Question 1

A bullet bond and an amortizing loan are issued at the same time with the same maturity and with the same principal. Which of these would have a greater credit exposure halfway through their life?

Options:

A- Indeterminate with the given information

B- They would have identical exposure half way through their lives

C- The amortizing loan

D- The bullet bond

Answer:

D

Explanation:

A bullet bond is a bond that pays coupons covering interest during the life of the bond and the principal at maturity. An amortizing loan pays the interest as well as a part of the principal with every payment. Therefore, the exposure of the amortizing loan continually

reduces, and approaches zero towards the end of its life. The bullet bond will always have a higher exposure at any time during its life when compared to an equivalent amortizing loan. Hence Choice 'd' is the correct answer.

Question 2

Question Type: MultipleChoice

Which of the following contributed to the systemic failure during the credit crisis that began in 2007?

Options:

A- Stress tests that did not stress enough

B- Moral hazard from the strategy of 'originate and distribute'

C- Inadequate attention paid to liquidity risk

D- All of the above

Answer:

D

Explanation:

All the factors listed above contributed to systemic failure. Liquidity risk was not on the radar of regulators, and was a second priority for risk managers, and most of the focus was on capital adequacy as liquidity was thought to be an unlikely problem. Liquidity, regardless of capital adequacy, was the primary cause of failure of a number of institutions during the crisis.

Similarly, stress tests proved to be much milder than the shocks that were actually experienced, and the strategy of 'originate and distribute' implied that the mortgage and other debt originators had no interest in any due diligence as they intended to package and sell the debt to other investors.

Therefore Choice 'd' is the correct answer.

Question 3

Question Type: **MultipleChoice**

Identify the correct sequence of events as it unfolded in the credit crisis beginning 2007:

1. Mortgage defaults increased

2. Collapse in prices of unrelated assets as banks tried to create liquidity

3. Banks refused to lend or transact with each other

4. Asset prices for CDOs collapsed

Options:

A- 3, 4, 1 and 2

B- 1, 3, 4 and 2

C- 1, 4, 3 and 2

D- 4, 1, 2 and 3

Answer:

C

Explanation:

According to a paper by the BCBS, here is an excellent summary of what happened. Based on this, Choice 'c' is the correct answer.

'At the outset of the crisis, mortgage default shocks played a part in the deterioration of market prices of collateralised debt obligations (CDOs). Simultaneously, these shocks revealed deficiencies in the models used to manage and price these products. The complexity and resulting lack of transparency led to uncertainty about the value of the underlying investment. Market participants then drastically scaled down their activity in the origination and distribution markets and liquidity disappeared. The standstill in the securitisation markets forced banks to warehouse loans that were intended to be sold in the secondary markets. Given a lack of transparency of the ultimate ownership of troubled investments, funding liquidity concerns were triggered within the banking sector as banks refused to provide

sufficient funds to each other. This in turn led to the hoarding of liquidity, exacerbating further the funding pressures within the banking sector. The initial difficulties in subprime mortgages also fed through to a broader range of market instruments since the drying up of market and funding liquidity forced market participants to liquidate those positions which they could trade in order to scale back risk. An increase in risk aversion also led to a general flight to quality, an example of which was the high withdrawals by households from money market funds.'

Question 4

Question Type: MultipleChoice

Which of the following statements is NOT true in relation to the recent financial crisis of 2007-08?

Options:

A- An intention to diversify from their core activities led all market participants to the same activities, which though appearing diversified at the bank's level, created a concentration risk at the systemic level

B- The existence of central counterparties could have limited the damage caused by the financial crisis

C- Central banks had data on the interconnections between institutions, but poor understanding and analysis meant this data was never analyzed

D- Counterparty risk was difficult to gauge as it was impossible to know who the counterparty's counterparties were

Answer:

C

Explanation:

Counterparty risk was difficult to gauge as it was impossible to know who the counterparty's counterparties were - this is true as the chain of financial transactions became excessively long with no central transparency of who owed who what. Bank A's credit depended upon the health of its counterparties, whose health in turn depended upon other counterparties. Thus Choice 'd' is a correct statement.

In an attempt to diversify, banks became more like each other - chasing yield, they piled into securitized products, and chasing diversification, they piled into different types of securitized products. The system as a whole became susceptible to small shocks in the assets underlying this vast edifice of structured products. Therefore Choice 'a' represents a correct statement.

Choice 'c' does not represent a correct statement. Central banks had little data on the interconnections between institutions. They were aware of the large volumes of OTC transactions, but had no data to figure out who was connected to who, and who had what kind of exposures.

Choice 'b' represents a correct statement. Most transactions, other than exchange cleared futures trades (which were a tiny fraction of all trades) were cleared on a bilateral basis. The existence of central counterparties (CCPs) could have limited the impact of the crisis significantly as market participants would not have lost trust in each other, and the 'collateral damage' that was witnessed from a fall in housing prices, and thereby mortgage assets, would have been more contained.

Question 5

When pricing credit risk for an exposure, which of the following is a better measure than the others:

Options:

A- Expected Exposure (EE)

B- Notional amount

C- Potential Future Exposure (PFE)

D- Mark-to-market

Answer:

A

Explanation:

Exposure for derivative instruments can vary significantly over the lifetime of the instrument, depending upon how the market moves.

The potential future exposure represents the extremes, not the most likely outcome. The expected exposure is the most suitable

measure for pricing the credit risk. Over time, as multiple transactions are entered into, the expectation (or the mean) will be realized - though individual transactions may have more or less by way of exposure.

The notional amount may not be relevant, though for loans it may be the most important contributor to the expected exposure. Mark-to-market will represent the exposure at a given point in time, but cannot be predicted nor be used to price the credit risk.

Question 6

Which of the following are valid approaches to calculating potential future exposure (PFE) for counterparty risk:

1. Add a percentage of the notional to the mark-to-market value

2. Monte Carlo simulation

3. Maximum Likelihood Estimation

4. Parametric Estimation

Options:

A- 3 and 4

B- 1, 3 and 4

C- 1 and 2

D- All of the able

Answer:

C

Explanation:

When a derivative position is entered into, its mark-to-market value is generally close to zero (though the notional may be high). With the passage of time, the derivative's value fluctuates in an unpredictable way, creating a counterparty exposure that may be difficult to estimate and risk manage. Counterparty risk in such cases is estimated based on Potential Future Exposure, which may be calculated using either:

a) Take the mark-to-market at present, and add a certain percentage of the notional, or

b) Perform a Monte Carlo simulation, capturing the stochastic nature of the PFE.

Therefore I and II are valid choices. MLE and parametric estimation are not methods for calculating PFE.

Question 7

Which of the following represents a riskier exposure for a bank: A LIBOR based loan, or an Overnight Indexed Swap? Which of the two rates is expected to be higher?

Assume the same counterparty and the same notional.

Options:

A- A LIBOR based loan; OIS rate will be higher

B- Overnight Index Swap; LIBOR rate will be higher

C- A LIBOR based loan; LIBOR rate will be higher

D- Overnight Index Swap; OIS rate will be higher

Answer:

C

Explanation:

A LIBOR based loan requires cash to move from the lender to the borrower in the amount of the notional. The Overnight Index Swap requires only the exchange of interest payments, and therefore represents less risk.

Therefore the LIBOR based loan is a riskier exposure.

The LIBOR is generally higher than the OIS. In fact, the difference between the two, the LIBOR-OIS spread, is a standard measure of the risk premium in the market that goes up when the risk of default by counterparty banks is considered high. This is because when the market perceives the risk of default to be high, the participants need a risk premium to take on the default risk which is considerably lesser with the OIS.

Question 8

Question Type: **MultipleChoice**

Which of the following statements are true:

1. Credit risk and counterparty risk are synonymous

2. Counterparty risk is the contingent risk from a counterparty's default in derivative transactions

3. Counterparty risk is the risk of a loan default or the risk from moneys lent directly

4. The exposure at default is difficult to estimate for credit risk as it depends upon market movements

Options:

A- 2 and 3

B- 1 and 2

C- 2

D- 3 and 4

Answer:

C

Explanation:

Credit risk is the risk from a borrower defaulting on moneys lent. Counterparty risk, on the other hand, is the risk that a counterparty to a derivative transaction will be unable to pay at the time the transaction is in-the-money.

Credit risk therefore relates more to the banking book, counterparty risk relates more to the trading book. Credit risk and counterparty risk differ in that for counterparty risk, the amount at risk fluctuates for counterparty risk depending upon the value of the underlying derivative. Counterparty risk generally starts at zero, for most swaps and other derivatives are near zero value at inception. Over time, as the prices of the underlying instruments move, one party ends up owing money to the other. A deterioration in the financial situation of the party owing moneys may lead to a loss to the other party, resulting in counterparty risk. Counterparty risk can also arise from stock lending operations and repo trades.

Credit risk on the other hand is the traditional risk of default by a borrower, or a bank's customer who has taken a loan or has an overdraft or other credit facility.

Statement I is therefore incorrect as credit risk and counterparty risks are different.

Statement II is correct as counterparty risk is 'contingent' in the sense it arises only if the transaction with the counterparty ends up being in-the-money, and the counterparty defaults.

Statement III is incorrect. The statement describes credit risk.

Statement IV is incorrect, as the exposure is known for moneys lent. Derivative exposures for the future are difficult to estimate, they can even turn from moneys owed to moneys due as the value of the underlying changes.

Question 9

Question Type: **MultipleChoice**

Which of the following belong in a credit risk report?

Options:

A- Exposures by country

B- Exposures by industry

C- Largest exposures by counterparty

D- All of the above

Answer:

D

Explanation:

All the listed variables are relevant to management monitoring the credit risk profile of an institution, therefore Choice 'd' is the correct answer.

Question 10

Question Type: MultipleChoice

If P be the transition matrix for 1 year, how can we find the transition matrix for 4 months?

Options:

A- By calculating the cube root of P

B- By numerically calculating a matrix M such that M x M x M is equal to P

C- By dividing P by 3

D- By calculating the matrix P x P x P

Answer:

B

Explanation:

Assuming time invariance and the Markov property, it is easy to calculate the transition matrix for any time period as P^n, where P is the given transition matrix for one period and n the number of time periods that we need to compute the new transition matrix for.

However, when the new time period is less than the time period the matrix is available for, the only way to deriving a transition matrix for a partial period is to numerically calculate a matrix M such that M^n = P. Therefore Choice 'b' is the correct answer. Taking cube roots of a matrix is not a possible operation, dividing by 3 gives a matrix meaningless in this context, and P x P x P will give us the transition matrix for 3 years, not 1/3rd of a year.