29 CREDIT DEFAULT SWAPS

Idrissa Sylla and Joel Lynch both work for Kazenga Asset Management. The fund made losses on fixed income securities during the 2008 credit crunch and is keen to minimize the risk of losses due to credit events going forward. Sylla and Lynch have been tasked with writing a report on the hedging of credit risk for the firm's investment committee. Extracts of their report are included below.

INTRODUCTION:

Credit Default Swaps (CDS) have the advantage of allowing the investor to separate credit risk and interest rate risk. Purchasing a CDS allows us to go long only the bond's credit risk.

A single-name CDS allows us to purchase credit protection for a single reference entity. Typically, the reference obligation for a single-name CDS is a senior unsecured bond. Interestingly there is a payoff not only when the reference obligation defaults but when any bond of the issuer that ranks pari passu with the reference obligation defaults.

The payoff received on a default will be the par value (notional principal) of the reference obligation less the value of the reference obligation after the credit event. Settlement after a credit event will either be physical delivery of the cheapest to deliver bond or alternatively a cash settlement.

Illustration CTD:

A credit event occurs for a single-name CDS with a three-year, senior bond as the reference obligation. The notional principal is $15m. Exhibit 1 shows bonds currently outstanding for the reference entity.

Exhibit 1: Current Market Price of Reference Entity Bonds

Bond Type	Price
Bond Q: Subordinated unsecured 5-year maturity	30% of par
Bond P: Senior unsecured 2-year maturity	45% of par
Bond R: Senior unsecured 3-year maturity	50% of par

Value after Inception of CDS:

At initiation of a CDS, the CDS spread depends on the credit quality of the reference obligation at that point. Subsequent changes in credit quality of the reference obligation result in a gain or loss for the CDS holder. Entering an offsetting contract can monetize this gain (or loss). Exhibit 2 shows an illustration.

Exhibit 2: Illustration

Notional principal covered £36,000,000			
	Coupon rate	Duration	Upfront Premium
At initiation	1%	5	5%
1 year later	1%	4	8%

The Credit Curve:

The credit curve is the relationship between credit spreads and bond maturities for the same reference entity. Longer maturity bonds typically have a higher credit spread than shorter maturity bonds.

An investor purchases a 'naked' CDS when the investor does not hold the reference obligation. Essentially, it is a pure bet on the credit prospects of the bond issuer. If we believe the credit quality of the issuer will deteriorate and hence the credit curve steepens, we should take a short position in the CDS.

A curve trade is a type of long/short trade where the investor buys and sells protection on the same reference entity but with a different maturity. For example, if we were concerned about the credit risk in the short term but felt the entity's long term prospects were stronger, we would sell protection in a short maturity CDS and buy protection in a long maturity CDS. The improvement in the credit quality over time should cause the credit curve to flatten, resulting in a profit on the strategy.

1. Suppose that an investment-grade bond's five-year credit spread is 175 bps, and the duration of the associated CDS is four years. Assuming a 1% CDS coupon, the upfront premium (expressed as a percentage of the notional) required to purchase five-year CDS protection on the company's debt will be closest to:

   (A) 3%

   (B) 4%

   (C) 8%

   Peter Nathan an asset manager for a hedge fund and looking to include credit default swaps (CDS) in the portfolio.

   Nathan wants to know more about credit default swaps (CDS). He read a report that explained the characteristics of these products and the pricing theory. The report

contained the following:

Comment 1:	In a CDS, the protection buyer is long the credit risk of the reference entity.
Comment 2:	In an index CDS, the lower the credit correlation, the cheaper the premium.

Nathan owns some intermediate-term bonds issued by ABC Company and has become concerned about the risk of a near-term default, although he is not very concerned about a default in the long term. ABC Company's two-year duration CDS currently trades at 400 bps, and the five-year duration CDS is at 700 bps.

Nathan evaluates the bonds of VAX and believes that some trading opportunities exist. The VAX bonds are currently trading at 260 bps above MRR in an asset swap, while the CDS premium is 200 bps.

2. Which of the following best describe Comments 1 and 2?
   (A) Both comments are correct.
   (B) Both comments are incorrect.
   (C) Only one of the two comments is correct.

3. Assume that Nathan sells $400 million of protection on the equally weighted CDX IG index which consists of 125 entities. Concerned about the creditworthiness of an entity A, he purchases $2 million of single-name CDS protection on entity A. What is the investor's net notional exposure to Company A?
   (A) $1.2 million.
   (B) $3.2 million.
   (C) $2.0 million.

4. Describe a potential curve trade that Nathan could use to hedge the default risk of ABC Company.
   (A) Nathan should position himself short in the short term CDS and short in the long term CDS.
   (B) Nathan should position himself long in the short term CDS and short in the long term CDS.
   (C) Nathan should position himself short in the short term CDS and long in the long term CDS.

5. The most appropriate trade for the VAX bond is:
   (A) short the VAX bonds and buy the CDS.
   (B) long the VAX bonds and buy the CDS.
   (C) long the VAX bonds and sell the CDS.

6. Gill Westmore is the fixed income portfolio manager for Allied Insurance. Westmore has bought protection using a 2-year CDS on CDX-IG (125 constituent) index. The notional is $200 million. Company X, an index constituent defaults and trades at 25% of par.

The payoff on the CDS on account of default of X and the notional principal of the CDS after default are closest to:

	Payoff	Notional
(A)	$1.6 million	$200 million
(B)	$1.5 million	$198 million
(C)	$1.2 million	$198.4 million

7. Considering the two parties to a credit default swaps (CDS), the protection buyer is most likely to be:

(A) said to be long the reference entity's credit risk.

(B) exposed to the credit risk of the protection seller.

(C) bullish on the financial condition of the reference entity.

8 5-year, 5% Zillon Corp. bonds currently trade at $980 reflecting credit spread of 3%. A 5-year CDS for Zillon bonds has a coupon rate of 5%. The duration of the CDS = 4.

The upfront payment made/received by the protection buyer on a $4 million notional CDS is closest to:

(A) $400,000 received by the protection buyer.

(B) $320,000 received by the protection buyer.

(C) $300,000 paid by the protection buyer.

9. Which of the following statements about credit default swaps (CDS) is least accurate? A credit default swap's reference obligation is:

(A) the only obligation of the reference entity covered by a single-name CDS.

(B) delivered by the protection buyer to the protection seller, upon default, in the case of physical settlement.

(C) typically a senior unsecured bond.

10. Which of the three statements in the introductory paragraph is correct?

(A) The statement describing the separation of credit and interest rate risk.

(B) The statement describing the bonds covered by a single name CDS.

(C) The statement describing the payoff on a credit event.

11. In anticipation of an announcement of leveraged buyout of a publicly traded company,

which of the following actions would be most appropriate?

(A) Buy the stock of the company and buy CDS protection on company's debt.

(B) Sell protection of the company's bond and buy put options on the company's stock.

(C) Buy both the stock and the bonds of the company.

12. Credit default swap (CDS) fixed payments are most likely to:

(A) be made until the maturity of the CDS whether a credit event occurs or not.

(B) be set at 1% for investment-grade debt and 5% for high-yield debt.

(C) be made by the protection seller to the protection buyer.

13. Using the information under the heading "Illustration CTD," which of the three bonds would be the cheapest to deliver?

(A) Bond Q.

(B) Bond P.

(C) Bond R.

14. Using information in Exhibit 2, the gain on the position is closest to:

(A) £1,080,000.

(B) £1,440,000.

(C) £4,320,000.

15. Which of the comments relating to the credit curve is least accurate?

(A) The definition of the credit curve.

(B) The description and example of the naked CDS position.

(C) The description and example of the curve trade.

16. Regarding CDS credit events, a CDS is least likely to pay off upon occurrence of a:

(A) bankruptcy

(B) restructuring.

(C) failure to pay

17. It is most accurate to state that the upfront payment associated with a credit default swap (CDS) is:

(A) greater when the reference obligation is high-yield debt rather than investment-grade debt.

(B) always zero due to the way CDS are priced at origination.

(C) sometimes made by the credit protection seller to the credit protection buyer.

18. Which of the following statements regarding settlement protocols with respect to CDS is least accurate?

(A) When a credit event has occurred, with physical settlement, the protection seller

receives the reference obligation and the protection buyer receives the market value of the reference obligation immediately prior to the credit event.

(B) When there is a credit event, the swap will be settled in cash or by physical delivery.

(C) A super majority vote of the declarations committee of ISDA is needed for a credit event to be declared.

19. A credit default swap (CDS) will change in value:

(A) whenever the credit quality of the reference entity changes.

(B) only when default occurs.

(C) only when a failure to pay, a bankruptcy, or a restructuring occurs.

20. Which of the following strategies would be most appropriate use of CDS given an expectation of credit curve steepening?

(A) A curve flattening trade.

(B) A curve steepening trade.

(C) Engage in a naked CDS.