HW5

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8.1

By definition, we have $D = -\frac{1}{P}\frac{\Delta P}{\Delta y}$ and

$DV01 = -\Delta P$

For $\Delta y = 0.01\%$, we have $D = \frac{1}{P}\frac{DV01}{0.01\%}$

$\therefore \quad D \times P = DV01 \times 10,000$

If we set face value to be 100, then we have

$D \times P = F \times DV01 \times 100$

8.2.

$\because$ yield of "6.5s of Aug 15, 2004" is assumed to move 0.4619 basis points for every basis point move of the "6s of May 15, 2011".

Let Bond2 be "6s of May 15, 2011".

Let bond2 be [illegible] of [illegible],

F_{bond2} be the face value for this bond,

then we have

$$10{,}000{,}000 \times \left(\frac{2.796}{100}\right) \times (0.9619) = F_{bond2} \times \frac{7.499}{100}$$

$$\therefore \; F_{bond2} = \$3.5864m$$

$\Rightarrow$ We have to short \$3.5864m of bond2

to hedge \$10m face value position of

"6.5s of Aug 15, 2004".