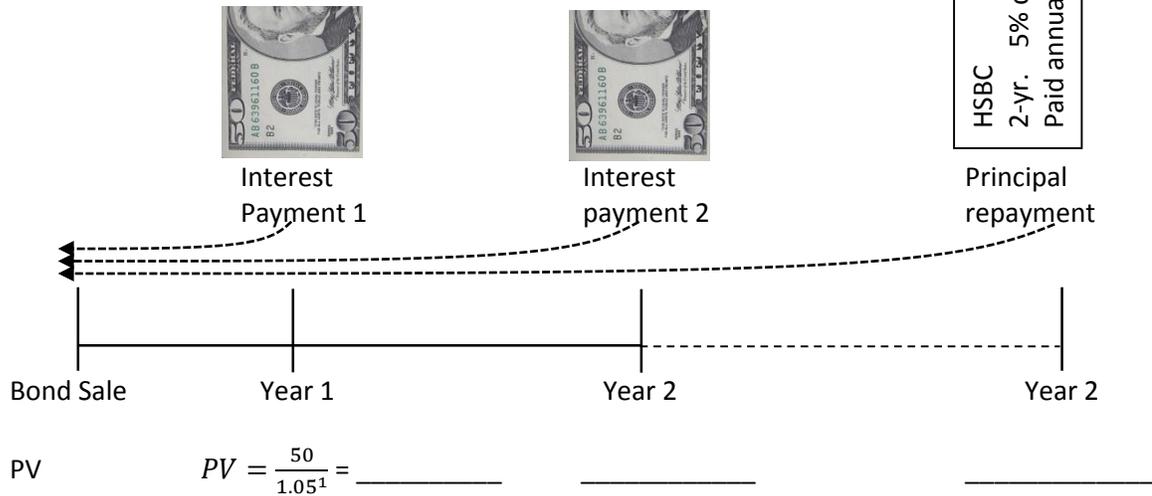


Simpson bought a 2-year, \$1000 face value, 5% coupon bond from HSBC, a bank.

Find the PV of the future cash flows related to Simpson's bond.



Note: This bond will always pay \$50 per year, not matter what happens to the market rate of interest.

What is the present value of the Year 1 payment today?

What is the present value of the repayment of the principal today?

Find the sum of the PVs:

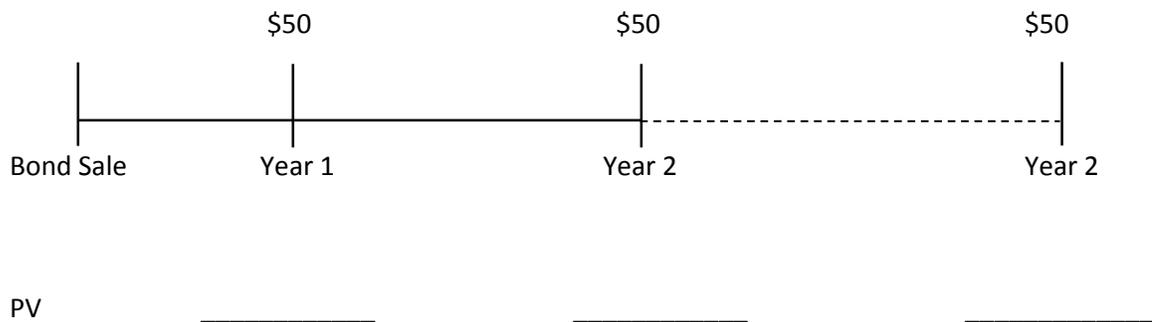
The sum of the PVs establishes the price of the bond.

Interpret the PV: If you invested \$47.62 cents at 5% for one year, you would have \$50 at the end of the year.

$$FV = 47.62 \times 1.05^1 = 50$$

Assume the market interest rate changes to 2.5%. Simpson's money is locked in working at 5%. If you invested money alongside him, yours would only work at 2.5%. You would want the bond he has because his money is working harder, gaining more. Other people would want it too. Demand would increase (more buyers in the market). Price would go up. What is a fair price?

Discount the Cash flows to find their PV using the market interest rate of 2.5% in the denominator:



Find the sum of the PVs. The price of a 5%, 2-year bond in a 2.5% market is: _____

What would have happened to each of the three cash flows in the original 5% bond on side 1 if the market interest rate had gone up to 9%?

	<u>Payment 1</u>	<u>Payment 2</u>	<u>Repayment of Face Value</u>
Original:	\$47.62	\$45.35	\$907.03
9% interest	_____	_____	_____

Using the work above, find the price of a 5%, 2-year bond in a 9% market.

Price: _____

Write a short explanation as to why this work makes sense.

Bond Portfolios and Interest Rates

Mentally switch to zero-coupon bonds. Find the original price of the bond at right:

New Jersey Transit	\$1000
10-yr.	4.3% rate
Zero-coupon	

If someone offered you \$600 for this bond, would you accept? Why?

Assume you bought 5000 of these bonds. How much did you loan the State of New Jersey?

One year after you bought the bonds, determine the value of your entire position of 5000 bonds.

Two years after you bought the bonds, the interest rate on these bonds is going to change. Would you prefer the rate increases or decreases? Why?

Two years after you bought the bonds, determine the value of your entire position at the original 4.3% rate.

What if the rate had gone up to 5%? How much value did you gain/lose based on the change in rate?

What if the rate had gone down to 2.0%? How much value did you gain/lose based on the change in rate?

Circle one: Bondholders see their positions increase in value when market interest rates increase / decrease.