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CREDIT DEFAULT SWAPS: NAVIGATING THE CROSS-SECTION WITH RISK SHARING

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SHARIA ADVISOR LICENSED BY
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Summary

The market for credit default swaps (CDS) has experienced explosive growth in the past. By the end of 2007, the outstanding amount was $62.2 trillion, falling to $38.6 trillion by 2008. A CDS is a type of contract that offers a guarantee against the non-payment of a loan. In this agreement, the seller of the swap pays the buyer in case of a credit event (default) by a third-party. If no default occurs, the seller will have collected a premium from the buyer. CDS are traded for various reasons such as hedging, speculation and arbitrage. Such swaps are non-compliant with Shariah due to involvement in interest (*Riba*), major uncertainty (*Gharar)*, the trading of risk, gambling elements and prohibited forms of debt trading. An alternative proposed by some scholars is credit sharing in the form of Takaful.

Introduction

Swaps have been one of the fastest growing types of derivatives, and the reason is simple. They provide a simple way to hedge common and specific financial risks, which are inherent in most portfolios.

The recent crisis has revealed several shortcomings in CDS market practices and structure. At the same time, the need for financial institutions to hedge their risks and exposures has also become critical. This paper analyses credit default swaps and considers the Shariah compliance of such financial instruments.

Initially, an explanation, history and the types of swaps are introduced. Thereafter, a brief background to credit derivatives is presented as a preface to credit default swaps. This is followed by an analysis and mechanics of credit default swaps. Subsequently, CDS are then critically analysed from a Shariah perspective.

Finally, an alternative Shariah compliant model is proposed to provide Islamic financial institutions a mechanism to hedge their risks

WHAT ARE SWAPS?

Swaps are contractual agreements between two parties to exchange future cash flows on pre-determined dates over a specified period (i.e. until the swap matures). Technically, a swap can be defined as a bilateral contractual agreement in which both parties agree to simultaneously make periodic payments in exchange for two different streams of cash flow. This payment is referred to as the legs or sides of the swap and is determined based on hypothetical values of underlying assets called notionals. The swap agreement can be executed by exchanging an asset or liability in the same or different currencies or a floating interest-rate stream with a fixed rate contract or vice versa. In the most basic (usually called 'plain vanilla') of swap contracts, the interest-rate swap, one party pays a fixed rate of interest while the other pays a floating rate of interest.

Swaps are specifically tailored to the needs of both parties entering into them. As such, they are not traded on an exchange, but instead are traded 'over the counter' (OTC). Brokers – either independent or divisions of investment banks – provide live, tradable price quotes for a wide range of swaps. Additionally, brokers provide liquidity to the market by acting as intermediaries between investors wanting to take different positions.

Swaps are extremely flexible instruments. Unlike a bond, where details are set in stone at the time of issuance, details of swap contract can be amended, upon mutual agreement, at any time. However, even with this flexibility, each swap remains eminently liquid and easily valued[1].

Most swaps today involve interest payments or currencies, but just about anything can be swapped, including equity swaps, credit spread swaps, and commodity swaps. In an equity swap, the cash flow based on an equity index is swapped for some other cash flow, typically a fixed-rate cash flow. In a commodity swap, the swapped cash flow is based on commodity prices. In a credit swap, the cash flow usually is based on the spread between a risky bond and a U.S. Treasury bond. The motivation for such swaps include economic reasons, comparative advantage, and hedging purposes. The comparative advantage notion shows that two companies gain when each borrows in the market where it has a comparative advantage and enters into a swap with the other company. The hedging purpose shows that swaps are used to hedge interest and exchange rate risks and to immunize portfolios against interest rate risk[2].

1 NAPF (2015), Swaps Made Simple, National Association of Pension Funds

2 Krichene, N. (2012), Islamic Capital Markets Theory and Practice, Wiley

HISTORY OF SWAPS

Swap agreements originated from agreements created in Great Britain in the 1970s to circumvent foreign exchange controls adopted by the British government. The first swaps were variations on currency swaps. The British government had a policy of taxing foreign exchange transactions that involved the British pound. This made it more difficult for capital to leave the country, thereby increasing domestic investment.

Swaps were originally conceived as back-to-back loans. Two companies located in different countries would mutually swap loans in the currency of their respective countries. This arrangement allowed each company to have access to the foreign exchange of the other country and avoid paying any foreign currency taxes.

IBM and the World Bank entered into the first formalized swap agreement in 1981. The World Bank needed to borrow German marks and Swiss francs to finance its operations, but the governments of those countries prohibited it from borrowing activities. IBM, on the other hand, had already borrowed large amounts of those currencies, but needed U.S. dollars when interest rates were high for corporate borrowers. Salomon Brothers came up with the idea for the two parties to swap their debts. IBM swapped its borrowed francs and marks for the World Bank's dollars. IBM further managed its currency exposure with the mark and franc. This swaps market has since grown exponentially to trillions of dollars a year in size.

The swap product was very well received by the public, to the extent that the total swap transactions increased by more than USD700 billion in 1989, and the total outstanding swap reached approximately USD 4.6 trillion by end of 1992. According to the Bank of International Settlements, swap transactions in the global swaps market had reached more than USD 415.2 trillion by 2006. This was 8.5 times more than the total Gross National Products of the world for the year 2006 and was more than any other transaction in the derivatives market[3].

The history of swaps wrote another chapter during the 2008 financial crisis when credit default swaps on mortgage backed securities (MBS) were cited as one of the contributing factors to the massive economic downturn. Credit default swaps were supposed to provide protection for the non-payment of mortgages, but when the market started to crumble, parties to those agreements defaulted and were unable to make payments. This has led to substantial financial reforms of how swaps are traded and how information on swap trading is disseminated. Swaps were historically traded over the counter, but they are now moving to trading on centralized exchanges[4].

3 Dusuki, A. & Mokhtar, S. (2010), The Concept and Operations of Swap as a Hedging Mechanism for Islamic Financial Institutions, ISRA

4 Investopedia, When was the first swap agreement and why were swaps created?, Available from: https://www.investopedia.com/ask/answers/051115/when-was-first-swap-agreement-and-why-were-swaps-created.asp

DIFFERENT TYPES OF SWAPS

There are several types of financial swaps that are commonly used in the conventional financial system. The main types of swap instruments are briefly explained below:

Interest-rate swap
This swap is the most common type of swap and is also the one most transacted in the present market. It involves the exchange of a fixed rate payment for a floating rate that is adjusted periodically.

Currency swap
This type of swap includes the exchange of interest-rate payments in different currencies.

Commodity swap
This swap is applied based on the average price of an underlying commodity, such as petrol or other natural resources, where the parties exchange payment of a fixed price for the commodity for another floating price.

Equity swap
This swap involves exchanging a stream of payments based on the performance of an underlying quantity of equity shares or an equity-share index[5].

Before understanding credit default swaps, it is imperative to understand the family of credit derivatives to which credit default swaps belong to.

5 Dusuki, A. & Mokhtar, S. (2010), The Concept and Operations of Swap as a Hedging Mechanism for Islamic Financial Institutions, ISRA

CREDIT DERIVATIVES

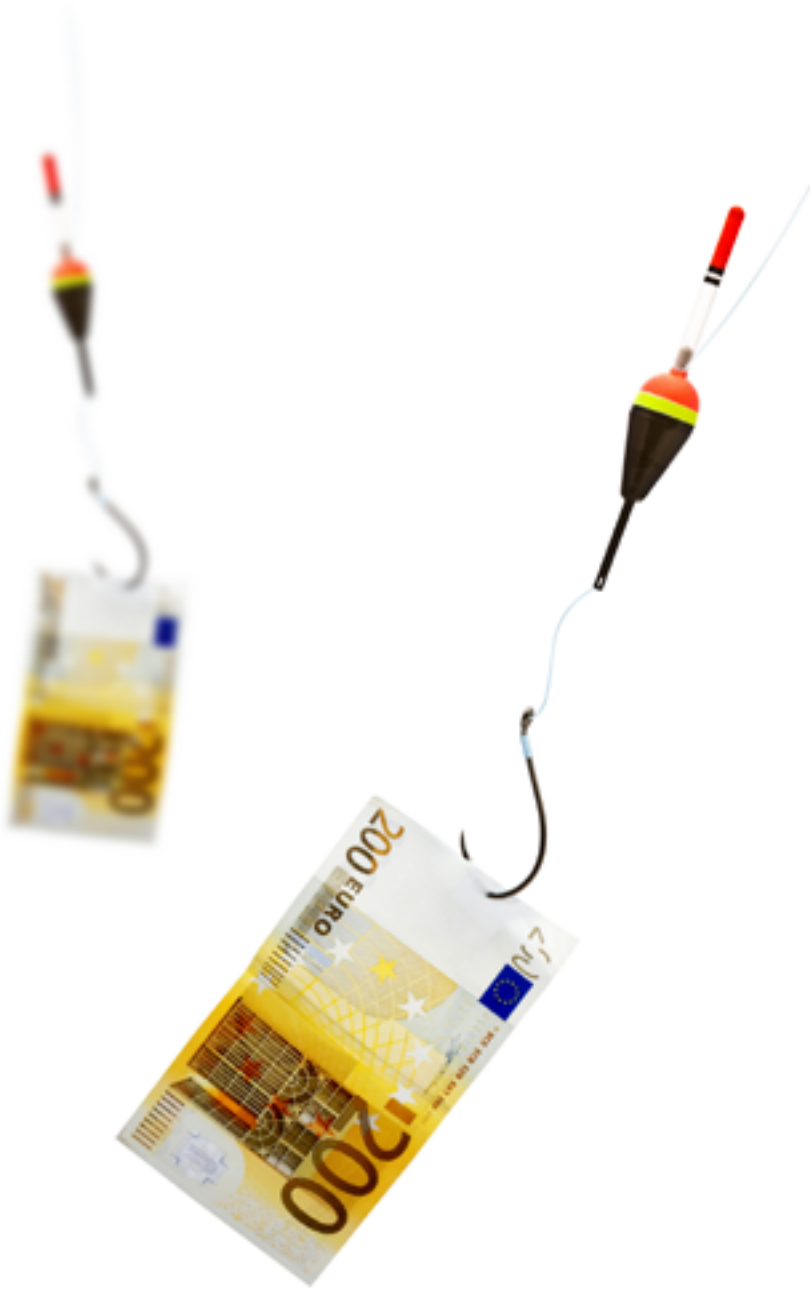
Credit derivative refers to any one of various instruments and techniques designed to separate and transfer risk of corporate or sovereign default to an entity other than the lender or debt holder. They are the negotiable bilateral contracts (reciprocal arrangement between two parties to perform an act in exchange of the other parties act) that help the users to manage their exposure to credit risks. The buyer pays a fee to the party taking on the risk.

Types of credit derivatives

1. Unfunded credit derivatives.
2. Funded credit derivatives.

Unfunded credit derivatives
These are termed as unfunded because the seller makes no upfront payment to cover any future liabilities. The seller makes a payment only when the settlement is met. Ultimately the buyer takes the credit risk on whether the seller will be able to pay any cash / physical settlement amount. The common types of funded derivatives are: Credit default swaps, credit default swaption, credit spread option, total return swap, credit default index products and credit default swap on asset-backed securities. Credit Default Swap (CDS) is the most common and popular type of unfunded credit derivatives.

Funded Credit derivatives
In this type, the party assuming credit risk makes an initial payment that is used to settle any credit events that may happen going forward. Thereby, the buyer is not exposed to the credit risk of the seller. Credit Linked Note (CLN) and Collateralized Debt Obligation (CDO) are the charmers of the funded credit derivative products. These kinds of transactions generally involve SPVs for issuing or raising a debt obligation which is done through the seller. The proceeds are collateralized by investing in highly rated securities and these note proceeds can be used for any cash or physical settlement[6]. Funded credit derivatives include: credit linked notes (CLN), constant proportion debt obligation (CPDO) and collaterised debt obligation (CDO).



6 Edupristine (2015), Credit Derivatives explained in detail, Available from: https://www.edupristine.com/blog/credit-derivatives-in-detail

CREDIT DEFAULT SWAPS

A CDS is the most highly utilised type of credit derivative. In its most basic terms, a CDS is similar to an insurance contract, providing the buyer with protection against specific risks. Most often, investors buy credit default swaps for protection against a default, but these flexible instruments can be used in many ways to customize exposure to the credit market. CDS contracts can mitigate risks in bond investing by transferring a given risk from one party to another without transferring the underlying bond or credit asset. Prior to credit default swaps, there was no vehicle to transfer the risk of a default or other credit event, from one investor to another.

CDS are designed to cover many risks, including: defaults, bankruptcies and credit rating downgrades[7]. The most common credit events that trigger a payment from the risk "buyer" to the risk "seller" in a CDS are:

A. **Bankruptcy:** The reference entity becomes insolvent or is unable to pay its debts

B. **Failure to pay:** The reference entity fails to make interest or principal payments when due

C. **Debt restructuring:** The configuration of debt obligations is changed in such a way that the credit holder is unfavourably affected

D. **Obligation acceleration or obligation default:** The debt obligations of the issuer become due before their originally scheduled maturity date

E. **Repudiation/moratorium:** The issuer of the underlying bond (the reference entity) rejects their debt, effectively refusing to pay interest and principal

The settlement terms of a CDS are determined when the CDS contract is written. The most common type of CDS involves exchanging bonds for their par value, although the settlement can also be in the form of a cash payment equal to the difference between the bonds' market value and par value. They can be used by bond investors – as a hedge against potential defaults – or traded separately when they are called naked CDSs.

The criticism against CDS contracts can be explained using house insurance as an example: it is not possible to take out an insurance policy on someone else's house – because you would then have a financial interest in burning it down. Investors with no interest in the underlying bond can buy and sell CDSs – and profit from its demise[8].

7 Pimco, Credit Default Swaps.

8 Neate, R. (2012), JP Morgan loss: What is a credit default swap, The Guardian, Available from: https://www.theguardian.com/business/2012/may/14/jp-morgan-loss-credit-default-swap

EXAMPLE OF CREDIT DEFAULT SWAP

The following cites an example of a CDS:

1. An investment trust owns £1 million corporate bond issued by a private housing firm.
2. If there is a risk the private housing firm may default on repayments, the investment trust may buy a CDS from a hedge fund. The CDS is worth £1 million.
3. The investment trust will pay interest on this credit default swap of say 3%. This could involve payments of £30,000 a year for the duration of the contract.
4. If the private housing firm doesn't default. The hedge fund gains the interest from the investment bank and pays nothing out.
5. If the private housing firm does default, then the hedge fund has to pay compensation to the investment bank of £1 million – the value of the credit default swap.
6. Therefore, the hedge fund takes on a larger risk and could end up paying £1million

The higher the perceived risk of the bond, the higher the interest rate the hedge fund will require.

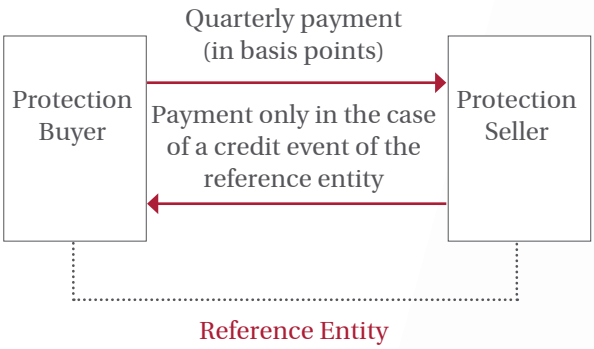


Figure 1: Example of a CDS

Another example:

1. Suppose that Company XYZ has lent money to abc.com in the form of a £1,000 bond.
2. Company XYZ may then purchase a credit default swap from another company e.g. a Hedge Fund.
3. If the firm (abc.com) default on the loan, then the hedge fund will pay Company XYZ the value of the loan.
4. Thus, Company XYZ has insurance against loan default. The hedge fund has the opportunity to make a profit, so long as the firm does not default on the loan.
5. The riskier the loan, the higher will be the premium required on buying a credit default swap[9].

9 Pettinger, T. (2017), Credit Default Swaps Explained, Available from: https://www.economicshelp.org/blog/933/finance/credit-default-swaps-explained/

HISTORY OF CDS AND THE CREDIT CRISIS

One of the earliest CDS deals came out of JPMorgan in December 1997, when the firm put into place the idea hatched in Boca Raton. It essentially took 300 different loans, totalling $9.7 billion, that had been made to a variety of big companies like Ford, Wal-Mart and IBM, and cut them up into pieces known as "tranches" (that's French for "slices"). The bank then identified the riskiest 10 percent tranche and sold it to investors in what was called the Broad Index Securitized Trust Offering, or Bistro for short[10].

Before long, credit default swaps were being used to encourage investors to buy into risky emerging markets such as Latin America and Russia by insuring the debt of developing countries. Later, after corporate blowouts like Enron and WorldCom, it became clear there was a big need for protection against company implosions, and credit default swaps proved just the tool. By then, the CDS market was more than doubling every year, surpassing $100 billion in 2000 and totalling $6.4 trillion by 2004.

And then came the housing boom. As the Federal Reserve cut interest rates and Americans started buying homes in record numbers, mortgage-backed securities became the hot new investment. Mortgages were pooled together, sliced and diced into bonds that were bought by just about every financial institution imaginable: investment banks, commercial banks, hedge funds, pension funds. For many of those mortgage-backed securities, credit default swaps were taken out to protect against default.

Soon, companies like AIG weren't just insuring houses. They were also insuring the mortgages on those houses by issuing credit default swaps. By the time AIG was bailed out, it held $440 billion of credit default swaps. AIG's fatal flaw appears to have been applying traditional insurance methods to the CDS market. There is no correlation between traditional insurance events; if your neighbour gets into a car wreck, it doesn't necessarily increase your risk of getting into one. But with bonds, it's a different story: when one defaults, it starts a chain reaction that increases the risk of others going bust. Investors get uneasy, worrying that the issues plaguing one big player will affect another. So, they start to bail, the markets freak out and lenders pull back credit.

The problem was exacerbated by the fact that so many institutions were tethered to one another through these deals. For example, Lehman Brothers had itself made more than $700 billion worth of swaps, and many of them were backed by AIG. And when mortgage-backed securities started going bad, AIG had to make good on billions of dollars of credit default swaps. Soon it became clear it wasn't going to be able to cover its losses. And since AIG's stock was one of the components of the Dow Jones industrial average, the plunge in its share price pulled down the entire average, contributing to the panic.

Some have suggested credit default swaps have exacerbated the financial crisis of 2008. E.g. When Lehman Brother went bankrupt, it meant a lot of credit default guarantees would go unrewarded. E.g. Washington Mutual bought corporate bonds in 2005 and hedged their exposure by buying CDS protection from Lehman brothers. With Lehman brothers going bankrupt this CDS protection was nullified. Others say that credit default is only an instrument reflecting changes in risk and are not the cause of the underlying liquidity problems[11].

10 Philips, M. (2008), How credit default swaps became a timebomb, Available from: http://www.newsweek.com/how-credit-default-swaps-became-timebomb-89291

11 Pettinger, T. (2017), Credit Default Swaps Explained, Available from: https://www.economicshelp.org/blog/933/finance/credit-default-swaps-explained/

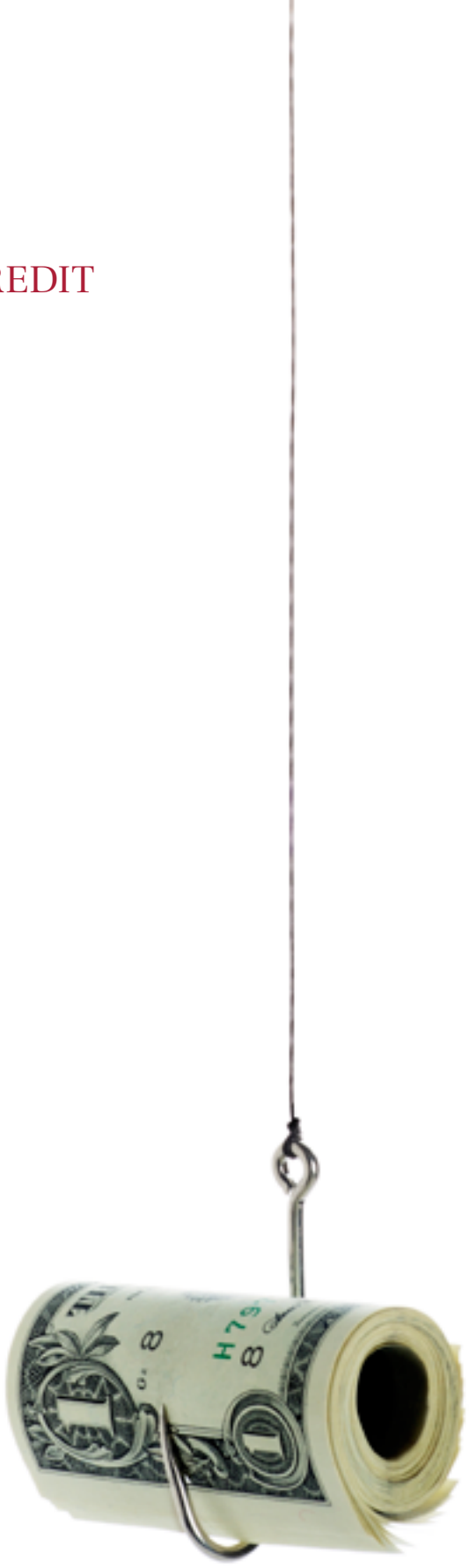
WHY DO COMPANIES INVEST IN CREDIT DEFAULT SWAPS?

1. Hedge against risk

A CDS contract can be used as a hedge or insurance policy against the default of a bond or loan. An individual or company that is exposed to a lot of credit risk can shift some of that risk by buying protection in a CDS contract. This may be preferable to selling the security outright if the investor wants to reduce exposure and not eliminate it, avoid taking a tax hit, or just eliminate exposure for a certain period of time[12].

2. Speculation e.g. risk is under-priced

The second use is for speculators to "place their bets" about the credit quality of a particular reference entity. With the value of the CDS market, larger than the bonds and loans that the contracts reference, it is obvious that speculation has grown to be the most common function for a CDS contract. CDS provide a very efficient way to take a view on the credit of a reference entity. An investor with a positive view on the credit quality of a company can sell protection and collect the payments that go along with it rather than spend a lot of money to load up on the company's bonds. An investor with a negative view of the company's credit can buy protection for a relatively small periodic fee and receive a big payoff if the company defaults on its bonds or has some other credit event. A CDS can also serve as a way to access maturity exposures that would otherwise be unavailable, access credit risk when the supply of bonds is limited or invest in foreign credits without currency risk[13].



12 Pinsent, W. (2015), Credit default swaps: an introduction, Available from: https://www.investopedia.com/articles/optioninvestor/08/cds.asp

13 Pinsent, W. (2015), Credit default swaps: an introduction, Available from: https://www.investopedia.com/articles/optioninvestor/08/cds.asp

3. Arbitrage

If a company's financial position improves, the credit rating should also improve and therefore, the CDS spread should fall to reflect improved rating. This makes CDS more attractive to sell CDS protection. If the company position deteriorated, CDS protection would be more attractive to buy. Arbitrage could occur when dealers exploit any slowness of the market to respond to signals[14].

As with any transaction, credit default swaps do offer benefits to both sides of the transaction[15]. A credit default swap offers the buyer a number of advantages such as:

a) Protection of investment portfolio.

b) Credit default swaps allow treasurers to change the credit risk without selling the underlying asset. This is of particular advantage to a company with a portfolio concentrated with a small number of issuers.

c) Protection against other credit risks.

d) Credit default swaps can also be used to protect against the effect of other credit exposures. For example, this can be important when a company has a small number of key customers. The failure of one to meet its payment obligations could have severe implications for the company's cash flows. By entering into a credit default swap using one of the counterparty's instruments as the reference obligation, the company can structure a swap which will pay out if payment is not received.

e) A company purchasing a credit default swap will benefit if the reference entity or obligation deteriorates. There is no corresponding loss if the credit appreciates. However, this is not sufficient to justify paying the initial swap premium on its own.

CDS are often sold by banks. Banks benefit from CDS in a number of different ways including:

a) Portfolio management.

b) Credit default swaps allow banks to manage their own portfolios. It offers them the opportunity to access different credits without having to fund them. The bank can diversify its portfolio. It also allows them to vary the length of their exposures by selling swaps which match their desired risk profile.

c) Income.

d) The bank will receive the cash flows from the company buying the protection.

e) Regulatory reasons.

f) Banks are sometimes prevented from extending credit to some counterparties, often as a result of capital adequacy requirements. Credit default swaps offer the opportunity to gain exposure to these counterparties.

14 Pettinger, T. (2017), Credit Default Swaps Explained, Available from: https://www.economicshelp.org/blog/933/finance/credit-default-swaps-explained/

15 Treasurytoday (2004), Credit derivatives credit default swaps, Available from: http://treasurytoday.com/2004/01/credit-derivatives-credit-default-swaps

CDS IN LIGHT OF SHARIAH

There are multiple issues with CDS which breach Shariah principles and make CDS non-compliant financial instruments:

1. Interest (*Riba*)
2. Gambling (*Maysir*)
3. Uncertainity (*Gharar)*
4. Trading an impermissible subject matter
5. Prohibited form of debt trading
6. Speculating on default

1. *Riba*

CDS have an element of *Riba* in the contracts. CDS are bilateral commercial transactions, i.e. there is an exchange of money from both parties to the transaction in the case of a claim, and this exchange of monies which is generally unequal, would amount to clear interest.

If the credit event does occur, the protection buyer only makes a payment up to the credit event date and makes no further payment. At this time, the seller is obligated to honour the contract thereby compensating for the loss in the value of the debt obligation. This will amount to *Riba al-Fadhl* (which is known as interest due to surplus and excess) and originates when a *Riba* item is exchanged for the same item in an unequal amount. In the case of CDS, the *Riba* item is money.

Another type of interest is *Riba al-Nasi'ah*, which refers to delay and deferring an exchange of two homogenous items. In CDS contracts, there is a delay since the protection buyer will only be paid after the credit event occurs. This is called *Riba al-Nasi'ah*.

Riba is not just limited to unjustified increment above the principal amount; *Riba* extends to any unwarranted and unjustified payments too. The classical jurists term such profiteering and premiums as *Ribh maa lam Yudhman* (profit for which no risk was borne). The premiums paid for a CDS fall under unjustified payments. Because such payments are unjustified, they are effectively *Rishwa* – an unjustified and prohibited premium to secure a non-Shariah compliant benefit.

Unjustified and irregular contractual terms (*Shart Fasid*) also fall under the purview of *Riba*. The classical jurists term irregular contractual terms as *Riba Ma'nawi* (conceptual). CDS incorporate a clause which obliges payment contingent on a credit event. From a Shariah perspective, a bilateral agreement with such a contingent clause is an irregular contractual term making the entire agreement irregular and voidable.

2. *Maysir*

Gambling refers to a contract in which payment and staking of wealth from one of the parties to the contract is definite whereas the liability/ payment of the other party to the contract is indefinite and contingent upon chance. One party will definitely win at the expense of another's loss.

Another aspect which makes CDS non-compliant with Shariah is *Maysir* or gambling. Although CDS are not literally forms of gambling but the structural contracts of CDS make them akin to gambling. This is because; the buyer of the CDS may never have any claims and therefore never receive any "consideration" for payments made. This is akin to gambling wherein any of the two parties involved may win a sum of money from the other, but one of them is destined for total loss depending on the happening of an uncertain future event. Although, CDS does not entail winning a sum of money, it certainly entails indemnifying a loss which is uncertain. Thus, it has a very strong semblance to gambling. The buyer may have only paid a single premium and has now become worthy of huge amounts to compensate him for the loss that has occurred. On the other hand, he may pay premiums everlastingly without having the "opportunity" to make a claim. So, similar to gambling the benefits or liabilities of either party in a CDS contract are uncertain.

3. *Gharar*

Another element in CDS which makes these financial instruments impermissible from the Shariah perspective is the aspect of *Gharar* or uncertainty. *Gharar* happens in a commercial transaction where an essential element of the transaction remains uncertain, and could thus be the cause of dispute in the future. Hence if the selling price or the payment/delivery dates are ambiguous then the transaction would have an element of *Gharar* and thus be impermissible. It is for this reason that transactions that are contingent on a future event are considered impermissible.

Shariah scholars explain that there are four types of uncertainty[16]. These are;

1. **Al-Gharar fil wujood**
   This refers to the uncertainty that arises with regards to the existence of the subject of the transaction. The example that is normally quoted by the jurists for this type of *Gharar* is the example of the impermissibility of selling a commodity that does not exist at the time of the sale. This form of *Gharar* is found in CDS contracts as the contract entails a bilateral deal in which the buyer of the contract sells his risk to the seller, which may or may not happen in the future.

2. **Al-Gharar fil husool**
   This refers to the uncertainty that arises due to the acquisition of the subject of a contract. For example, a person is not allowed to sell a fish that has not yet been caught in a huge and unrestricted body of water as there is an element of uncertainty with regards to his acquisition of the fish. This form of uncertainty is found in CDS, as neither of the protection buyer nor the protection seller are aware if the risk sold will materialise.

3. **Al-Gharar fil miqdar**
   This refers to the element of uncertainty that arises with regards to the amount of the subject in the contract. This form of uncertainty is also found in CDS as the protection buyer is uncertain at the time of concluding the contract the amount of premium he will end up paying in total. Likewise, the precise amount that will be received in case of default also remains unclear.

4. **Al-Gharar fil 'ajal**
   This type of *Gharar* refers to the element of uncertainty that would arise with regards to the delivery time-frame of the subject matter in the contract. Hence the selling of an animal that is yet to be born to the foetus of an animal is impermissible as there is high level of uncertainty when (or if) this child will be born. This form of uncertainty is also found in CDS, as the time of the credit event remains uncertain.

16 Jakhura, S. (2006), What makes conventional insurance impermissible and Takaful permissible?, CIEFSA, Available from: http://www.ciefsa.org/islamic-finance-articles/155-takaful-insurance/231-what-makes-conventional-insurance-is-impermissible-and-takaful-permissible

4. Trading an impermissible subject matter

The Prophet Muhammad (peace be upon him) prohibited *bay' al-Gharar* (uncertainty) (Sahih Muslim). The scholars of hadith have stated that this narration refers to trades harnessing major uncertainty as well as the actual trading and transfer of risk[17]. Risk is not a tradable commodity or an act in itself contributing to the value of output. Thus, the Prophet (peace be upon him) clearly prohibited trading and exchanging risk. In prohibiting *Gharar*, the Shariah has also prohibited the trading of risks, and thereby, prohibiting derivative instruments designed to transfer risk from one party to another.

5. Prohibited form of Debt trading

The trading of debt is referred to as *Bay' al-Dayn*. It is a sale of payable right or receivable debt either to the debtor himself, or to any third party. There are divergent rulings among the classical *Fuqaha* and jurists relating to the permissibility of the sale of debt. As far as the issue of the sale of debt to the debtor himself, the majority of jurists unanimously agree that the sale of debt to the debtor himself is valid. For example, a creditor can purchase an item from the debtor in lieu of the debt owed to the creditor. The debt would be exchanged for the item. However, this must ensure the principles of *Riba* are not breached. For example, a creditor cannot sell his debt of £100 to the debtor in lieu of £110 spot. Likewise, a creditor cannot exchange the debt of £100 owed to him for £110 payable in six months[18]. This is also referred to as *Faskh al-Dayn* in the terminology of the jurists.

One of the principles mentioned by the jurists is the prohibition of *Bay' al-Kali' bil Kali'* as mentioned in the Hadith reported in *al-Mustadrak*, *al-Tahawi*, *al-Daraqutni*, *al-Bayhaqi* and *Ibn Abi Shaybah*. Although some scholars have debated the strength of this hadith, the jurists have accepted the principles conveyed by this text. *Bay' al-Kali' bil Kali'* refers to a scenario where both counter-values are deferred and in essence, it is an exchange of one debt for another. The deferral of both counter-values results in a deferred transaction. This has been prohibited due to the presence of *Gharar*.

6. Speculating on default

In Islam it is an obligation on the debtor to repay the debt and the creditor is encouraged to grant respite when there is a genuine reason for default. The Prophet (peace be upon him) said: "Delay in repaying debts by a wealthy person is oppression" (Sahih al-Bukhari). In another statement, the Prophet (peace be upon him) condemned the person who delays the payment of his loan without a valid excuse. He said: "The delay of a well-off person (in paying off his debt) subjects him to punishment and disgrace." (*Sahih al-Bukhari*)
If the debtor defaults in his payment due to a genuine excuse, in that he is not capable in paying off the debt, then he should be given respite. The Qur'an states:

> **"If the debtor is in a difficulty, grant him time till it is easy for him to repay.**
> **But if you remit it by way of charity, that is best for you if you only knew."**
> (Qur'an 2:280)

In credit default swaps, an investor with a positive view on the credit quality of a company can sell protection and collect the payments that go along with it rather than spend a lot of money to load up on the company's bonds. An investor with a negative view of the company's credit can buy protection for a relatively small periodic fee and receive a big payoff if the company defaults on its bonds or has some other credit event. This concept of speculating on another's credit quality and making money on the weakness of another goes against the core teachings of Islam in relation to helping those in debt.

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17 Uthmani, T. (2014), Fiqh al-Buyu', Karachi: Maktabah Ma'arif al-Qur'an

RISK IN FINANCIAL MARKETS AND THE NEED FOR HEDGING

There are two main categories of risks that affect a company's cash flows and/or cost of capital:

1. Firm-specific risk

This is also known as diversifiable or unsystematic risk. These risks are specific to the particular activities of the company such as fire, lawsuits and fraud. The company can manage many sources of these risks with adequate internal controls and other risk management techniques.

2. Market-wide or systematic risk

Risk that cannot be diversified away. Market risk is associated with the economic environment in which all companies operate, including changes in interest rates, exchange rates and commodity prices. These risks can be managed using derivative contracts and other financial risk management tools[18].

Since credit risk is the natural business of banks, but unwanted risk for commercial traders, naturally there is a market for this between banks and traders. This involves selling obligations at a discounted rate. For example, forfeiting, bill of lading, factoring, or discounted bills. Since Islamic financial institutions (IFIs) are prohibited from investing in debt markets, 'impure' sectors and hedging instruments like derivatives, etc. the element of risk is higher, as compared to other conventional banks. Also, an inability to charge default interest for late payments and the imposition of preconditions on levying penalties result in higher business risks for IFIs. Due to prohibitions on investing in debt markets, 'impure' sectors and hedging instruments, the secondary and inter-bank market is very thin and underdeveloped. This causes a major threat to excess funds with banks remaining unutilized and failing to earn adequate returns[19].

The asset and liability sides of Islamic banks also have unique risk characteristics. The Islamic banking model has evolved to one-tier *Mudarabah* with multiple investment tools. On the liability side of Islamic banks, saving and investment deposits take the form of profit-sharing investment accounts. Investment accounts can be further classified as restricted and unrestricted, the former having restrictions on withdrawals before maturity date. Demand deposits or checking/current accounts in Islamic banks take the nature of *Qard Hasan* (interest-free loans) that are returned fully on demand. On the asset side, banks use *Murabahah* (cost-plus or mark-up sale), instalment sale (medium/long-term Murabahah), *Bay' al-mu'ajjal* (price-deferred sale), *Istisnaa'* / *Salam* (manufacturing agreement or pre-paid sale) and *Ijarah* (leasing) and profit-sharing modes of financing (*Musharakah* and *Mudarabah*). These instruments on the asset side, using the profit-sharing principle to reward depositors, are a unique feature of Islamic banks. Such instruments change the nature of risks that Islamic banks face[20].

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SHARIAH COMPLIANT ALTERNATIVE TO CDS

At their root, all recent financial crises are debt crises. Excessive leverage, combined with a very poor regulatory framework, exposes corporations to unsupportable risk and threatens the overall soundness of the financial system. The more debt-based the financial structure, the more unstable the financial system. According to Abbas Mirakhor, an economy in which the financial system is dominated by highly leveraged institutions where the objective of every transaction is money-now-for-more-money-later, and where transactions are supported by interest rate-based debt contracts, financial institutions become "merchants of debt."

An alternative to the current financial system must be founded on risk-sharing instead of risk-shifting as a basis for sustainable finance[21]. In simple terms, credit default sharing is an agreement between cooperative banks for hedging default risk based on the principles of risk-sharing and Takaful, which means guaranteeing one another. Banks are the policyholders for protection. The following steps describe the process of credit default sharing transactions:

> Step 1
Some cooperative banks organised in a country constitute a guaranty fund that represents all cooperative banks. The resources of the constituted fund are from the cooperative banks' donations, margin calls, and investment returns of surplus cash-savings.

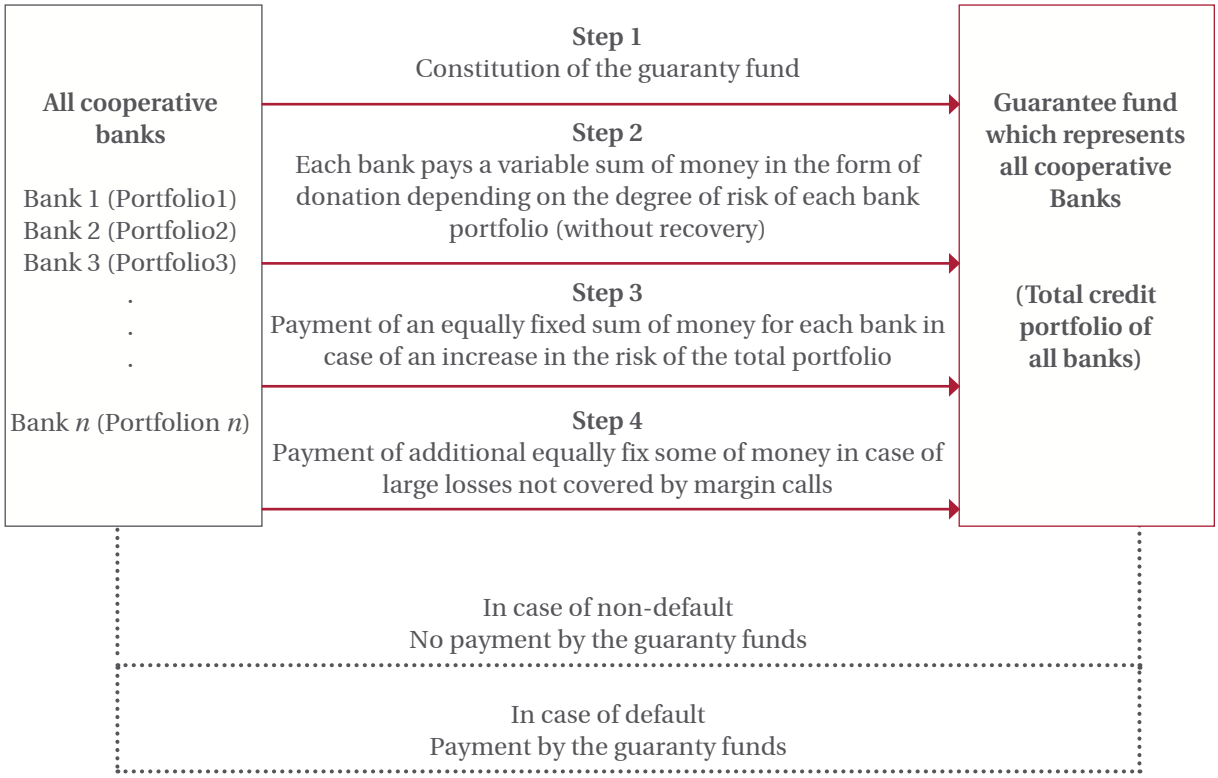
> Step 2
Each bank pays a variable sum of money in the form of a donation depending on the degree of risk in each bank's portfolio (without recovery). The guaranty fund also functions as a clearinghouse that becomes the counterparty to all trades. The fund can select credit (through a screening process), as well as diversify and manage the credit risk of the total credit portfolio through membership criteria based on minimum capital requirements for cooperative banks (in the form of a donation).

> Step 3
The guaranty fund prevents cooperative banks from facing additional exposures to the total credit portfolio and special margin calls depending on the degree of risk. The guaranty fund may adjust collateral requirements several times daily to account for changes in the parties' creditworthiness. Margins are requested to absorb short-term losses and first losses in the case of default. All cooperative banks pay an equally fixed sum of money to cover losses in the case of default. The amount of equally fixed sums of money is determined by the amount of expected losses in the case of default (loss given default) divided by the number of all cooperative banks. In the case of credit risk reduction, the amount of margin available is invested in a short-term horizon or refunded to banks according to the credit default-sharing contract.

21 Naifar, N. (2014), Credit Default Sharing Instead of Credit Default Swaps: Towards a more sustainable financial system in Journal of Economic Issues, Available from: https://www.researchgate.net/publication/262564049_

> Step 4

Even with continual collateral adjustments and margin calls, guaranty funds sometimes have difficulty collecting sufficient collateral to account for "jump-to default risk." In the case of large losses not covered by margin calls, cooperative banks contribute to the guaranty funds with additional payments in accordance with the principle of Takaful (and not according to the risk of their position). The act of sharing responsibility and cooperation between all banks helps reduce extreme risks, contributes to overall financial stability, and decreases systemic risk by immunizing each bank from the others' default. The following Figure illustrates the main steps of the "credit sharing transactions":



The Waqf Approach

Another method and model to establish the guarantee fund is the structure of Waqf. Waqf can be structured to be a separate entity and as a consequence, contributors to the fund lose their ownership. The Waqf deed will outline and determine when payments will be made from the Waqf guarantee fund. For example, the Waqf deed can have a clause stating that payments will be made in the case of default. Thus, a Takaful-type structure based on Waqf can also be used to mitigate risk of default.

Conclusion

A Credit default swap (CDS) is the most highly utilised type of credit derivative. Most often, investors buy these swaps for protection against a default, but these instruments can be used in many ways to customize exposure to the credit market. From a Shariah perspective, CDS fails in a number of areas. CDS have an element of *Riba* in the contracts. This is because these contracts are bilateral commercial transactions involving an unequal exchange of money between the respective parties. Another aspect which makes CDS non-compliant with Shariah is *Maysir* or gambling. Although CDS are not literally gambling, the structures of CDS contracts make them akin to gambling. This is because; the protection buyer may never have any claims and therefore never receive any "consideration" for payments made. Another major issue which plagues CDS is the existence of *Gharar* because the occurrence of the credit event is uncertain, likewise, the quantum of payment from both sides is not certain and nor are they accurately defined. The alternative proposed in this paper shows that the idea of credit sharing in the form of Takaful instead of risk shifting is a viable alternative to CDS.

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ABOUT OUR PEOPLE

RESEARCH AUTHOR

MUFTI FARAZ ADAM

SHARIAH CONSULTANT AT SRB

> Completed his Islamic studies in the six-year Alimiyyah degree at Darul Uloom Leicester.
> Specialised in Islamic law and graduated as a Mufti in South Africa at Darul Iftaa Mahmudiyyah, Durban.
> Accredited with: Masters of Arts in Islamic Theology with specialisation in Juristic verdicts (Iftaa) and a Diploma in Islamic Finance.
> Completed a Master's Degree in Islamic Finance, Banking and Management at Newman University in 2017.

PEER REVIEWER

SHAIKH MUHAMMAD AHMAD SULTAN

SHARIAH ADVISOR AT SRB

> Over 10 years of experience as a Shari'a consultant and academic in various parts of Islamic finance.
> Worked predominantly in the financial services along with retail and investment banking and has expertise in corporate advisory and real-estate funds.
> He procured his Masters (A'alamiyah) in Fiqh and Usool ul Fiqh from Jami'ah Ahsan Ul Uloom and procured Bachelors in Islamic sciences from Jamia Dar-ul-Uloom.

PEER REVIEWER

MUFTI IBRAHIM ESSA

SHARIAH CONSULTANT AT SRB

> Teacher and Member Darulifta Jamiah Darululoom Karachi
> Chairman Shariah Board- Zarai Tarqiyati Bank Limited
> Member Shariah Board- Habib Metropolitan Bank Limited
> Shariah Advisor-EFU Takaful
> Shariah Advisor-Atrium Syndicate Lloyds of London

Disclaimer

This is a preliminary Shariah research and is by no means a definitive conclusion or fatwa on the aforementioned subject. This paper was written to develop knowledge and research on this complex subject from a Shariah perspective. We hope that this paper will prompt and engage global Islamic finance bodies, Shariah scholars and Muslim economists to analyze, comment and build upon the arguments expressed.

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