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Introduction to Financial Services: Derivatives

Background

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

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 may add liquidity to the market—speculators assume risks that hedgers seek to avoid—but may also concentrate risk (discussed below).

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.

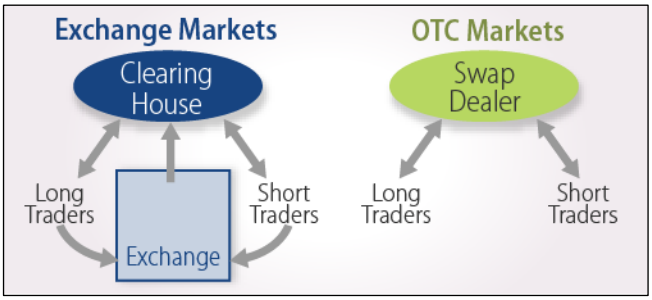
Growth in derivatives markets was explosive from 2000 until the end of 2008—the volume of derivatives contracts grew by approximately 500% by some measures—with some retrenchment after 2008.

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 and swaps were traded over the counter (OTC). Futures contracts have long been traded on exchanges regulated by the Commodity Futures Trading Commission (CFTC), and stock options on exchanges regulated by the Securities and Exchange Commission (SEC).

Exchanges are centralized markets where buying and selling interests come 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, 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 Versus 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 daily margin (sometimes called collateral)—such as cash or Treasury securities—from trading counterparties if potential losses accumulate. The intended effect of margin is to prevent paper losses 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" daily basis.

In the OTC market, as shown on 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, and the customer faces the risk of dealer default. The OTC market has been dominated by a dozen or so large financial firms—broadly, the largest U.S. banks—and their foreign counterparts. In the OTC market, some contracts, but not all, require collateral or margin. 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 2008 Financial Crisis

Because there was no universal, mandatory system of margin, large uncollateralized losses built up in the OTC market in the run-up to the 2008 financial crisis. For example, AIG, a well-known example during the crisis, 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, and by how much, to AIG and to Lehman Brothers, a large OTC derivatives dealer that failed in September 2008. Uncertainty among market participants about the size and distribution of potential derivatives losses flowing from the failure of Lehman, and faced by AIG, exacerbated the "freezing" of credit markets in the crisis.

One basic theme of derivatives reform proposals in the run-up 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, since margin ties up cash and securities. 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 Dodd-Frank.

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 the "swap data repository" database. 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.

Selected Issues for Congress

CFTC Reauthorization. In the 116th Congress, the House and Senate Agriculture Committees, which have CFTC jurisdiction, may examine derivatives regulatory issues as part of the CFTC reauthorization process. CFTC's authorization of appropriation is in the Commodity Exchange Act (CEA), but that authorization expired on September 30, 2013. Congress has continued to fund the CFTC beyond the expiration of its authorization. Prior extensions of the CEA authorization provision have been used as vehicles to amend other aspects of the CEA. The House passed a CFTC reauthorization bill, H.R. 238, in the 115th Congress, but the Senate did not consider the bill.

Nomination of CFTC Chair. The term of the current CFTC Chair, J. Christopher Giancarlo, expires in April 2019. On December 11, 2018, the White House announced that it would nominate Heath Tarbert, Assistant Secretary for International Markets at the Treasury Department, as the next Chair. The Senate Committee on Agriculture, Nutrition and Forestry may hold nomination hearings.

Cross-Border Trades and Clearinghouse Equivalence. The United Kingdom's (UK's) vote to leave the European Union (EU) cast uncertainty over prior agreements between the United States, UK, and EU that would have recognized one another's derivatives clearinghouses and exchanges as "equivalent" for meeting each other's regulatory requirements. Most derivatives trades are "cross-border" in that they often involve a non-U.S. participant or non-U.S. trading venue, and without these agreements, one cross-border trade could be subject to two different—and potentially conflicting—sets of requirements. Although this issue involves negotiation between the CFTC and the EU, due to the massive size of the markets involved, Congress may continue to closely monitor the issue.

Cryptocurrencies. The question of whether, and how, cryptocurrencies should be regulated has drawn much congressional and regulatory attention that may continue in the 116th Congress. Since 2015, the CFTC has relied on the CEA's anti-fraud provision to combat fraudulent conduct in connection with sales of virtual currencies. However, Chair Giancarlo noted in 2018 testimony that the CFTC lacks broader regulatory authority—apart from its powers to police against fraud and manipulation—over the trading of spot "commodities," by contrast to derivatives on those commodities. In May 2018, the CFTC issued a staff advisory providing guidance to derivatives exchanges and clearinghouses registered with the CFTC on best practices for listing derivatives on virtual currencies. A few options and futures exchanges offer derivatives trading on cryptocurrencies with CFTC approval, and the CFTC has taken enforcement action against unregistered Bitcoin futures exchanges. Two bills introduced in the 115th Congress would have required the CFTC to submit reports to Congress on topics including, respectively, (1) price manipulation in virtual currencies (H.R. 7224) and (2) regulation of virtual currency markets in the United States as compared with other countries (H.R. 7225).

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