$$

Step 4: Subtract 1 from the result of **Step 3** and multiply by 100:

(1.1207 – 1) x 100 = .1207 x 100 = 12.07%

12.07% equals the compound annual return for the S&P 500 index for 1995-2004. You may get slightly different results because of rounding.