**Price Value of a Basis Point**

Price value of a basis point (PVBP) = Dollar Value of an 01 (DV01)

The **dollar change** in the price of a bond that is associated with a one basis point change in the bond’s yield.

A bigger price value of a basis point means a bigger move in the bond’s price due to a given change in interest rates.

PVBP is a way of measuring price sensitivity in dollars just as duration measures price sensitivity in percentages

To find the price change for a 1% change in yield:

C = Dollar amount of coupon payments made in a year

N = # of coupon payments remaining (not # of years)

Y = BEY as a decimal

Based on Par = 100

Example: For a 40 yr. Bond with 10% coupon rate and 9% yield:

C=10

N=80

Y=.09

Solving the above equation, it has a price change of $11.86.

If Δy = 1%, Δp = $11.86

PVBP (Price Value of a Basis Point) = Δp

 100

This is the change in price for a single basis point change when par = 100.

Previous Example: PVBP = $11.86 = $ 0.1186 = 11.86 cents

 100

If interest rates change (in either direction) by 1 bp, the bond’s price will change (in the opposite direction) by approximately 11.86 cents.

PVBP is sometimes expressed in dollars per million where:

 PVBP ($/million) = Δp ⋅ 100

Previous Example:

PVBP ($/million) = ($11.86) (100) = $1,186 per million

So if interest rates change (in either direction) by 1 bp, the price of a $1 million (face value) bond will change (in the opposite direction) by approximately $1,186

Remember:

Δp is the price change of a bond with a par value of 100 when there is a 1% change in the yield.

PVBP is the price change of a bond with a par value of 100 when there is a .01% (one basis point) change in the yield.

PVBP ($/million) is the price change of a bond with a par value of $1,000,000 when there is a .01% (one basis point) change in the yield.

**Calculating PVBP for a Portfolio**

PVBPp = Σ ni PVBPi/100

Where ni = face value of security i

1. Find the PVBP for each security in the portfolio and divide each one by 100.
2. Multiply the PVBP/100 for each security by its face value and sum the total

Note that when the market value of a portfolio is higher, the PVBP is greater. This makes sense since it is a measure of the dollar change in value. You will get bigger dollar changes for bigger portfolios.