Assignment due 29 September 1999

1. Find the present value under continuous compounding of the discrete cash flow $F_n = A$, $n = h, h + 1, \ldots, h + k$ if the nominal interest rate per period is $r$. Compute the present value for $A = 25,000, h = 18, k = 4$, and $r = 8\%$.

2. Find the present value under continuous compounding of the discrete cash flow $F_n = Ae^{(n-h)}$, $n = h, h + 1, \ldots, h + k$ if the nominal interest rate per period is $r \neq g$? If $r = g$? Compute the present value for $A = 25,000, h = 18, k = 4$, $r = 8\%$, and $g = 6\%$.

3. Find the present value under continuous compounding of the continuous cash flow $F_t = Ae^{(t-t_0)}$ over $t \in [t_0, t_1]$ if the nominal interest rate per period is $r \neq g$. If $r = g$? Compute the present value for $A = 25,000, t_0 = 18$, and $t_1 = 22$, $r = 8\%$, and $g = 6\%$.

4. What is the average inflation over two years if $f_1 = 10\%, f_2 = -10\%$?

5. The inflation over four consecutive quarters is $f_1 = 1\%, f_2 = 0.5\%, f_3 = -0.5\%, f_4 = 1\%$. What is the inflation for the entire year?

6. What is the effective real interest rate per year if the nominal monthly interest rate is $r = 1\%$ and the monthly inflation rate is $f = 0.5\%$?