

# EXAM FM QUESTIONS OF THE WEEK

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## Week of October 29/07

The current price of platinum is \$1400 per ounce. The current term structure of interest rates has annual effective yield rates for one and two year zero coupon bonds at 5% and for zero coupon bonds maturing in 3 or more years the annual effective yield rate is 5.5%.

A purchaser of platinum wishes to arrange a one year forward swap of platinum, with 1000 ounces to be received at the end of each of 2, 3 and 4 years. Find the level swap price to be paid at the end of 2, 3 and 4 years.

**The solution can be found below.**

## **Week of October 29/07 - Solution**

We wish to find  $P$  so that the present value of 3 level payments of  $P$  each at the end of 2, 3 and 4 years has the same present value as 1000 ounces of platinum to be bought at the end of each of 2, 3 and 4 years. The present value of the 3000 ounces of platinum is today's price, which would be  $\$1400 \times 3000 = \$4,200,000$ . The present value of the level swap payments is  $P \times \left( \frac{1}{1.05^2} + \frac{1}{1.05^3} + \frac{1}{1.05^4} \right) = 2.565860P$ . Solving for  $P$  from  $2.565860P = 4,200,000$  results in  $P = 1,636,878$ .