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Introduction to Financial Services: Derivatives

Background

Derivatives are financial instruments that come in several different forms, including *futures*, *options,* and *swaps*. A derivative is a contract that derives its value from some underlying asset at a designated point in time. The derivative may be tied to a physical commodity, a stock index, or an interest rate, for example. Derivatives' prices fluctuate as the underlying assets' rates or expected future prices change, and neither a buyer nor a seller of a derivative need necessarily own the underlying asset.

Many firms use derivatives to manage risk. For example, a firm can protect itself against increases in the price of a commodity that it uses by entering into a derivative contract that will gain value if the price of the commodity rises. A notable instance of this type of hedging strategy was a derivatives position taken by Southwest Airlines that allowed it to buy jet fuel at a low fixed price in 2008 even as energy prices reached record highs. When used to hedge risk, derivatives can protect businesses (and sometimes their customers as well) from unfavorable price shocks.

Others use derivatives to seek profits by betting on which way prices will move. Such speculation adds liquidity to the market—speculators assume risks that hedgers wish to avoid.

Although derivatives trading has its origins in agriculture, today most derivatives are linked to financial variables, such as interest rates, foreign exchange, stock prices and indices, and the creditworthiness of bond issuers. The market is measured in the hundreds of trillions of dollars, and billions of contracts are traded annually.

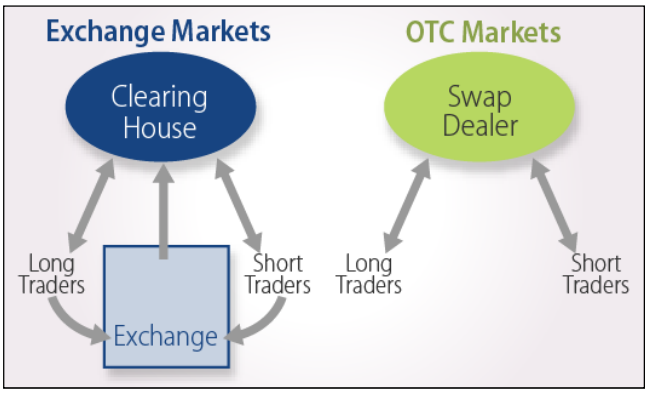
Growth in derivatives markets was explosive between 2000 and the advent of the financial crisis, with some retrenchment after 2008. From 2000 until the end of 2008, the volume of derivatives contracts traded on exchanges, such as futures exchanges, and the notional value of total contracts traded in the over-the-counter (OTC) market grew by 475% and 522%, respectively.

Market Structure and Regulation

Prior to passage of the Dodd Frank Act (P.L. 111-203) in 2010, futures and options were traded on regulated exchanges, while swaps were traded OTC. Futures contracts have long been traded on exchanges regulated by the Commodity Futures Trading Commission (CFTC), and stock options on exchanges under the Securities and Exchange Commission (SEC).

Exchanges are centralized markets where buying and selling interest comes together. Traders who want to buy, or take a long position (longs), interact with those who want to sell, or go short (shorts), and deals are made and prices reported throughout the day. In the OTC market, contracts are made bilaterally, typically between a dealer and an end user, and there is generally no requirement that the price, the terms, or even the existence of the contract be disclosed to a regulator or to the public. **Figure 1** shows the differences.

Figure 1. Exchange-traded vs. OTC Derivatives



Source: CRS.

Derivatives can be volatile contracts characterized by a high degree of leverage, which can result in big gains and losses among traders. The exchanges deal with the issue of credit risk through a third-party clearinghouse. Once the trade is made on the exchange floor (or electronic network), it goes to the clearinghouse, which guarantees payment to both parties. The process is shown in **Figure 1**. Traders then do not have to worry about counterparty default: the clearinghouse stands behind all trades. The clearinghouse ensures that it can meet its obligations by collecting margin collateral—such as cash or Treasury securities—from trading counterparties if potential losses accumulate. The intended effect of the margin system is that no one builds up a paper loss large enough to damage the clearinghouse in case of default. It is certainly possible for a trader to lose large amounts of money trading on the exchanges, but only on a "pay as you go" basis.

In the OTC market, as shown in the right side of **Figure 1**, there is a network of dealers rather than a centralized exchange. Firms that act as dealers stand ready to take either long or short positions, and make money on the volume of trading by charging a *spread*, or fee, on each trade. The dealer absorbs the credit risk of customer default, while the customer faces the risk of dealer default. The OTC market has been dominated by a dozen or so large firms—institutions like JP Morgan Chase, Goldman Sachs, Citigroup, and their foreign counterparts. In the OTC market, some contracts require collateral or margin, but not

all. All contract terms are negotiable. A trade group, the International Swaps and Derivatives Association (ISDA) publishes best practice standards for use of collateral, but compliance is voluntary.

Derivatives in the Financial Crisis

Because there is no universal, mandatory system of margin, large uncollateralized losses can build up in the OTC market. A well-known example during the crisis was AIG, which wrote about $1.8 trillion worth of derivatives, including credit default swaps guaranteeing payment if certain mortgage-backed securities defaulted or experienced other "credit events." As the subprime crisis worsened, AIG was subject to contract-based margin calls that it could not meet. To avert disorderly failure with associated widespread collateral damage to global financial markets, the Federal Reserve and the Treasury put tens of billions of dollars into AIG, much of which went to its derivatives counterparties. AIG eventually repaid these funds with interest.

The AIG case illustrates two aspects of OTC markets that were central to derivatives reform. First, in a market with mandatory clearing and margin, in which AIG would have been required to post initial margin to cover potential losses, there is a stronger possibility that AIG would have run out of money long before the size of its position reached $1.8 trillion.

Second, because most OTC contracts were not reported to regulators prior to 2010, the Fed and the Treasury lacked information in the crisis about which institutions were exposed to AIG, and the size of those exposures. Uncertainty among market participants about the size and distribution of potential derivatives losses flowing from the failure of a major dealer was a factor that exacerbated the "freezing" of credit markets during the peak of the crisis.

One basic theme of derivatives reform proposals in the runup to the Dodd Frank Act was to get the OTC market to act more like the exchange market—in particular, to have bilateral OTC swaps cleared by a third-party clearing organization. Clearing was expected to reduce counterparty risk and increase transparency. At the same time, there are costs associated with a clearing regime that requires participants to post margin. Firms that use derivatives to hedge business risks take positions that move in the opposite direction to the underlying market. Such commercial businesses argued that the costs of posting margin would prevent them from hedging, and they were ultimately exempted from the clearing and exchange-trading requirements in the Dodd Frank Act.

Dodd Frank Reforms

The Dodd Frank Act added five broad requirements, with certain exceptions, aimed at bringing the swaps market under a regulatory regime more closely resembling that of the futures markets. First, most swaps are required to be cleared through a clearinghouse, which involves posting margin to cover any potential losses as they accumulate. Second, these swaps are also required to be traded on an exchange or an exchange-like electronic platform called a "swap execution facility." However, swaps in which one counterparty is a nonfinancial firm (e.g., a farmer, energy company, or airline) are not subject to these clearing and exchange-trading requirements. Third, all swaps must be reported to a database called a "swap data repository." Fourth, financial firms that trade swaps heavily must register with the CFTC or the SEC (the latter if they trade swaps related to securities) as a *swap dealer* or as a *major swap participant*. Fifth, any swaps not cleared are subject to margin and capital requirements set by the regulators.

Modification to Dodd Frank

H.R. 26, which extended the Terrorism Risk Insurance Act (TRIA), was enacted into law on January 12, 2015, as P.L. 114-1. Section 302 of the new law contains a provision on derivatives regulation. This provision prevents regulators from imposing margin requirements on uncleared swaps for both trading counterparties if at least one of them is a non-financial firm.

Current Issues for Congress

Several bills have been introduced in the 114th Congress proposing changes to derivatives regulation. H.R. 37, the Promoting Job Creation and Reducing Small Business Burdens Act (commonly referred to as the financial reform bill), was passed by the House on January 14, 2015, and includes several derivatives provisions. Section 201 of H.R. 37 would exempt swaps traded between an affiliate of a nonfinancial firm and another company from the clearing and exchange-trading requirements. Separately, Title V of H.R. 37, the Swap Data Repository and Clearinghouse Indemnification Corrections, would remove a requirement, added in the Dodd Frank Act, that foreign regulators indemnify a U.S-based swap data repository for any expenses arising from litigation related to a request for market data. This provision was originally passed by the House in the 113th Congress as H.R. 742 on June 12, 2013. H.R. 37 also contains in Title I a derivatives provision identical to that in P.L. 114-1 discussed above.

In addition, the congressional committees with oversight of the CFTC, the House and Senate Agriculture Committees, may examine various derivatives regulatory issues as part of the CFTC reauthorization process. This process occurs roughly every five years and is currently underway, as the last authorization of appropriations for the CFTC expired on September 30, 2013. In practice, prior extensions of the expiring authorization provisions have often been used as vehicles to amend other aspects of the Commodity Exchange Act, which governs derivatives regulation.

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