

# LIFE CYCLE OF A SECURITY

- Clearance and Settlement



- The Global Market

- Central Securities Depository

- Creating Stock

- Corporate Actions



- Fixed Income Issues



- Managing Risk

**VIRGINIA B. MORRIS AND STUART Z. GOLDSTEIN**

**W**elcome to the life cycle of a security. This publication looks at the activities that underpin securities post-trade processing and ensure safety, soundness and risk mitigation in the global financial marketplace. It focuses on key steps involved in the safe and efficient transfer of securities ownership and settlement of trillions of dollars in trade obligations every day for the financial services industry.

As the primary infrastructure organization serving the capital markets in the US, The Depository Trust & Clearing Corporation (DTCC), through its subsidiaries, helps automate, centralize, standardize and streamline processes critical to the security and reliability of these markets.

One of our principal subsidiaries, The Depository Trust Company (DTC), is the world's largest central securities depository (CSD) and is also the first stop for almost all new US securities. CSDs like DTC play a continuing critical role in the increasingly global and electronic future of capital markets throughout the world with DTC providing custody and asset servicing for more than 3.6 million securities issues from the US and 121 other countries and territories, valued at \$33.9 trillion. In 2009, DTCC settled nearly \$1.48 quadrillion in securities transactions.

For all the changes in today's fast-moving financial markets, one thing that never changes is DTCC's primary mission. It is, first and foremost, to *protect and mitigate risk* for customers and investors. And, throughout our history, our story has been one of successfully responding to crisis. In fact, DTC was created in response to the manual, paper-intensive crisis of the 1970s, which actually caused the stock exchanges to shut down one day a week as they scrambled to catch up with what were then considered to be soaring equity trade volumes. In each crisis since then—including 9/11 and the financial crisis of 2008 and the collapse of Lehman Brothers—DTCC has stepped up to help protect our members and help to safeguard the integrity of the US and global financial system.

This booklet is intended as a companion piece to the *Guide to Clearance & Settlement*, published earlier by Lightbulb Press and DTCC. Combined, we believe these publications offer a broad overview of how capital markets work and the role DTCC plays, working with our members, global regulators and the industry to bring safety, reliability, and transparency to the financial services world.



Donald F. Donahue  
Chairman and CEO  
The Depository Trust & Clearing Corporation

# LIFE CYCLE OF A SECURITY

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# The Capital Markets

Wealth is bought and sold in the capital markets.

Capital markets exist where the exchange of capital—typically in the form of money or property—takes place in what's known as the primary market between those interested in acquiring capital—through an initial public offering (IPO), secondary stock offering, or bond issue—and those interested in purchasing equity or debt.

In general, those seeking capital are companies and governments who want funding for projects or for expansions. Those that provide capital are investors, either individuals or institutions, that believe they will make a profit through investing in these companies or governments.

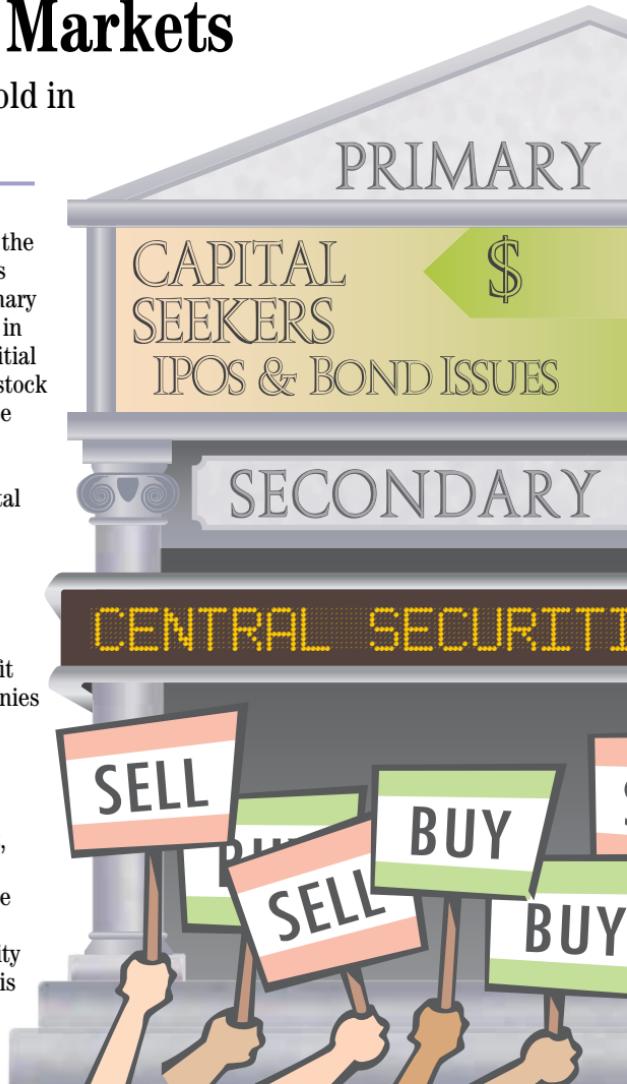
## **SECONDARY MARKET TRADING**

While raising capital is important, no capital market would survive without a secondary market where previously issued securities are bought and sold. In fact, this ability to trade in the secondary market is what keeps the primary market active. That's because investors can be relatively confident that if they decide to invest in a new company or venture, there will be investors in the secondary market willing to buy their securities should they decide to sell.

Further, the interaction of demand for investments and willingness to sell helps keep the markets **liquid**, which means that investors can trade investments relatively easily. It also helps bring in more capital. For example, new capital flows into the securities market when investors choose to reinvest their earnings in the market instead of spending them elsewhere.

## **DEVELOPMENT OF THE CSD**

For several hundred years, organized securities markets operated in much the same way as they always had. Investors placed their orders through brokerage firms, and those brokers handled the exchange of securities and cash or checks required to finalize a trade. Securities issuers dealt directly with their investors when owner-

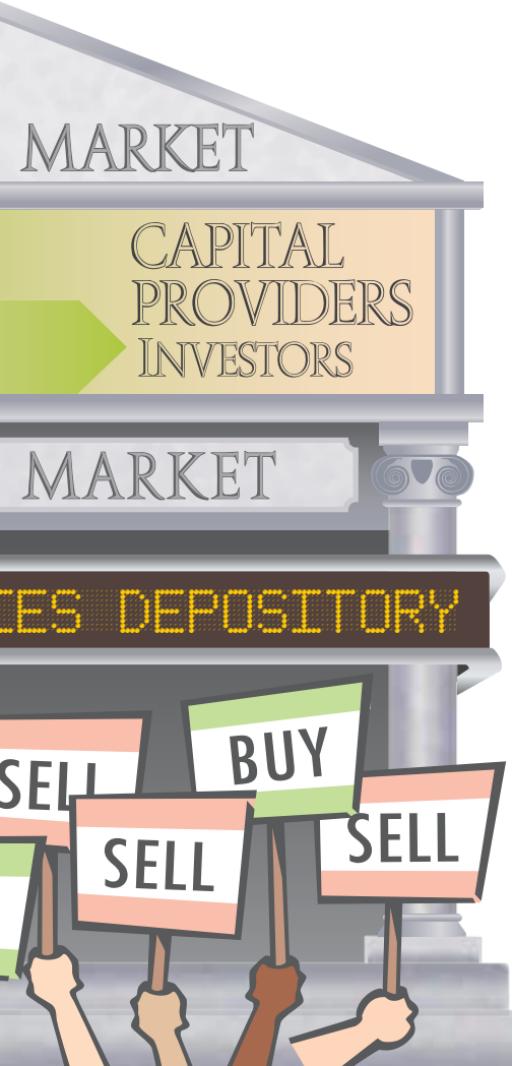


ship changed hands, when dividends or interest was paid, or when the company changed its name or merged with another company.

But as trading volume grew and the variety of securities expanded, the paper-based, labor-intensive processing became a huge and expensive burden. The solution was the development of **central securities depositories**, or **CSDs**.

Rather than firms or issuers having to deliver, reregister, and reissue individual certificates with every trade or every time a stock split, the CSDs immobilized, or secured, the certificates in a single location.

This meant they could assume responsibility for servicing those securities. When the stock was split or the issuer paid dividends or interest, the CSD handled updating the records and making payments. CSDs also facilitated the task of reregistering ownership of the securities.



as they were being traded each day, using an electronic book-entry system. Most of the paper certificates remained untouched in the depository. That sped up the process, made it less risky, and helped lower the costs of investing.

CSDs will continue to play a critical role in the global capital markets. The ways in which they are growing and expanding to serve investors and financial services firms in processing securities through their life cycles are changing the face of capital markets around the world.

## THE IMPACT OF TECHNOLOGY

Demand for more efficiency in the capital markets, which resulted in the creation of CSDs, corresponded with the advent of increasingly sophisticated hardware and software that made electronic record-keeping, automated trade settlement, and electronic payment systems possible.

Advances in technology and an increase in not only the volume but the pace of securities trading have gone hand-in-hand. But the dependence on technology presents a challenge as well. The electronic systems must continue to function seamlessly so that the data generated by trading is instantly accessible and error free. Parties to the transactions must be able to count on secure and constant communication.

To ensure there are no interruptions despite the risks from external events or internal failures, a number of CSDs, including The Depository Trust Company (DTC) in the United States, have established networks of fully redundant data and operations centers. Any one of the data centers or any one of the operations centers, which are separated from each other by thousands of miles in some cases, has the capacity to take over responsibility for all aspects of the recordkeeping and services that are the responsibility of the CSD. The key is the reliable and rapid capture and automated replication of data as trades occur.

As CSDs around the globe are increasingly interconnected, technology is also at the forefront. Binary code, which is the international language of business, extends the reach of low-cost and reliable investment services to benefit issuers, brokerage firms, banks, and investors worldwide.

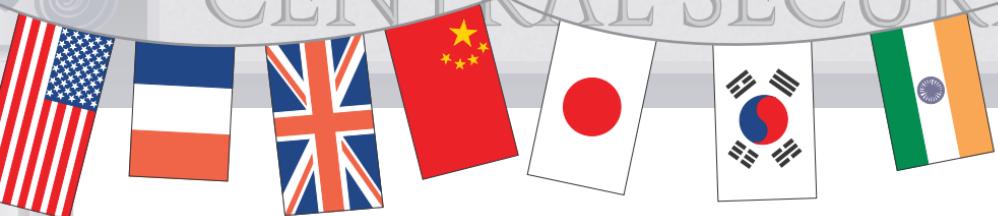
## DEMATERIALIZATION

The current move toward dematerialization, or eliminating paper certificates and replacing them with electronic records as evidence of securities ownership, is another example of the dynamic nature of the capital markets. When this goal is fully implemented, securities will be issued only in electronic form, and the need for physical custody of paper certificates will be phased out.

Twenty-five countries across Europe, Asia, Africa, and the Americas have completely eliminated paper certificates, and many more have begun the process of dematerialization. Virtually all municipal bonds issued in the United States are dematerialized, as are mutual funds and US government securities, with the exception of some US savings bonds.

US equities and corporate bonds still exist in physical form. But with changes in the law in recent years, a growing number of public companies have moved to dematerialize their securities and no longer issue paper certificates.

## CENTRAL SECURITIES DEPOSITORY



# Central Securities Depositories

The certificate stops here.

In the quest to attract capital and make their economies more vibrant, most countries with active capital markets have central securities depositories (CSDs) to provide the custody and recordkeeping services that enable the electronic transfer of ownership when investors buy and sell securities and initiate settlement. With CSDs, settling the huge volume of securities traded every day in the world's capital markets is fast, cost effective, and secure.

## CROSS-BORDER SETTLEMENT

In addition to the services they provide domestically, CSDs also handle cross-border settlement and may hold securities issued in countries other than their own.

Those securities may include receipts, or certificates, representing

shares that an issuing corporation offers for sale in one or more countries in addition to its home market. This approach allows the corporation, working with a local depositary bank, to raise capital in the target market.

When these securities are traded in the United States, they're known as American Depository Receipts (ADRs) and may be immobilized at DTC or held in electronic form. Investors buy ADRs through a broker as they do any US security, and enjoy the same benefits and face the same risks.

Like stockholders, ADR holders are entitled to all dividends paid on the underlying investment and to any capital gains they realize by selling their receipt for more than they paid for it. DTC processes the dividends for most ADR issues and allocates the payments to the participants whose clients own the receipts.

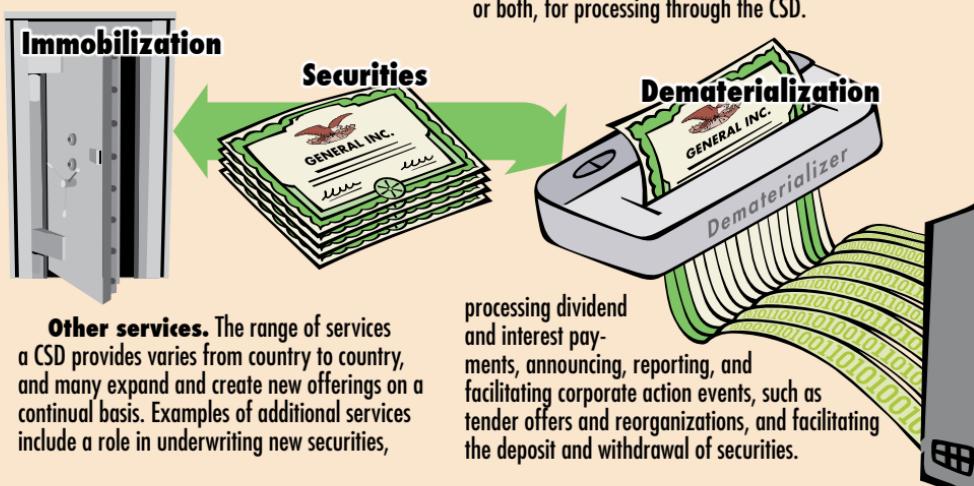
## THE MANY ROLES OF A CSD

In general, the basic functions of CSDs worldwide include:

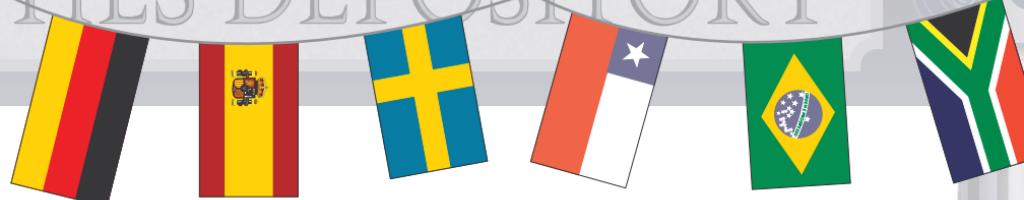
**Custody and recordkeeping.** CSDs provide safekeeping for securities **immobilized** in their vaults and electronic ownership records for those that are **dematerialized**. Using book-entry accounting methods, a CSD updates

ownership records electronically. Some CSDs record the names of the beneficial owners and others the names of only their member firms.

**Settlement services.** Very few CSDs are able to complete cash settlement by themselves. Generally, CSD members instruct a settlement bank or the country's central bank to meet their payment obligations, receive payments due them, or both, for processing through the CSD.



# TIES DEPOSITORY



If trading volume between countries justifies it, CSDs are frequently linked electronically, and have accounts with each other, so that securities can be moved electronically between them. In most cases, payment for those securities is usually handled between the trading firms' settlement banks rather than through the CSD, though some CSDs are equipped to handle both transfer and payment.

### SPOTLIGHT ON DTC

The Depository Trust Company (DTC) was created in 1973 to transform the settlement process for securities transactions. In the mid-1960s, when the predecessor to DTC, the Central Securities Service, began operations, the paper-based trading system in the United States had become overly cumbersome and was bogged down by the increasing transaction volume.

Before DTC, when a corporation went public or a bond was issued, each purchaser received an elaborately designed, and often quite beautiful, paper certificate in his or her name that detailed the issuer's name, the date of issue, the number of shares, the par value, and, after 1967, a unique identifying CUSIP number.

To sell, the owner endorsed and delivered the certificate to a broker, who delivered it to the buyer's broker in exchange for payment. Before the purchaser could receive proof of ownership, a new certificate had to be issued.

The solution to this bottleneck was to record changes of ownership electronically, using a computerized book-entry system that eliminated the exchange of paper certificates by immobilizing them,

### WHAT'S AN INTERNATIONAL CSD?

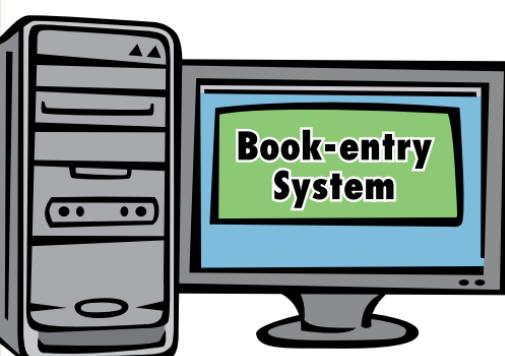
There are currently two International Central Securities Depositories (ICSDs), both located in Europe: Clearstream Banking in Luxembourg and Euroclear Bank in Belgium. Initially created to accommodate the expanding market in Eurobonds—bonds issued in a different currency and sold in a different country than that of the issuer, and generally outside of the regulation of any single country—these depositories now also provide recordkeeping and settlement services for a wide range of domestic and internationally traded securities by working with a number of domestic CSDs around the world.

or holding them in custody in a central location. That central location was DTC, now the largest central securities depository in the world.

Today, DTC acts as a CSD for virtually all US municipal securities, as well as the vast majority of equities and corporate bonds issued in the United States. In addition to its recordkeeping and custody services, it provides a number of asset processing services. For example, it settles institutional trades directly, manages all phases of a security's life cycle, and offers underwriting, interest, dividend, and corporate action services, including reorganization processing and tender offers for securities it holds in its custody.

There is no requirement that equities or bonds be held at DTC to trade. But increasingly, many brokerage firms and issuers want to take advantage of the efficiencies and cost benefits that DTC's electronic book-entry system offers.

Since 1999, DTC and National Securities Clearing Corporation (NSCC) have been subsidiaries of the Depository Trust & Clearing Corporation (DTCC), the world's most efficient and cost effective post-trade clearance and settlement organization.



# Creating Stock

Issuing new stock takes the coordinated effort of many players.

Privately held companies go public when they issue stock through an **initial public offering (IPO)**. When a company goes public, outside investors may purchase shares and become part owners of the company.

A company may choose to do an IPO for a number of reasons. Usually, it's to gain access to outside capital so that it can expand or improve upon its business operations or to be better able to compete against companies providing similar products or services in the marketplace.

## 1 INITIAL PUBLIC OFFERING

The IPO process begins when a company that wishes to go public contacts one or more **underwriting firms**, typically the investment banking division of a broker/dealer, to act as lead underwriter for the new issue. The lead underwriter assumes most of the responsibility for managing the IPO process, including:

- Creating and filing the prospectus
- Selecting and managing the syndicate, a group of other investment banks that help distribute the issue to investors whom they identify
- Marketing the new issue
- Distributing shares to investors and sending money to the issuer
- Maintaining initial price stability in the market

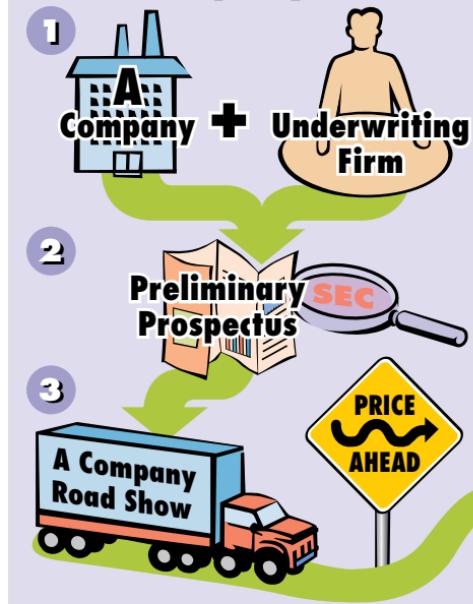
## 2 PREPARING THE ISSUE

The most common underwriting agreement is known as a **firm commitment**. The lead underwriter and other members of the syndicate assume the risk by buying the new shares from the issuing company and selling them to investors. Lawyers, accountants, and other agents are also part of launching a new issue.

The process officially kicks off when the lead underwriter and company work together to create a **preliminary prospectus**, which is filed with the Securities and Exchange Commission (SEC).

The preliminary prospectus provides detailed financial and operating models for the company and includes the total number of new shares the company wishes

## A Company IPO



to issue, as well as a price range within which the lead underwriter believes the shares should be sold—though both may change when the issue is **priced** and the terms of the issue are finalized. A prospectus may be revised and refiled with the SEC and other regulators as the document is reviewed. A final prospectus must be filed with the SEC after the transaction has been priced.

## 3 PRICING THE ISSUE

The next step is a road show—a two- to four-week marketing effort the lead underwriter uses to gauge and garner interest in the new issue. Interest, which is quantified by the number of shares a prospective investor would be willing to purchase at a particular price, is recorded in an order book.

Based on this investor reaction, the lead underwriter makes a determination about what it believes the size and price of the offering should be.

For example, say Private Company A wants to issue 10 million shares, and, based on economic and other factors related to the issuer, the lead underwriter believes each share should be priced at between \$10 and \$12 dollars.

If on the road show, however, the issue is oversubscribed—which means that investors are willing to purchase more than the 10 million shares, 50 or 60 million, for example—the lead underwriter will revise the original offering. For this issue, the lead underwriter might propose that the company issue 12 million, instead of 10 million, shares at \$14 a share.

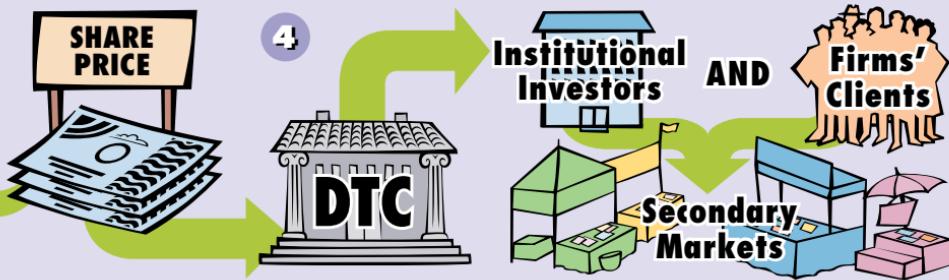
# LIFE CYCLE OF A SECURITY

## FULL DISCLOSURE

While the SEC requires that all important information, including risks, be disclosed, it does not make a determination on a security's value. Analyzing how valuable the stock is, and whether it will be a good fit in your investment portfolio, is up to you, as the investor, and your advisers.

## GETTING PAID

The underwriting fees, called the gross spread, are typically 7% of the value of the issue, or the total number of shares being issued times the share price. The gross spread is split among the members of the syndicate, with the largest share going to the lead underwriter.



share because it believes there is enough demand. If, on the other hand, the issue is undersubscribed, the lead underwriter may downsize or reprice the offering.

## DISTRIBUTING THE SHARES

4 While it's possible for individuals to invest in an IPO, it's not always easy to do so. Since the syndicate is in charge of selling the new issue, its members identify their best and largest clients, which tend to be institutional investors, such as pension and mutual funds, as well as their firms' wealthiest clients. These investors are generally believed to be best able to purchase a large block of shares and to handle the risk if the new issue doesn't perform as expected in its early days of trading.

Once the number of shares being issued is finalized, the lead underwriter uses DTC's underwriting services to make the securities depository eligible, distribute the shares efficiently to the syndicate members' investors, and collect payment. On closing day, the lead underwriter sends the cash raised by the IPO to the issuing company.

The sale of shares to initial investors is typically referred to as the **primary market distribution**. Once the new stock begins trading in the secondary market, generally the day following the IPO, the share price can fluctuate above or below the IPO price based on what investors are willing to pay or accept for the new stock. To stabilize the price in early trading, the lead manager often agrees to step in and buy shares.

## USING DTC'S SYSTEMS

The IPO process, once highly manual and paper intensive, has been streamlined and automated by DTC's underwriting services. Using DTC's system, underwriters can submit all required documentation to make the new issue eligible to be held at DTC, as well as electronically distribute IPO shares and settle all transactions associated with this new issue.

DTC primarily accomplishes distribution through a system called UWSOURCE. It allows participant firms to keep constant track of any changes or documentation provided, including pricing changes.

Underwriters can also keep track of securities as issues are distributed to investors through DTC's electronic **IPO Tracking Service**. Being able to monitor the movement of shares helps to ensure that a transaction runs smoothly.

## SECONDARY ISSUES

A company that has already gone public may decide to issue more shares through a **secondary offering** to raise additional capital.

However, a corporation generally issues new shares only if its share price is high. That's because adding to the number of outstanding shares dilutes the value of the shares investors currently own. To avoid this, companies may instead decide to issue bonds, convertible bonds, which can be converted to company stock after a certain amount of time, or preferred shares, which are hybrid equity and fixed-income investments.

# Clearance and Settlement

It takes a dedicated system to clear and settle transactions efficiently.

When a new stock begins to trade, transactions are handled through the automated and streamlined systems of two subsidiaries of The Depository Trust & Clearing Corporation (DTCC), NSCC and DTC, just as the billions of other trades are processed each year.

## RETAIL TRADES

NSCC and DTC clear and settle nearly all retail, or broker-to-broker, securities transactions in the United States on a strict schedule.

For equity transactions, the process begins the day the trade is made, or T for short. The transaction is settled three business days later on T+3, when the buyer receives credit for the purchased shares and the seller receives the payment due.

To help ensure the process is smooth and efficient and to reduce the risk of having to cope with the ripple effect of a failed transaction, NSCC becomes the **central counterparty (CCP)** to all trades at midnight between T+1 and T+2, acting as seller for every buyer and buyer for every seller to guarantee a trade will complete even if an original party to the trade goes bankrupt or similarly defaults.

Without that guarantee, thousands of trades other firms had made with a firm that goes out of business would have to be unwound. This means the trades would be considered not to have taken place and would have to be re-executed at a new price with some other firm. But with the NSCC guarantee, which mitigates the risk of default and counterparty exposure, that's not an issue.

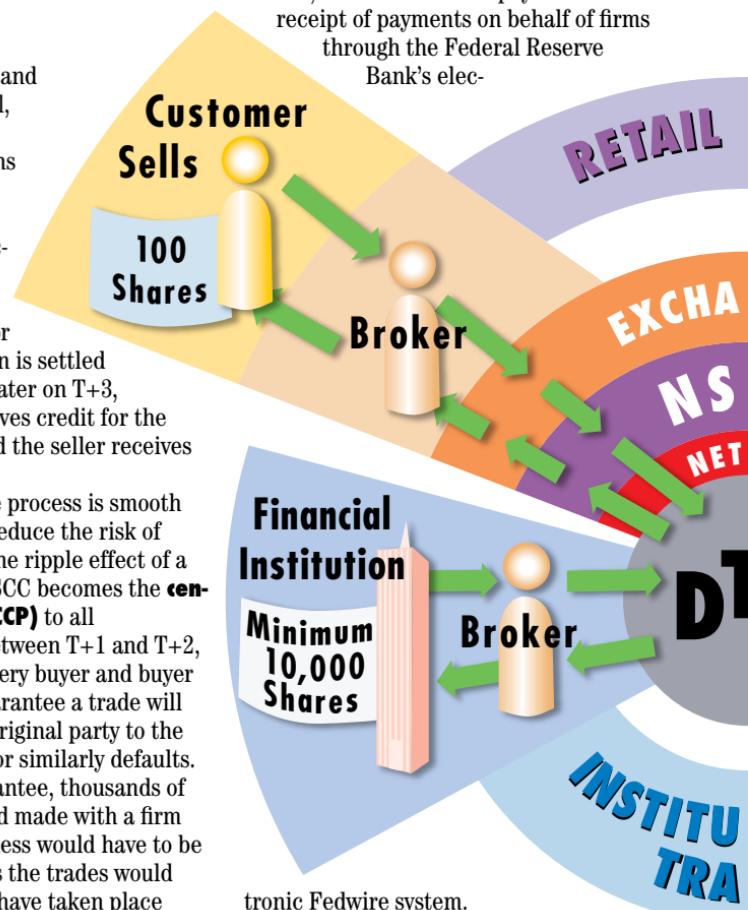
## MANAGING TRADES

### DTC's Inventory Management System (IMS)

**System (IMS)** enables participants to monitor the clearance and settlement status of their trades by settlement dates. They can also control the order in which transactions are processed on T+3 by authorizing the settlement process or holding back certain trades in the settlement cycle.

## SETTLING UP

Trades are finalized on T+3, the **settlement date**. NSCC sends final instructions for settlement to the firms, and DTC communicates their net credit or net debit status to both firms and their **settling banks**, which handle the payment or receipt of payments on behalf of firms through the Federal Reserve Bank's elec-



tronic Fedwire system.

Payment is completed and changes in ownership are recorded electronically through DTC's book-entry accounting system.

## INSTITUTIONAL TRADES

Institutional trades differ somewhat from retail transactions. These block transactions often involve a minimum of 10,000 shares and sometimes 100,000 or more. They're handled by a single broker and typically have a limited number of trading partners. For example, \$800,000 of a \$1 million transaction may be able to be executed in a single large block. In such cases, settlement goes directly through DTC.

# LIFE CYCLE OF A SECURITY

## NETTING

Through netting—the automatic process of offsetting a firm's buy orders for a particular security against its sell orders for that security—NSCC is able to reduce the total number of trades that require an exchange of money by 98% each trading day.

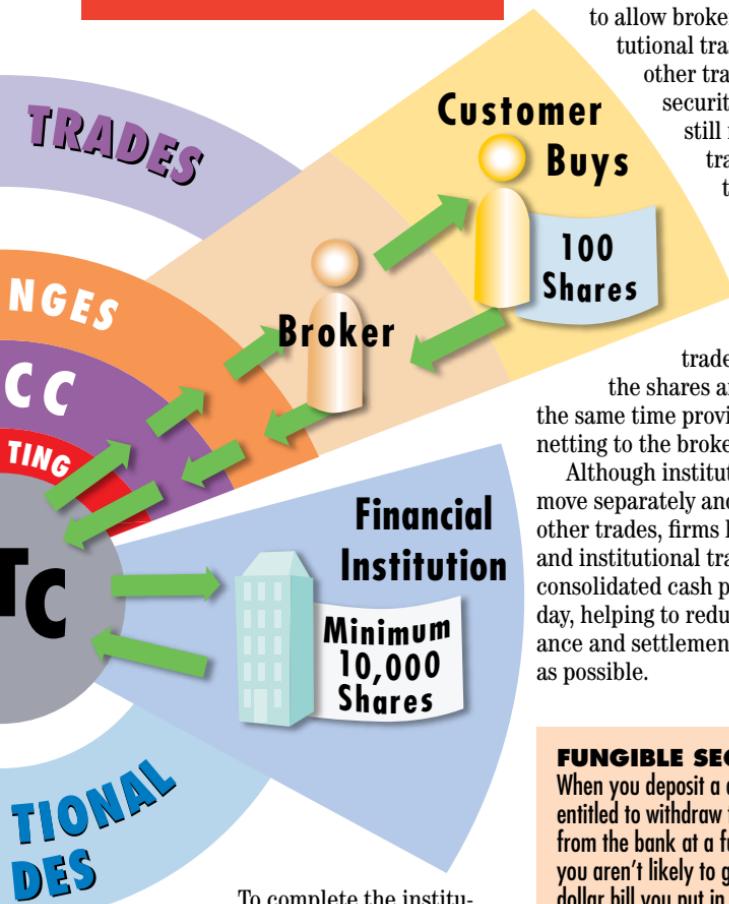
In addition, at the end of each trading day, netting consolidates the amounts due from and owed to a firm across all the different securities it has traded to a single net debit or a net credit.

segments if it can't find an institutional buyer for most or all of the lot. Or, it may choose to disguise the fact that it's selling or purchasing a large position. In these cases, the smaller trades may flow through NSCC for clearing and then to DTC.

Institutional trades differ from broker-to-broker transactions in that institutional trades generally are not netted, but are handled on a trade-for-trade basis, which means a direct exchange of securities and cash between firms and the custodian bank. However, DTC, with the introduction of its ID Net service, has begun to allow brokers to net their institutional transactions with their other transactions to reduce securities movement while still retaining the trade-for-trade settlement between the firm and the custodian bank. This allows the banks to maintain their fiduciary responsibility to pay for only those trades where all

the shares are delivered, while at the same time providing the benefits of netting to the brokers.

Although institutional trade shares move separately and are not netted with other trades, firms handling both retail and institutional trades receive one consolidated cash payment obligation each day, helping to reduce risk and keep clearance and settlement as efficient as possible.



To complete the institutional trade, DTC updates the record of stock ownership, first from the accounts of the custodian banks holding the securities to the broker's account at DTC, and then to the accounts of the custodian banks of the firm buying the shares. Similarly, it transfers the money from the buyer's custodian banks' accounts to the broker's account, and then through to the custodian banks of the selling institutional firm, all electronically. A number of different custodian banks and accounts can be a part of a single institutional trade worth tens of millions of dollars.

Sometimes, however, the broker may need to execute a large trade in smaller

## FUNGIBLE SECURITIES

When you deposit a dollar in the bank, you're entitled to withdraw the value of one dollar from the bank at a future date. However, you aren't likely to get back the exact same dollar bill you put in. But, it doesn't matter since the one you do receive has the same value as the one you had earlier.

Securities are similarly **fungible**, or interchangeable. When you hold shares in street name, you are the beneficial owner and have all the rights and risks associated with owning stock, but you don't hold shares directly. Instead, your security position is recorded on the books of your brokerage firm, and the securities are immobilized in DTC's custody and registered in its nominee name, Cede & Co., an acronym for CEntral DEpository.

When you buy or sell your position, that position changes hands electronically through DTC's book-entry accounting system, but the securities remain in DTC custody.

# Holding Stock

Securities processing is streamlined when most shares are held in custody.

The way you hold stock determines what happens when you buy and sell, as well as how you receive investor communications, including annual reports and voting



## IN STREET NAME

Between 85% and 90% of all equities and corporate and municipal bonds that have been issued in paper form in the United States are immobilized by DTC. The shares are registered with their issuers or the issuers' transfer agents in DTC's nominee name, **Cede & Co.**, also known as **street name**.

When you hold your shares this way, your name is listed on your brokerage firm's books as the beneficial owner of the securities. Your brokerage firm's name is listed in DTC's ownership records. And DTC's nominee name is actually listed as the registered owner of the stock with the issuer's transfer agent. But, while the securities are registered in the name Cede & Co., DTC merely holds them as record owner—you are always the beneficial, or actual, owner of the securities. This means you're entitled to all the benefits—and risks—associated with owning the stock.

When you sell stock you hold in street name, the shares are debited electronically from your broker's account at DTC and credited to the DTC account of the brokerage firm whose client bought shares. Your brokerage firm updates its books to reflect the sale from your account, and the buyer's brokerage firm updates the buyer's account to reflect the purchase. But the physical certificate doesn't have to be changed, since Cede & Co. continues to be the sole registered owner of the shares.

Both you and the buyer receive electronic confirmations that detail the number of shares and the price of your transactions. In addition, as long as the buyer holds the shares, his or her brokerage firm provides proxy materials and regular account statements,

proxies, and the way any dividends are paid. You have three choices:

- Street name
- Direct registration
- Physical certificate



which show the security's value and dividends the issuer has paid that have been credited to the beneficial owner's account.

## THROUGH DIRECT REGISTRATION

If you purchase shares and want to hold them electronically in your own name rather than in street name, in many cases you can do so through the **direct registration system (DRS)**. That system allows you to register your name and address, as the owner of the securities, directly on the issuer's books or the books of the issuer's transfer agent. Investors who use direct registration receive a statement from the transfer agent providing proof of ownership instead of a stock certificate. This moves the market towards the goal of **dematerialization**, or the elimination of paper certificates.

The issuer or transfer agent sends all investor information, dividends, and other corporate communications, including proxy materials, directly to you.

If you want to sell your shares at the market or a limit price, however, the securities must usually be transferred electronically from your account with the issuer or its transfer agent to your broker/dealer through DTC. While you can sell shares directly from your DRS account, transfer agents cannot provide a current price or limit price.

## FAST TRANSACTIONS

Transfer agents who are eligible to use the DRS system must also register to become members of DTC's Fast Automated Securities Transfer—**FAST**—program. FAST transfer agents maintain the out-

# LIFE CYCLE OF A SECURITY

## ONE BIG CERTIFICATE

A corporation issuing a new security may give DTC custody of a certificate for the total number of shares in the offering. Such issues are referred to as book-entry only (BEO) and essentially require street-name ownership, eliminating any individual physical certificates or physical processing.

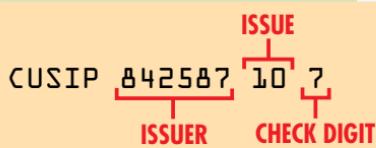


## IDENTIFYING SECURITIES

Regardless of how shares are held, all stocks—as well as government, municipal, and corporate debt registered in the United States and Canada—are issued a unique nine-character sequence that identifies the issuer and type of security. The **Committee on Uniform Security Identification Procedures (CUSIP)** of the American Bankers Association (ABA) created this universal coding system in 1967 to make it easier to organize and manage issues of securities.

The first six digits of the CUSIP number identify the issuer. The next two, which may be numbers in the case of equity securities or letters in the case of fixed-income investments, identify the issue. The last digit is a check digit, which helps the computer ensure that the CUSIP entered was correct.

The CUSIP service is owned by ABA and administered by Standard & Poor's Financial Services. Other numbering systems exist for international securities, with the most common being ISIN, or International Securities Identification Numbers.



standing electronic balances for all DTCC positions and communicate with DTC each day, receiving information about the trades completed that day that involve the deposit or withdrawal of physical certificates or direct registration positions. This program enables the transfer agent and DTC to update and balance the

number of shares held in DTC's nominee name daily.

## WITH PAPER CERTIFICATES

If you still hold a paper certificate and choose to sell your shares, you have three days to deliver the certificate to your broker, who will generally forward it to DTC. The certificate will be deposited into the broker's DTC account and registered in the name Cede & Co. so the ownership changes can be made electronically. Similarly, if you purchase shares and want a physical certificate, those shares are withdrawn from DTC's account by the transfer agent and registered in your name and address.

However, there is likely to be a fee for issuing the certificate. Most, but not all, brokerage firms and transfer agents charge their clients a fee for delivering a physical certificate. In some cases, a firm may refuse requests for a physical certificate. In other cases, a certificate may simply not be available, as more and more public companies have chosen to stop issuing physical certificates altogether.

There is risk in holding paper certificates, which today represent just one-tenth of one percent of daily trading volume. They may be lost, damaged, or stolen, which can delay your ability to transfer them. Also, if missing shares must be replaced, there is a fee that must be paid to buy insurance to cover the possibility that the lost or stolen certificate is accepted and must be honored.

## SECURITY POSITION REPORTS

If most securities are registered in street name, how does an issuer know who owns its securities? Transfer agents have the names of shareholders who hold certificates. For street name shares, issuers and their agents can request from DTC a list of the banks or brokers holding shares on a specific date using DTC's Security Position Reports (SPRs). The banks or brokers can then contact the shareholders about company events.

# Corporate Actions

Big changes can take place in a stock's lifetime.

A corporate action is an event that produces a corporate restructuring, and, very often, affects the value of the company's securities. Some of these actions have a financial impact, directly or indirectly, on the company's shareholders.

One example of direct financial impact is any change in the company's dividend payments that results from an action. The same would be true for bondholders if there were a change in the repayment of company debt. Alternatively, a two-for-one stock split resulting in twice as many shares as each shareholder had before is an example of an indirect financial impact.

It's indirect because, while the split itself does not directly affect the total value of the stock holding (since the price of the shares are adjusted to account for the change in number of shares outstanding), market reactions to the split may drive the stock price up or down.

## A BIG PIECE OF THE PIE

Corporate actions in the United States account for about 50% of all corporate actions announced globally.

Other corporate actions, like renaming the company, generally have no financial impact on its shareholders.

There are about one hundred types of corporate actions, also known as corporate events, which can affect a security. Some of the most common include dividend payments, interest payments, voluntary tender offers, corporate reorganizations, rights offers, convertible securities, warrants, and redemption of municipal and corporate bonds.

## HANDLING PAYMENTS

DTC handles certain essential aspects of corporate action processing. For example, payments generated by certain actions flow from the initiating corporations or their paying agents to the registered owner, Cede & Co., the nominee registration for DTC. DTC, in turn, electronically credits the accounts of the appropriate brokers or banks, which pass the payments along to clients.

Making sure corporate action proceeds are collected and allocated in a timely and efficient way is a giant processing task for the depository because it must deal with thousands of agents around the world. For high-volume agents, DTC has developed direct, automated communication lines to facilitate seamless electronic instruction and payment processing.

## TYPES OF CORPORATE ACTIONS

- Dividend payments
- Interest payments
- Voluntary tender offers
- Corporate reorganizations
- Rights offers
- Convertible securities
- Warrants
- Redemption on municipal and corporate bonds



# LIFE CYCLE OF A SECURITY

## WHAT'S AT STAKE

When significant events occur in the life of a security, they're announced to shareholders and others in a press release, an SEC filing, or both, generating a flurry of activity.

Financial data vendors, such as Bloomberg, Thomson Reuters, and Dow Jones, gather the corporate action information from the announcing companies and pass it along to investors, stakeholders, and other financial data processors. These hundreds of market participants collect, interpret, enter, and re-enter data, as communications from many sources move through multiple channels and into the hands of tens of thousands of investors.

As the volume and complexity of corporate actions increase, the risks of error and delay are magnified with every manual entry along the announcement chain. The cost of processing corporate actions and the risk exposure to errors is estimated in the hundreds of millions annually for the financial services industry alone.

## A BETTER WAY

DTCC, through its Global Corporate Action (GCA) Validation Service collects and validates corporate action information—an enormous flood of faxes, phone calls, messages, emails, and media reports that follow corporate action announcements—not only for US securities, but for securities in more than 160 countries around the world.

In this way, DTCC helps minimize risk and the need for individual firms to interpret or determine the correct

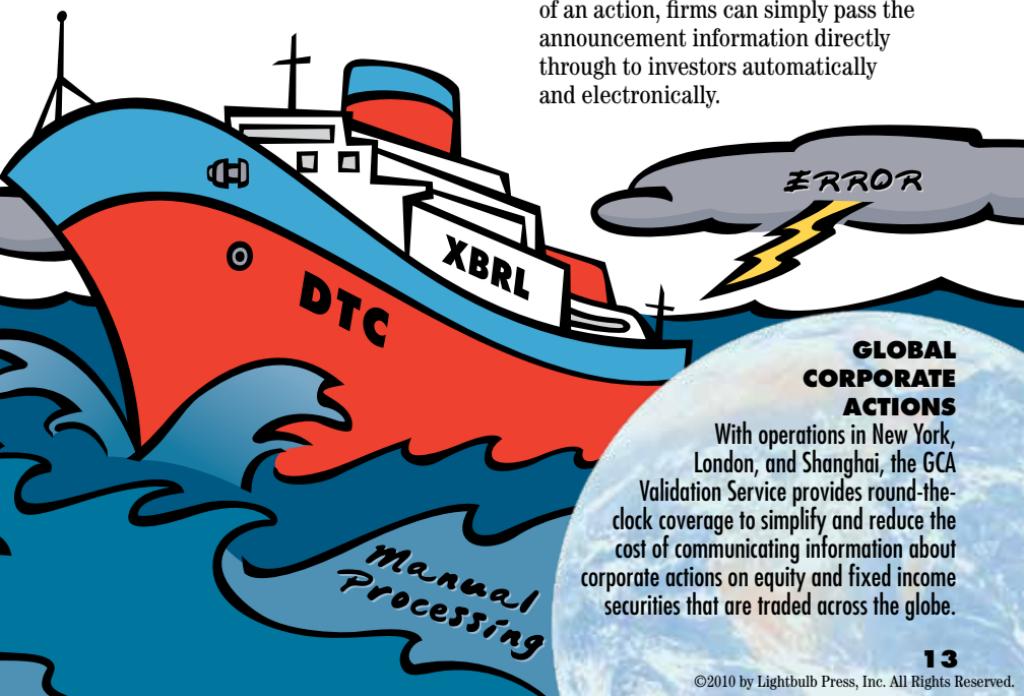
intent and content of corporate events. However, even with DTCC's service, firms feel the need to confirm and check their interpretation of prospectuses and other documents that can often run to hundreds of pages.

## CHANGING THE GAME

DTC is currently undertaking a major initiative to re-engineer its technology and the way it handles corporate actions to address the imbalance between the amount of information that's created and the market's ability to analyze and manage that information effectively. One major step is to modernize its systems to a single, integrated platform capable of handling all corporate actions processing, from underwriting to bankruptcy, for both US and international securities.

Another major innovation is the introduction of a technology called XBRL (eXtensible Business Reporting Language) for corporate actions announcements. The goal is to replace the paper corporate action documents that issuers currently send out with documents that contain electronic data tags in XBRL that can feed DTC's and other financial firms' systems directly without the need to interpret and rekey the information.

Using XBRL messages to electronically disseminate corporate actions data directly from issuers will greatly reduce the cost of corporate actions while also reducing the risk and speeding the announcements to investors. Instead of spending millions to ensure they have the right data and right interpretation of an action, firms can simply pass the announcement information directly through to investors automatically and electronically.



# Dividend Payments

Dividends are part of the return shareholders realize on their investment.

Corporations that realize a profit may choose to pay their shareholders a **dividend**, or share of the earnings, reinvest the earnings in the business, or both. In the United States, dividends are most commonly declared and paid quarterly, usually in cash.

The dividend you're entitled to may be credited to your account at your brokerage firm, you may receive a check, or, if the corporation offers a **dividend reinvestment program (DRIP)**, you may choose to automatically reinvest your dividends to buy additional shares of the corporation. If you hold your shares in certificate form, you generally receive a check for the amount from the issuer or the bank that acts as the issuer's **paying agent**.

DTC plays a major role in facilitating these payments when they're made on issues held in DTC's nominee name of

Cede & Co. For international securities, DTC also coordinates tax-withholding information where it's applicable.

## IT STARTS WITH A PROFIT

If a corporation's board of directors elects to distribute a dividend, it announces that decision publicly through a press release on what's known as the **declaration date**.

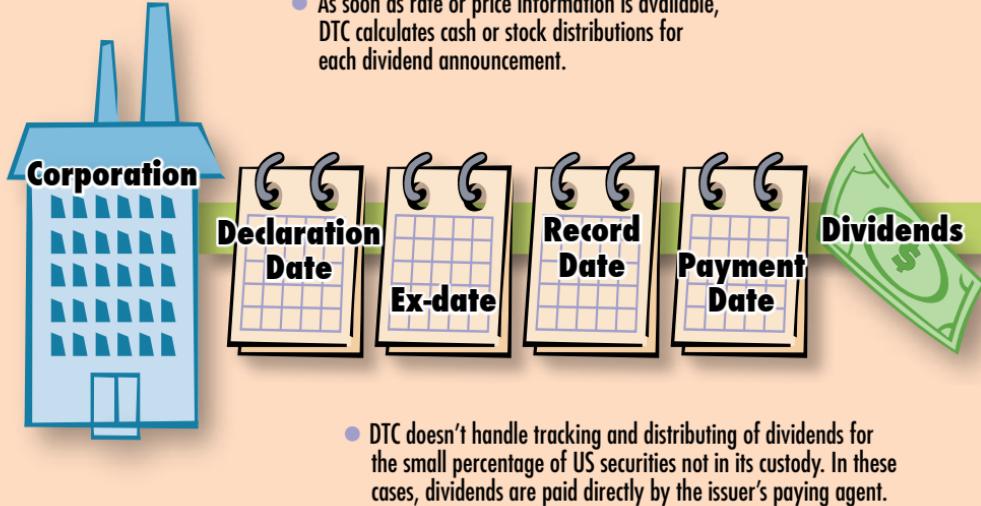
The board also announces the **record date**, or the date by which an investor must be registered as a shareholder in order to receive the dividend income and a **payment date**, or the day when the dividend payment will be made.

When the issuer notifies the exchange where the issue trades about the upcoming distribution, the exchange declares the **ex-date**—the first day the issue will trade without the dividend. It's normally two business days prior to the record date.

## HOW THE PROCESS WORKS

Here's an overview of the way DTC distributes dividends:

- As soon as rate or price information is available, DTC calculates cash or stock distributions for each dividend announcement.



- DTC doesn't handle tracking and distributing of dividends for the small percentage of US securities not in its custody. In these cases, dividends are paid directly by the issuer's paying agent.

### TAX FACTS

Dividend payments are taxable unless the investment is owned through a tax-deferred account, such as an employer sponsored retirement plan or individual retirement account (IRA). However, dividend payments on most US and many international stocks are considered qualifying dividends. That means dividend payments are taxed at the lower long-term capital gains rate, provided the investor has owned the stock the required length of time, rather than at the ordinary income rate.

# LIFE CYCLE OF A SECURITY

## MAKING THE ANNOUNCEMENT

DTC captures and monitors all dividend payment information for the stocks it holds in custody and distributes this information to its participants, primarily major brokerage firms and banks. Its sources include trustees, industry vendors, exchanges, regulatory agencies, paying or remarketing agents, transfer agents, corporations, and participants.

In addition, DTC updates each member firm's stock ownership records after trading ends each day, so it has a record of each firm's daily holdings, including the number of shares. These records are particularly critical for the record date of any dividend payment.

Prior to the dividend's payment date, DTC distributes information on the dividend payment to participant banks and broker/dealers electronically, allowing them to compare their records with DTC's. The announcement includes record date, payable date, settlement date, stock rate, and cash rate.

## PAYING DIVIDENDS

On the payment date, the corporation declaring a dividend, also known as the issuer, uses a paying agent, generally a

bank, to transfer to DTC the dividends owed to the beneficial owners of stocks held in its nominee name of Cede & Co. The transaction is handled electronically, using Fedwire.

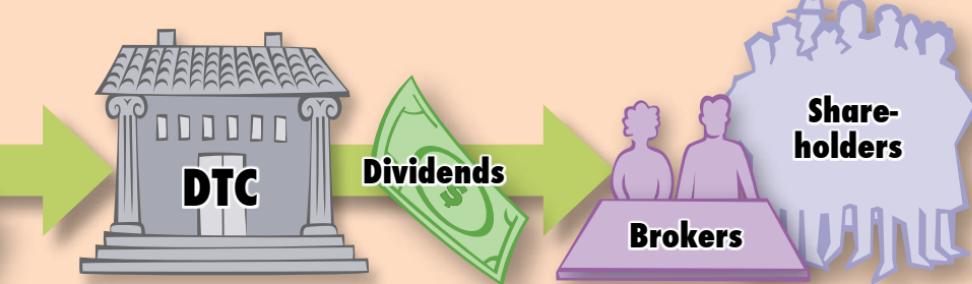
Using its records of holdings of the stock on the record date, DTC distributes payment to the appropriate brokerage firms and banks. They, in turn, allocate the payments to their client accounts.

The centralized, totally electronic processing that DTC's automated Dividend Service provides makes the process of making millions of payments each year highly efficient. Paying agents don't have to cut thousands of individual checks to shareholders, and broker/dealers and banks don't have to deal with thousands of paying agents representing the corporations who owe dividend payments to the firms' clients. It also helps to ensure that the payments are made on schedule and reduces the cost by eliminating the need for other agencies to act as middlemen.

The Dividend Service similarly handles dividends paid on shares issued by corporations based outside the United States that are eligible to be held at DTC but are instead held in its custody with local custodians or depositories.

- DTC processes dividend allocations throughout the day as they are received. DTC allocates practically 100% of the funds it receives from issuers or their paying agents by 3 p.m. Eastern Time on the dividend payment date.

Any funds received after 3 p.m. on the payment date are allocated the following morning. Funds that are received after the payment date are allocated when they're received.



- Sometimes, however, dividends may be paid as additional shares. In that case, each affected participant's DTC position in the security is increased by the number of shares declared in the distribution. Those participants, in turn, allocate the appropriate number of shares to the accounts of clients who own the security. Typically, cash is paid in lieu of fractional shares.

- If a client, through its brokerage firm or bank, has given instructions to reinvest the dividends via DTC's dividend reinvestment program (DRIP), money will not be allocated to DTC by the issuer or its paying agent. Instead, the dividend will be used to purchase additional securities, which will be forwarded to DTC to be credited to the bank's or broker/dealer's account.

# Voluntary Tenders

To engineer a corporate takeover, the weapon of choice is often a voluntary tender.

A **tender offer** is a voluntary corporate action. It's an open offer to purchase some or all of the stock shareholders own in a target company by a certain date and time rather than buying shares in the stock market. Often, it's a third party—typically another corporation, a wealthy individual, or group of investors—trying to acquire control of the target company. However, issuers can also use voluntary tenders to buy back their own security.

Tender offers can be classified as friendly or hostile, depending on how willing the management of the target company is to participate in the prospective

acquirer's bid for shares. Friendly tender offers are negotiated between the corporation and the third party. Hostile tender offers involve an unsolicited—and unwelcome—third-party bid.

Whether the tender offer is friendly or hostile, any person or corporation seeking to acquire more than five percent of the voting class of a company's stock in this way must file a Tender Offer Statement required by Regulation 14D-1 with the Securities and Exchange Commission (SEC), and notify the target company and the exchange on which the target company is listed.

## FOLLOWING A PATTERN

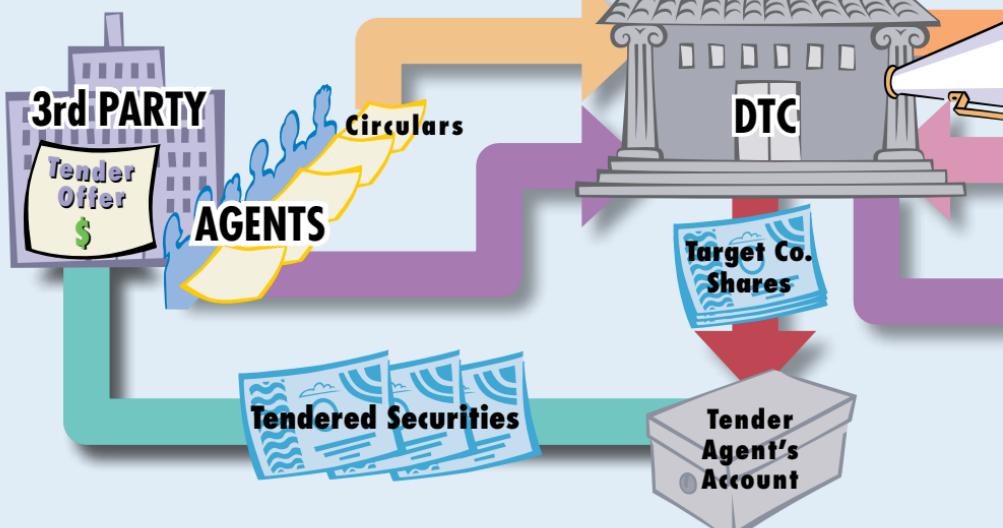
Some tender offers succeed and others fail. Some are resolved quickly while others drag on. But they're all handled in essentially the same way, with DTC facilitating the process because it holds a majority of the shares that will be tendered in its nominee name, Cede & Co. In addition, because of DTC's centralized, automated book-entry system, changes in securities ownership can be made accurately and efficiently.

### 1 INITIATION

A tender offer begins when an individual or entity makes an offer to acquire a block of debt or equity securities by a set date and at a set price. Generally speaking, voluntary tenders involve purchasing equity securities, while exchange offers involve offering one security for another, and may involve exchanging debt for equity, one equity for another equity, or new debt for old debt.

### 2 DATA SHARING

Tender agents or information agents working for the offering party send an information announcement or offering circular outlining the details of the tender offer to DTC, certificate shareholders, and the public.



### 5 DELIVERY OF SECURITIES

DTC generally can deliver the tendered securities to the tender agent on a somewhat delayed delivery date, not the tender expiration date. This allows the depository time to receive

notice from brokers on shares their customers want to tender, balance all tendered positions, and complete submission of any late instructions.

# LIFE CYCLE OF A SECURITY

## SETTING A PRICE

During a tender offer, the soliciting bidder may offer cash or other securities in exchange for the shareholders' stock. To make the transaction more attractive, the potential acquirer usually offers to pay a premium over the current market price of the target company's shares. While the bidder's offer price is fixed, it is usually contingent on shareholders tendering, or selling, a pre-established number of shares.

When a tender offer is announced, you and other shareholders who choose to participate have a limited amount of time to accept. If you hold your shares in street name, you typically notify your broker/dealer that you plan to tender, and the broker/dealer notifies DTC. If enough shareholders accept the offer, the transaction with participating shareholders moves forward.

## MAKING ARRANGEMENTS

Because of risks inherent in tender offers, such as moving stock prices, an offer has a very specific expiration date. DTC requires a contract with the tender offer agent committing it to transaction details, including the precise expiration date, before DTC announces the tender offer to its participants.

In the past, letters of transmittal were required in order to process tender offers, as they indicated a commitment to transfer the physical certificates to be tendered. Now that the majority of domestic securities are held at DTC, all of this information can be communicated electronically through DTC's system. Letters of transmittal are still sent to any shareholder who holds physical certificates directly, of course.

## 3 ANNOUNCEMENT

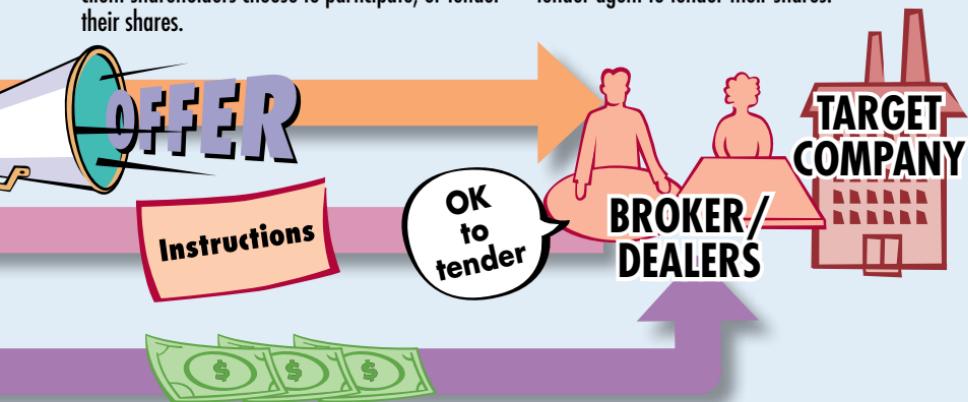
DTC announces the details of the tender offer to its participants, including banks, broker/dealers, and other parties holding securities on DTC's books on behalf of their investors.

## 4 TENDER

After relaying information of the tender offer to its participants, DTC plays a key role as an intermediary in the automated tender process, taking instructions from broker/dealers whose client shareholders choose to participate, or tender their shares.

DTCC creates an account on behalf of the agent to hold tendered shares that participant firms have submitted on behalf of their customers. When DTC receives a participant's instructions, DTC transfers the shares held on its books from the participant's account into the agent's account. After submitting tender instructions, a participant cannot sell or otherwise access the tendered securities unless the tender is changed materially, completed, or abandoned.

Certificate holders deal directly with the tender agent to tender their shares.



## 5 EXPIRATION AND ENTITLEMENTS

When a tender offer expires, and the entity making the offer chooses to accept the shares tendered, the tender agent pays what are known as the entitlements to DTC for shares it holds in its nominee name. Entitlements can take three forms in tender offers: cash, new securities, or a combination of cash and new securities.

DTC forwards the cash to its respective participants and credits their DTC accounts with the

new securities, if any. The participants adjust the appropriate client accounts to reflect the payment. Any shareholder who tendered shares held in certificate form is paid directly by the tender agent.

In the event that not enough shares are tendered, it is up to the entity making the tender offer to revoke the offer, which can be done at any time. Securities are then released from the agent's account and returned to the accounts of participants who have submitted instructions.

# Corporate Reorganizations

Reorganizations can mean major changes for stockholders.

A corporate reorganization is a type of corporate action that can occur during a security's life cycle. In a reorganization, a company may make changes to its legal or operational structures, or it may restructure its ownership.

Companies usually elect to reorganize their business following some major change or problem, such as a bankruptcy, that has caused or may eventually cause the company financial harm. For that reason, the goal of reorganization is usually the same: to improve a company's efficiency, organization, and profitability.

## **MANDATORY vs. VOLUNTARY**

Reorganizations can be mandatory or voluntary. A company's board of directors initiates mandatory reorganizations and, as a shareholder, your participation is required. On the other hand, in a voluntary reorganization, you and other shareholders have the right to decide if you would like to participate.

A stock split is a common mandatory reorganization. In a two-for-one stock split, a company doubles the number of outstanding shares and typically halves the price. For example, if you own 100 shares of a stock selling at \$50 a share for a total value of \$5,000, and the company's directors authorize a two-for-one split, you would own 200 shares initially priced at \$25, with the same total value of \$5,000. Other examples of mandatory reorganizations include changing a company's name and selling an entire company when insiders who hold the bulk of the shares have agreed to the sale.

Alternatively, a tender offer is an example of a voluntary reorganization. In a voluntary tender offer, a third party makes an open offer to purchase all or some of the shareholders' stock in a particular company, by a certain date and time.

## **CUSIP CHANGES**

When a corporate event occurs, the CUSIPs, or unique nine-character sequences that identify the company's equity and debt securities, often must be changed. The existing CUSIP sequences disappear and aren't reused.

However, each nine-character sequence tells the story of changes that

have taken place over that security's lifetime. The first six characters in any CUSIP represent the issuer or company, and those don't change, though the remaining elements do.

## **HANDLING REORGANIZATIONS**

DTC's Reorganization Service provides all reorganization participants, including shareholders, with information about various reorganization activities from

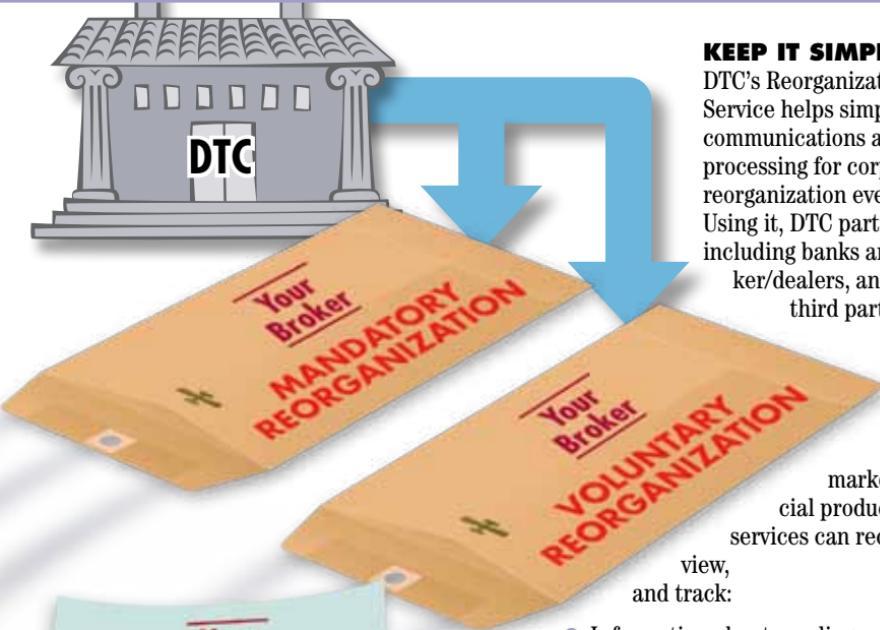


the initial announcement until the action is finalized.

DTC facilitates announcements of reorganization events by making information it gathers from various sources available within what are known as **reorganization announcements**. These announcements also provide participants with updates on what's happening as events unfold. For example, announcements for voluntary corporate actions contain the offer type, expiration date, rates, terms and conditions, and other elements of the corporate action. Announcements for mandatory corporate actions typically include the meeting date, rates, and agent.

In addition, DTC may also be responsible for processing the reorganizations themselves. DTC executes mandatory reorganization transactions based on the details of the company's reorganization announcement. For example, in the case

# LIFE CYCLE OF A SECURITY



## KEEP IT SIMPLE

DTC's Reorganization Service helps simplify communications and processing for corporate reorganization events. Using it, DTC participants, including banks and broker/dealers, and other third parties who

market financial products and services can receive, view, and track:

- Information about pending reorganization events
- Distributions related to reorganization allocations
- Tender offer and exchange offer announcements and instructions
- Announcements and activities related to mandatory reorganizations being processed on behalf of shareholders
- Announcements related to consent solicitations and bankruptcies



of a two-for-one stock split, DTC automatically executes the split by crediting broker/dealers whose clients own the stock with double the original number of outstanding shares. Based on that change, each broker/dealer is responsible for changing the number of shares in the account of each client affected by the split.

DTC plays a slightly different role in voluntary reorganization events. For example, in the case of a tender offer, DTC creates an account to hold shares that you and other shareholders have tendered through your brokers until the buyer decides to finalize the purchase and pays the cash or stock it offered.

In all reorganization events, DTC utilizes its book-entry system so that ownership records are secure, and, when appropriate, securities can be safely and easily surrendered and the appropriate payments made.

## CHILLING OUT

DTC may at times place temporary or permanent restrictions on certain transactions, such as deposits or withdrawals of certificates. Such a restriction is known as a **chill**.

For example, DTC may impose a temporary chill that restricts the book-entry movement of securities, effectively closing the books and stabilizing existing positions until a merger or other reorganization has been completed. A permanent chill could be imposed when an equity has been dematerialized by the issuer. In that case, a chill would end all physical certificate processing except deposits. That way, no new certificates would ever be issued.

Chills are also placed when, among other things, regulators take certain actions, or when there are questions about whether unregistered securities have been illegally issued.

# Retiring a Stock

The time may come when a stock no longer has a place in the capital market.

There are a number of reasons that trading in a particular stock may end. For example, any time a stock's CUSIP changes—after a corporate reorganization, such as a name change, or other corporate action, such as a merger—new stock is issued to reflect the change, and the original stock is retired.

Other times, a stock disappears from the marketplace because it has lost all its value. If a stock you own becomes totally worthless, you're experiencing first hand the primary risk of investing: You can potentially lose all of the money you invested in this stock. If you find yourself in this position, the only real comfort is that there may be tax strategies you can use to help soften the loss, as long as you follow the rules and the stock you're holding qualifies.

## A BAD END

Stock is at risk of being worthless if the company that issued it is insolvent and seeks bankruptcy protection. Whether its fate is sealed or resuscitation is possible depends largely on the type of bankruptcy the issuer enters.

**Chapter 7 bankruptcy** forces a company to shut down operations completely and liquidate, or sell off, its assets to help pay its debts. In these situations, its stock becomes worthless, is no longer traded, and you generally lose whatever you invested.

## NO CRYSTAL BALL

It's hard to predict the long-term performance of a stock at the time it's issued or the number of years it will continue to trade. Most stocks go through cycles of growth and decline that reflect the pattern of the overall market. Some do better than their peers and others fail, sometimes because changes in technology or taste make the company's products or services obsolete, and sometimes when poor management decisions drive the company out of business.



With **Chapter 11 bankruptcy** the goal is paying off creditors, becoming profitable again, and emerging as a stronger entity. During the rebuilding period the corporation's managers may still run day-to-day business operations, and the company's stock may continue to trade.

You may discover, however, it has been delisted by the New York Stock Exchange (NYSE) or Nasdaq, which have strict listing requirements, including price-per-share floors, but continues to trade in the less restrictive over-the-counter market, on either the OTC Bulletin Board (OTCBB) or Pink Sheets. If you have trouble tracking it down, you may want to call your broker or the company that issued the stock to find out if and where it's trading.

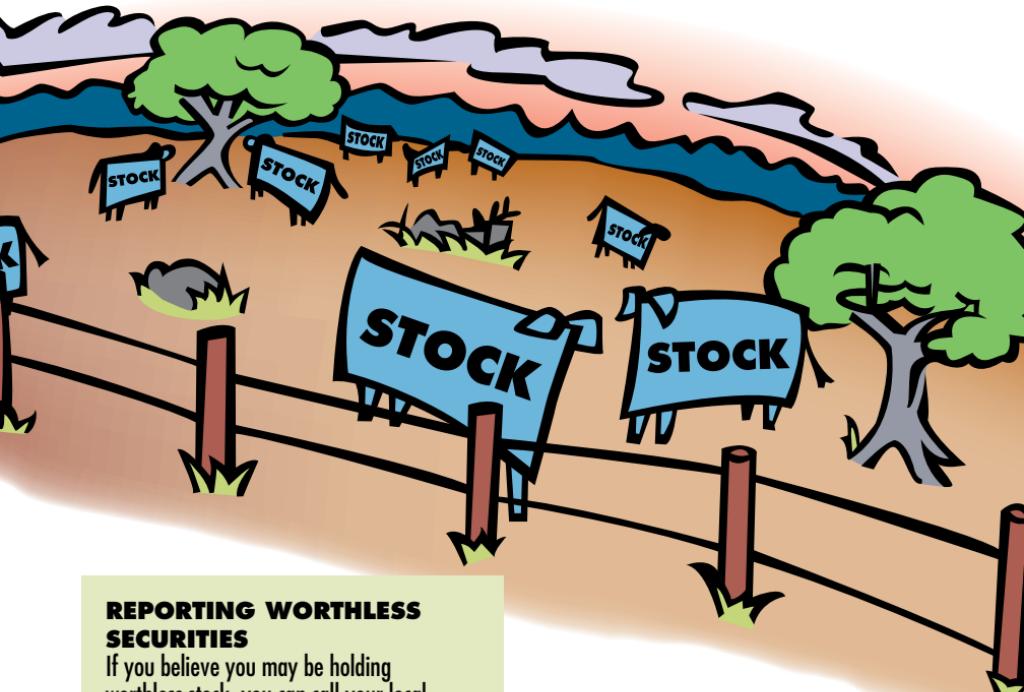
Even if the issuer successfully emerges from bankruptcy, your stock may not regain its value. The company may have canceled its existing shares and, as part of its reorganization plan, when it's again profitable, issue new common stock under a different ticker symbol—an abbreviation used to identify a stock that is being traded.

In some cases, you may be able to exchange your old shares for new ones—though you'll generally receive fewer shares that are worth less than the shares you originally owned. In this case, as in any reorganization, the old shares are worthless and no longer trade.

## FINDING VALUE IN WORTHLESS STOCK

If stock you own becomes worthless, you may be able to take a tax deduction for its **cost basis**—or what you paid for the shares. You must claim the loss in the year the stock became valueless, but you have up to seven years to file an amended return (IRS Form 1040-X) and claim the deduction.

# LIFE CYCLE OF A SECURITY



## REPORTING WORTHLESS SECURITIES

If you believe you may be holding worthless stock, you can call your local Internal Revenue Service (IRS) office or 800-829-1040 for information about how to report worthless securities and claim a deduction for your loss.

Part of the reason you're given so much time to file an amended return is because it can be difficult to satisfy the IRS that the stock you hold is worthless. Even if a stock is trading for pennies a share, it may not qualify. The IRS generally considers stock worthless if:

- The issuer is insolvent, or has gone through an identifiable event, such as terminating its business operations or selling substantially all of its assets
- It's improbable that the stock's value will ever increase
- Certain other factors related to the issuer and investor apply

## NEAR-WORTHLESS STOCK

If you own stock that is nearly, but not technically, worthless, you may be able to do a **tax-loss sale** and use your loss to offset any capital gains you may have for the year.

In order to claim the loss, you must sell the shares you own. You may be able to do so in the secondary market. But, if there are no bids from other investors, you can generally ask your broker to buy them from you—generally for up to \$1 for your entire position in the stock.

There are some restrictions, however, about when you can do a tax-loss sale, so it pays to discuss your options with your tax adviser or other professional.

## THE FATE OF WORTHLESS SECURITIES

DTC participants who hold worthless securities in nominee name may delete them from their accounts by moving them to DTC's **Position Removal (PREM)** system. Alternately, DTC may move securities to the PREM system after notifying affected participants that the worthless securities will be deleted from their accounts.

When a company has been inactive or insolvent for at least six years, DTC may move the deleted shares from PREM to its **Destruction of Non-Transferable Securities Certificates Program**, where the certificates are destroyed.

Before destroying a certificate, DTC creates a digital image of the security and keeps an electronic record of its existence. Although it is unlikely, if the security's value ever recovers, DTC can then use the digital image to return the position to participants' accounts by working with the company's transfer agent. But, by destroying the certificate, DTC eliminates the cost and risks associated with holding and maintaining certificates from insolvent and otherwise inactive companies.

# Fixed Income Issues

The identity of a bond issuer determines the reason for the offering.

The life cycle of a corporate or municipal bond has an issue date, a fixed term, and a maturity date, when it's retired and ceases to exist. The issuer sets when interest payments on a bond will be made and the interest rate it will pay.

If the bond has any special features, such as whether it's callable—or redeemable by the issuer—before its maturity date, or whether it's convertible, which means investors may be able to exchange it for company stock under certain circumstances, those are made clear when the bond is issued as well.

## A SHORT HISTORY

Until 1982, bonds were issued with a sheet of coupons attached. These bearer bonds had no record of ownership, on the certificate itself or on the issuer's books. So if a certificate was lost or stolen, the person in possession could claim interest and principal payments.

To claim your interest, you clipped a coupon and mailed it to the paying agent. That's the origin of the terms *coupon*, which means the interest a bond pays, and *coupon rate*, which means interest rate. And those terms persist, though the issuance of bonds with coupons attached does not. There are, however, long-term coupon bonds issued and still outstanding from before 1982. The vast majority of bearer bonds in the United States are held at DTC, and staff at DTC clip and mail the coupons on behalf of the beneficial owners.

Starting in the 1980s, most coupon bonds that could be converted to registered bonds were converted. This meant that the bondholder's name was printed on the certificate and recorded in the issuer's books. Interest was paid by check or electronically via Fedwire. Today, all bonds are issued in registered format, and the only coupon bonds remaining are close to maturity.

**DTC facilitates the  
and settlement of new  
its Underwriting**



## ISSUING CORPORATES

Corporate bonds are launched much as equities are. The process begins when the company hires a firm, typically an investment bank, as lead underwriter. The lead underwriter assembles a group of other investment banks to work with it to distribute the issue.

The job of the lead underwriter involves:

- Filing a prospectus and other required offering documents with the Securities and Exchange Commission (SEC)
- Working with DTC to make the security eligible for book-entry creation, distribution, settlement, and other depository services
- Marketing the issue to institutional investors in what's known as a road show
- Pricing the issue based on investor interest and the bond's rating
- Distributing the issue to its clients and clients of the syndicate members

A corporation does one thing very differently before issuing new debt than it does before an initial public offering (IPO) of stock. It seeks a credit rating for the bond from one of the major credit reporting agencies. Municipalities seek a rating for new debt issues as well.

A rating is important from the issuer's perspective because it helps determine the interest rate it must pay to attract investors. And it's important to investors as an indication of credit quality—essentially the likelihood the bond issuer will default, or fail to meet its obligations.

## KEEPING TRACK

Fixed income instruments are given unique nine-digit CUSIP identifiers just as equities are. What distinguishes the two types is their use of letters and numbers. The seventh and eighth

positions of a CUSIP reflect the nature of the security being issued, and if the issue is a fixed income security, letters are assigned to those positions. If the issue is an equity, the positions are usually numbers.

## *creation, distribution, bond issues, through Services program*



## ISSUING MUNICIPALS

Municipalities may issue bonds in one of two ways. The first, known as a negotiated arrangement, is similar to the equity or corporate bond issuance process—the municipality hires an investment bank to underwrite the issue.

Using the second approach, known as a competitive bid, the municipality is obligated to select as lead underwriter the bank that will cost the issuer least. If the bond will be repaid with tax revenues, as general obligation (GO) bonds are, the law usually requires competitive bidding to help ensure the bonds are issued at the lowest possible cost.

### AT YOUR SERVICE

DTC facilitates the creation, distribution, and settlement of new bond issues, as it does new equity issues, through its Underwriting Services program. To improve the reporting of trades and price transparency of the newly issued municipal bonds, the Municipal Securities Rulemaking Board (MSRB) requires lead managers to distribute new issue information through DTC's New Issue Information Dissemination Service (NIIDS). (Congress created MSRB in 1975 to oversee the issuance and trading of municipal securities.)

The issues are created electronically, recorded in book-entry form, and, at the time of sale, distributed from the accounts of the underwriter firm to the accounts of the DTC participants whose clients have purchased the offering.

Using NIIDS, underwriters send new-issue information electronically to DTC, as well as any follow-up adjusted information. Once DTC has all the required reporting information, it sends the data to information vendors, dealers, and other market participants so they can match, confirm, and report trades in a timely and accurate fashion.

DTC distributes updates in a real-time electronic format until settlement day.

Once the newly issued bonds are in the marketplace, all secondary market transactions are cleared and settled through DTC for institutional transactions and through DTC and NSCC for broker-to-broker transactions.

### A WORD ON TREASURY SECURITIES

The US Treasury issues its own bonds, notes, and bills through the Bureau of Public Debt. Though historically they were issued as physical certificates, today the Treasury market is completely dematerialized. Your name, as the owner of any Treasury securities, is recorded electronically in book-entry form on the books of the Federal Reserve Bank, which is the depository for these issues.

The Fixed Income Clearing Corporation (FICC), also a subsidiary of DTCC, handles clearing, netting, and settlement for transactions in these securities in the secondary market through its Government Services Division (GSD) and two clearing banks, Bank of New York Mellon and JPMorgan Chase.

### JOINING THE CLUB

To have access to DTC settlement services, a bank, broker/dealer, or other financial services organization must be a full member of DTC. That requires satisfying initial membership requirements and meeting its continuing obligations.

# Fixed Income Services

A bond's life cycle is not always as simple as issue and redeem.

DTC plays a role in both the ordinary and not-so-ordinary events in a bond's life—from making interest payments to facilitating bond calls and dealing with corporate takeovers—that can take place before it reaches maturity.

## PAYING INTEREST

When bonds are held at DTC in book-entry form, the issuer, its paying agent, or its trustee transfers interest payments to DTC as the registered holder of the issue in its nominee name of Cede & Co. On the payable date, DTC credits this interest to its participants' accounts so that these brokerage firms and banks can allocate interest to the accounts of their clients who are the beneficial owners of the bonds.

For the limited number of bearer bonds still in circulation, DTC's Coupon Collection Service (CCS) provides participants with a central location for submitting payment requests and collecting the interest due to their clients.

CCS allows participants to avoid dealing with individual municipalities and paying agents that would otherwise make the process cumbersome and error prone.

## FULL AND PARTIAL CALLS

Some bond agreements include a provision that allows the corporation or municipality to redeem the issue's value, either in full or in part, before its maturity date. To activate a call option, the issuer notifies DTC that a call will be made and the date on which it will occur.

If a full call is announced, DTC chills the security at the close of business on the day before the payable date so that no further trading can occur.

However, to accommodate its participants, DTC allows deposits of chilled

securities through its Reorg Deposit Service. Before DTC implemented this service, participants had to meet strict deadlines to be able to process a call transaction at DTC. If they missed the cut-off date, the transaction had to go through a transfer agent outside of DTC.

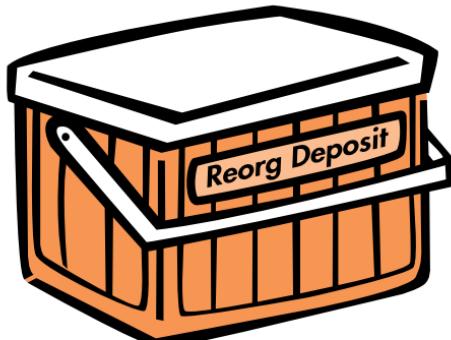
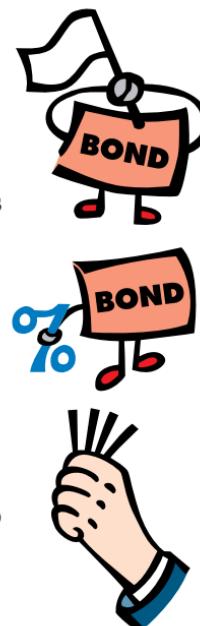
Today, through the Reorg Deposit program, participants may deposit any DTC-eligible securities that are subject to a full or partial call at any time after the announcement. In return, they're credited with the principal and any interest that may be due, plus a premium, or supplemental payment in excess of par value, if the issuer chooses to pay one.

However, to ensure that investors receive payment on the redemption date, the issuer's paying agent must receive the called bonds at least five days before the call redemption date. If a deposit arrives within the five-day window, or later, investors will be paid only after DTC receives the distribution from the paying agent.

## MAKING PARTIAL CALLS

Partial calls may be made:

- By self-selection, allowing investors to surrender bonds until the quota is met
- On a pro-rata basis, where all bondholders must redeem a certain percentage of their holding
- Through an impartial lottery to choose randomly selected investors who must cash in their bonds



If the lottery system is used, two lotteries are held. The first, which takes place at DTC, determines which participants will be affected by the call. The second occurs at the selected participant firms to determine which individual investors must tender their holdings.

# LIFE CYCLE OF A SECURITY

## WHAT HAPPENS WHEN A BOND MATURES

A bond's life cycle typically ends when the issue is redeemed and bondholders are repaid the principal they invested.

Forty-five days before the bond's maturity date, DTC's corporate action announcement system automatically generates and sends a redemption payment announcement to participants. When the maturity date arrives and the issuer transfers funds to DTC, payments are automatically transferred via DTC's book-entry accounting system to its participants' accounts. Those payments are, in turn, credited to the relevant client accounts by the firms.

Once the payments have been allocated, DTC removes the position from its participants' accounts, but keeps a record of the bond, including when it matured and the payments that were made to investors, for at least seven years.

## OTHER WAYS TO END

The end of a bond's life cycle isn't always business as usual. But there are DTC systems in place to help handle special events, such as corporate takeovers and bankruptcy.

**Corporate takeovers.** In a corporate takeover, what happens to the bonds investors hold depends on the terms of the bond agreement. If there is a change of control provision in the agreement, investors may tender their bonds. In exchange, the issuer will either pay par value or a slight premium to par, as well as any accrued interest.

Otherwise, and in cases where investors decide not to tender their bonds, the purchasing company assumes the debt of the target company, and investors continue to receive interest and principal payments in accordance with the original bond agreement.

However, since existing bonds may be downgraded depending on the circumstances of the takeover, investors may be more likely to sell their bonds—either by

redeeming them or by selling them in the secondary market—rather than holding them until maturity and risking loss of market value or default.

**Defaults.** One of the first indicators that a firm is in financial trouble is a default on an interest payment or scheduled redemption. When DTC is aware of the default, it updates its announcement by deleting the distribution rate and noting the default.

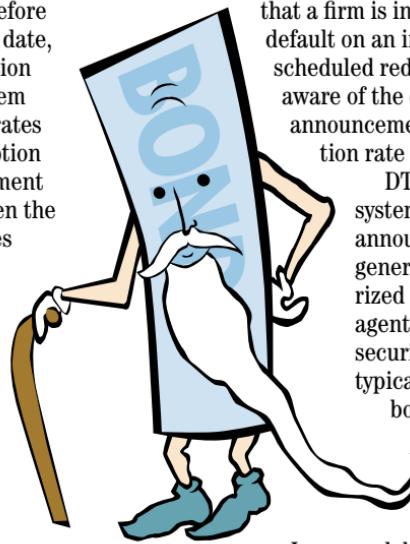
DTC also updates its internal systems to prevent any future announcements from being generated until they are authorized by the issuer or its paying agent. However, trading in the security remains open as there's typically a market for defaulted bonds. And, if a future payment is made, DTC pays as directed by the issuer or the paying agent.

In general, bondholders have better odds of recovering some of the value of their investment than stockholders do if a company enters bankruptcy. That's because creditors are paid before a company's equity investors. However, the fate of a bond depends on the type of bankruptcy the company enters and how or if it recovers.

In Chapter 11 bankruptcy, in some cases, investors receive a new bond, company stock, or a combination in exchange for the bond they currently own.

In Chapter 7 bankruptcy, when a company ends operations, the amount investors receive depends on the assets the company has left to distribute and the type of bond they hold. For instance, secured creditors are paid before unsecured creditors.

DTC typically receives a disclosure statement and ballots that describe the reorganization plan for the security and publishes the event through its Reorg Inquiry for Participants (RIPS) system. If the plan is approved and provides for new entitlements for security holders, DTC announces this through the same system, and, when it has received those entitlements, allocates them to participants.



# Money Market Instruments

Short-term borrowing is a big-time business.

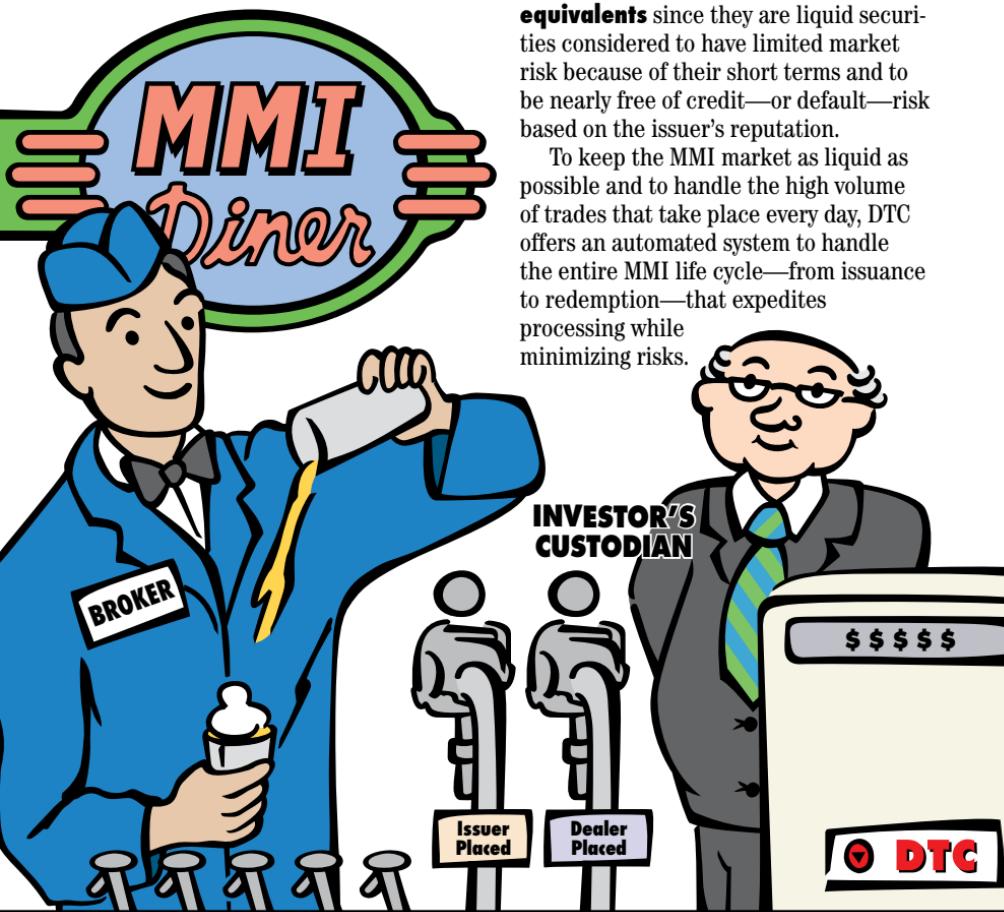
Corporations issue bonds to raise money for long-term projects, but often use money market instruments (MMIs) for short-term financing. One of the most popular MMIs is commercial paper (CP)—short-term commercial debt with maturities ranging from overnight to 270 days.

Other MMIs include:

- Bankers' acceptances
- Institutional certificates of deposit (CDs)
- Medium-term notes
- Tax-exempt notes
- Deposit notes

Even though they are actually debt instruments, MMIs are considered part of the asset class known as **cash equivalents** since they are liquid securities considered to have limited market risk because of their short terms and to be nearly free of credit—or default—risk based on the issuer's reputation.

To keep the MMI market as liquid as possible and to handle the high volume of trades that take place every day, DTC offers an automated system to handle the entire MMI life cycle—from issuance to redemption—that expedites processing while minimizing risks.



## TYPES OF COMMERCIAL PAPER

Commercial paper can be either secured or unsecured. Secured—or asset-backed—paper is backed by specific assets the issuing company owns. Unsecured CP is backed solely by the issuer's promise to pay. However, both secured and unsecured CP are considered high-quality, safe securities because of the financial reputation of the issuers and the high credit ratings they receive from the major credit rating agencies.

## CP INVESTORS

CP and other MMIs are sold almost exclusively to institutional investors, the majority of which are:

- Money market mutual funds
- Commercial bank trust departments
- Financial corporations, such as life insurance companies
- Securities dealers
- Private and government pension funds

Investors interested in purchasing CP who aren't members of DTC must have an account at either a broker/dealer or custodian bank.

# LIFE CYCLE OF A SECURITY

## ISSUING COMMERCIAL PAPER

Commercial paper can be either directly or dealer issued. Directly issued CP is offered for sale by the issuing company itself, while dealer-issued CP is placed with investors by a broker/dealer the company hires. The broker/dealer can act as a distributor for the issuer by helping to place the new issue through a relationship with the institutional investors.

Regardless of how the security is distributed, all issuers use **issuing and paying agents (IPAs)**—in the CP market, these are commercial banks that must be members of DTC—to carry out the issuance and settlement transactions associated with selling and redeeming CP. The issuer authorizes its IPA to enter issuance instructions into DTC's system as well as to pay investors at redemption through DTC's book-entry accounting system. All transactions are processed electronically, since all CP is held in book-entry form.

## MAINTAINING LIQUIDITY

Because such a high volume of CP is issued and redeemed every day, DTC must ensure that processing is as

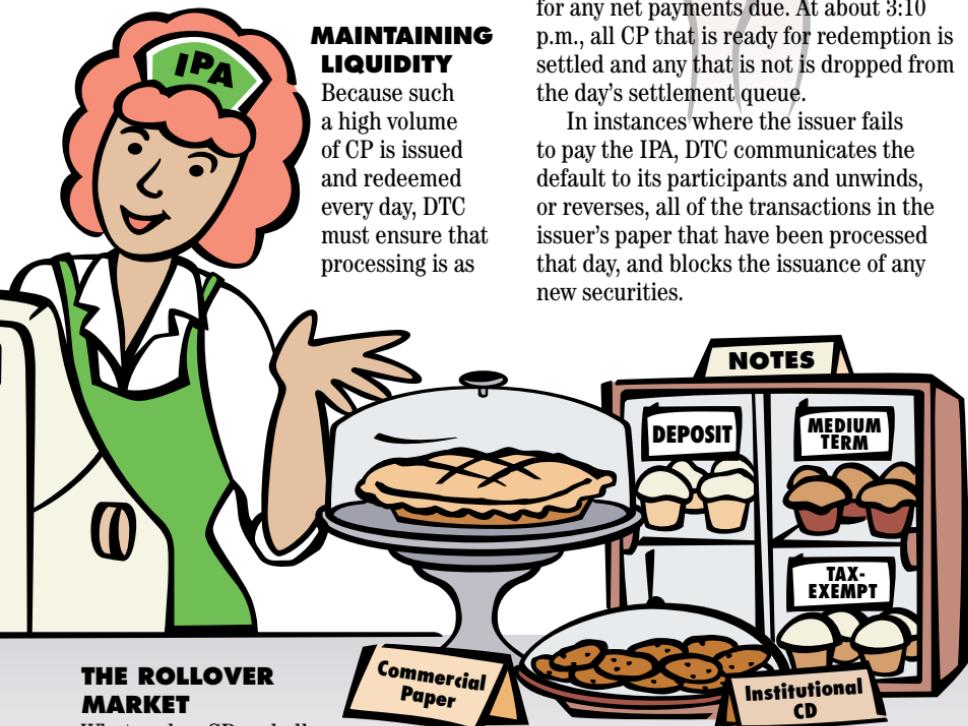
efficient as possible while keeping risk to a minimum.

To do that, DTC compensates for risk inherent in these securities by assessing variable discount levels to the market prices of MMIs. The level of the discount assessed is based on the strength of the ratings the issuer's securities have received from the rating agencies, such as S&P and Moody's, and the days to maturity of the MMI. The less creditworthy the issuer is deemed, the higher the discount assessed, and the greater the collateral that is required.

## HANDLING MATURITY

DTC initiates the book-entry transfer of the maturing securities from the investors' custodian accounts to the designated IPAs' accounts beginning at approximately 1 a.m. the day the paper is to mature. The IPA has until 3 p.m. that day to refuse to pay. A refusal to pay would occur if the issuer defaults on its payment to the IPA for any net payments due. At about 3:10 p.m., all CP that is ready for redemption is settled and any that is not is dropped from the day's settlement queue.

In instances where the issuer fails to pay the IPA, DTC communicates the default to its participants and unwinds, or reverses, all of the transactions in the issuer's paper that have been processed that day, and blocks the issuance of any new securities.



## THE ROLLOVER MARKET

What makes CP and all MMIs unique among the securities DTC processes is what happens at redemption.

Issuers have two options when their CP reaches maturity. Just prior to the maturity date, the issuer may wire cash to its IPA to fund the redemption, and the issuer's account is credited and the position closed.

However, since the CP market is so short term—most issues have maturities of seven days or less—and because companies generally issue new CP as soon as their outstanding CP matures,

issuers typically fund the redemption of maturing CP with the proceeds from their new issues.

So, for example, if a company issues CP on Monday to mature on Tuesday and also plans to issue new CP on Tuesday, it uses the proceeds from Tuesday's sale to fund the redemption of Monday's issue. Then, when Tuesday's CP is ready for redemption on Wednesday, the company repeats the process. This common practice gives the CP market its nickname: the **rollover market**.

# Managing Risk

Protecting against risk provides certainty and safety in the capital markets.

If you invest, you're reminded frequently of the risks you face. Stock prices can drop. Companies can stop paying dividends. Interest rates can go up, reducing the market value of existing bonds. Debt issuers can default. And, if you're wise, you employ a number of investment strategies to help control the negative consequences those risks could have on your portfolio.

There are other risks when you invest that you're less likely to think about, but DTCC does, specifically through its clearing subsidiaries NSCC and FICC, and its depository and settlement subsidiary DTC.

These risks include the possibility that a transaction you authorize won't settle—that when you buy you won't end up with the security you want or when you sell you won't end up with the money that's due you—or that dividends, interest, or principal that you're owed won't be paid.

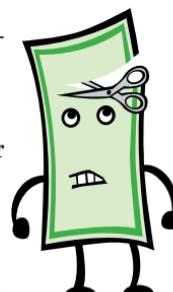
## AVOIDING A MELTDOWN

To ensure that all transactions can be completed in the event a participant firm fails, all of DTCC's clearing subsidiaries maintain risk margining and collateral programs. DTC maintains a Collateral Monitor and a net debit cap.

The Collateral Monitor has two components: cash and securities. DTC requires every participant to maintain an account called the **participants' fund** that holds only cash. The Collateral Monitor also requires participant firms to put up securities as necessary, along with the cash in the participants' fund, to cover settlement obligations, and DTC tracks each participant's collateral account value throughout the trading day.

Securities used as collateral are given a **haircut**. This means DTC discounts the securities, reducing their value by 2% to 100% of the previous day's closing price.

What the haircut means for participants is



## A RISK OVERVIEW

There are risks in clearance and settlement, the chief components of post-trade processing.

DTC also encounters risks in providing asset services for the 3.6 million securities in the depository, specifically collecting and allocating timely payments of cash and/or stock entitlements—the dividends, interest, principal, redemption, and maturity payments due to beneficial owners.

that they must deposit enough securities so that their combined discounted value equals the collateral requirement. What this overcollateralization means for DTC is that if the market as a whole or the price of a single security or sector falls significantly during the trading day, the collateral in a participant's account should still be adequate to cover a default.

NSCC and DTC require a minimum deposit for each firm, calculated daily, and some firms may be required to deposit more during the day if they seem to pose greater liquidity risk.

This collateral could be converted to cash to cover what an insolvent firm owed if it defaulted on its obligations for the trades already in the settlement cycle. Beyond that, DTC also maintains a large line of credit with a number of banks to provide another line of protection if necessary.

## GETTING SETTLED

As a defense against the threat that a participant firm will not be able to meet its obligation to pay what it owes to settle its transactions, DTC imposes a **net debit cap**, which serves as a liquidity control.

The cap is the highest amount a participant is permitted to owe DTC in a business day. It's comparable to the credit limit on your credit card, but is



# LIFE CYCLE OF A SECURITY



**Counterparty risk** is the possibility that a participant firm—a broker/dealer, bank, or other financial institution—will fail and be unable to live up to its side of the deal.

**Operational risk** is the potential that DTCC's systems could fail, either as a result of internal malfunction or external threats, such as natural events or even deliberate attacks, or that a participant's systems could shut

down. It's also possible that a surge in trading volume could overwhelm operations.



In this case, the issuer or the issuer's paying agent may not provide DTC with the required cash or enough information—such as the identifying CUSIP number for the security with interest or dividends due—to make the payment on schedule. To reduce its exposure to default, DTC has developed rules and procedures that allocate only those entitlements that are paid on time and are correctly identified.

**Systemic risk** is the possibility that an inter-related system of financial institutions could be crippled or collapse if one or more of the key components failed. Loss of liquidity would be a primary reason.

unique and dynamic for each firm based on the amount in its collateral account at DTC and the level of its trading activity.

Any transaction that would result in a participant's exceeding its net debit cap is **recycled**, or held in a pending account, until a credit from another transaction, a payment, or other cash infusion increases the firm's account balance. At that point, the settlement process can go forward.

## INSTITUTIONAL TRADES

When a transaction is institutional rather than retail—that is, the parties involved in clearing the trade are a participant brokerage firm and various participant banks acting as agents for an institutional investor rather than two brokerage firms—DTC alone handles clearance and settlement. Those trades do not go through NSCC, DTCC's clearing firm for broker-to-broker trades.

The depository never assumes the role of central counterparty (CCP) in these trades, as NSCC does in retail trades. Instead, DTC offers a different kind of protection to reduce settlement risk.

Any trade that cannot be completed returns to **status quo ante**, or the way things were before the deal was initiated. Any securities or payments that have already been exchanged are returned to the original owner. It's as if the trade never occurred.

## SETTLEMENT: RAIN OR SHINE

As part of the critical infrastructure of the United States, DTC is legally required to have its systems, processes, and functions up and running within two hours of any disaster. So, while it's possible that a trade settlement could be delayed, there has never been an instance where DTC failed to complete daily settlement during more than 35 years of operation.

To ensure this continues to be the case, DTC has developed sophisticated data processing and communications systems to streamline and expedite the settlement process with the use of **straight-through processing (STP)** whenever possible.

DTCC's systems are deliberately redundant and cover DTC and all other DTCC subsidiaries to ensure that processing can continue at alternate locations if there is a problem anywhere in the system.

If there's an unscheduled closing of the exchanges, clearance and settlement continue normally on the regular schedule. But if the closing is more extensive, involving the Fedwire system of the Federal Reserve Bank of New York or other banking systems required for money exchange—as might be the case for the funeral of a former US president—some automated processes continue but settlement itself is delayed until the next business day.

# Paying Taxes

Most countries tax the income you realize on investments issued within their borders.

When you purchase securities issued by a non-US company, you may owe taxes on income you receive from your investment to the country where the company is headquartered, just as you do on income from US securities. Most countries tax the dividends or interest that securities pay, the capital gains realized from selling the securities at a profit, and often both.

In most cases, taxes are withheld when payments are made to investors outside the country, unless there are tax agreements in place between the country of investment and the investor's home country. Such agreements, called **tax treaties**, reduce the tax rate to the more favorable treaty rate.

## AT YOUR SERVICE

DTC, through its family of tax services products, both simplifies and expedites what can be a major stumbling block to international investing: meeting tax obligations without paying more than is legally required.

These services benefit DTC participants, and through them the individual and institutional investors for whom the participants act as agents. They also benefit the securities' issuers in the sense that making tax matters easier makes the securities more appealing to international investors and so attracts more capital.

- **TaxRelief** enables participants to obtain the appropriate rate of withholding tax at the time an income payment is made—known as **relief at source**—or expedited tax refunds when relief at source is not available

- **TaxInfo** provides a centralized source of information to help participants identify the lowest tax withholding rates available to specific clients

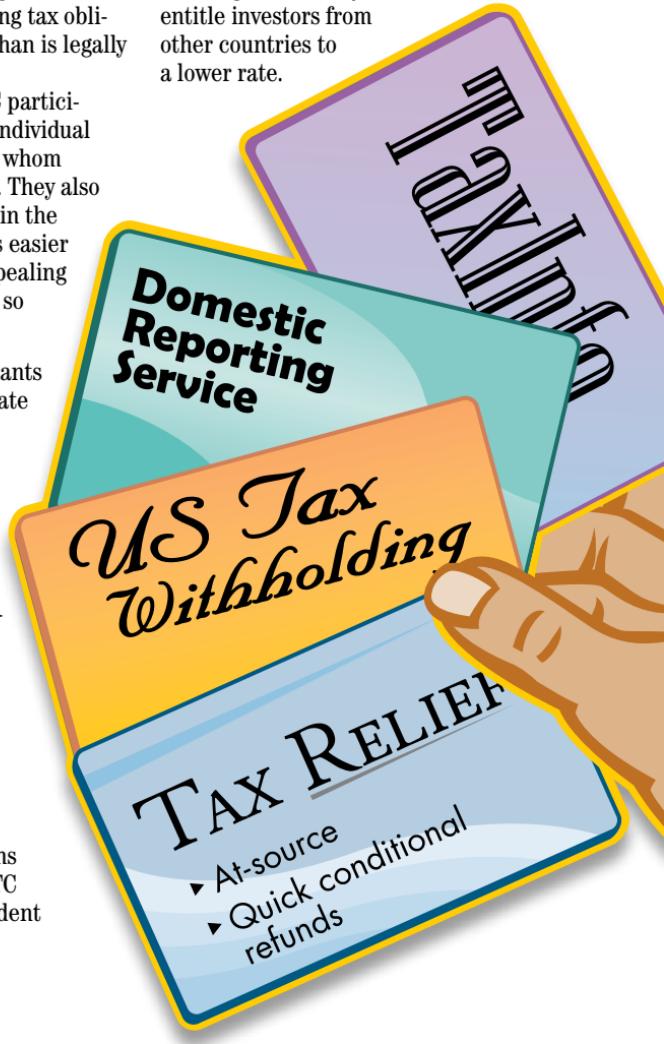
- **US Tax Withholding** aids non-US financial institutions holding US securities at DTC in complying with non-resident alien tax withholding rules

- **Domestic Tax Reporting Service** provides participants with income classification information they need for accurate tax reporting

## FINDING TAX RELIEF

When dividends or interest are paid on your non-US investments, the issuer's paying agent usually withholds the tax that's due and deposits it with the local tax authority. What's at issue is the tax rate that applies, specifically if it is the statutory rate or a lower rate. In this context the statutory, or legally established, rate is generally the maximum rate the country charges on investment income.

A lower withholding rate may apply if the investor is a resident of a country that has a tax treaty with the country where the security was issued or is considered a resident for tax purposes. In other cases, local legislation may entitle investors from other countries to a lower rate.



DTC works with issuers, paying agents, and tax authorities of various countries to determine the lowest withholding tax rate for qualifying beneficial owners of the types of securities that are DTC eligible. This avoids their having to file a post-payable claim, which is a manually intensive process that can be expensive and error prone.

Through its TaxRelief product, DTC can help provide this relief in one of two ways:

- With **at-source** tax relief, the income payment and refund are handled simultaneously in one transaction
- With **quick conditional refunds**, the refund is paid separately through DTC's cash settlement system after the dividend has been paid

## THE NEED TO KNOW

Because income tax rules are complicated and constantly changing around the world, and different tax treaties offer tax relief to different categories of investors, taking full advantage of the tax relief that's available can be difficult. To help participants readily identify the tax rates applicable to a variety of clients holding non-US securities, DTC provides *TaxInfo*, a country-specific document library containing international tax withholding rates and relief entitlements for select markets.

Among the topics each document covers are the definitions of beneficial owners eligible for favorable tax treatment under different tax treaties, the tax withholding rates for various investor types, and other relevant eligibility criteria.

## US TAX WITHHOLDING SERVICES

Tax withholding can also be a challenge for non-US financial institutions holding US securities on behalf of non-US citizens or resident aliens. If those securities are in DTC custody, the depository, through its US Tax Withholding Service, acts as the withholding agent for direct non-US participants and those with qualified intermediary status from the Internal Revenue Service (IRS).

DTC works to simplify the often-complicated tax-withholding process in at least four major ways:

- Aiding participants in complying with US non-resident alien tax withholding rules
- Assisting participants in obtaining the lowest possible US withholding rates for their customers
- Coordinating a range of tax withholding remittance processes on behalf of the participants
- Facilitating claims for over-payment and accelerating the repayment process

As part of this service, DTC also pays dividends, net of the appropriate withholding tax, on the payment date, provides a settlement statement, and remits the tax that's been withheld to the IRS.

## DOMESTIC TAX REPORTING SERVICE

Through its Domestic Tax Reporting Service, DTC accumulates important tax reporting information across various security types for financial institutions. This centralized resource for year-end tax information makes it easier for participants to utilize the correct tax classifications during year-end reporting. This, in turn, ensures that investors get the information they need to file their annual taxes correctly.

# The Global Market

Today's markets are increasingly not just a series of national markets, but a single, global one.

Financial firms have been striving to make it easy for individuals and institutions to invest anywhere in a world that increasingly has focused on raising capital as a key element for economic growth.

In order to assist these firms in providing global services, infrastructure organizations like CSDs have needed to make significant changes in their operations.

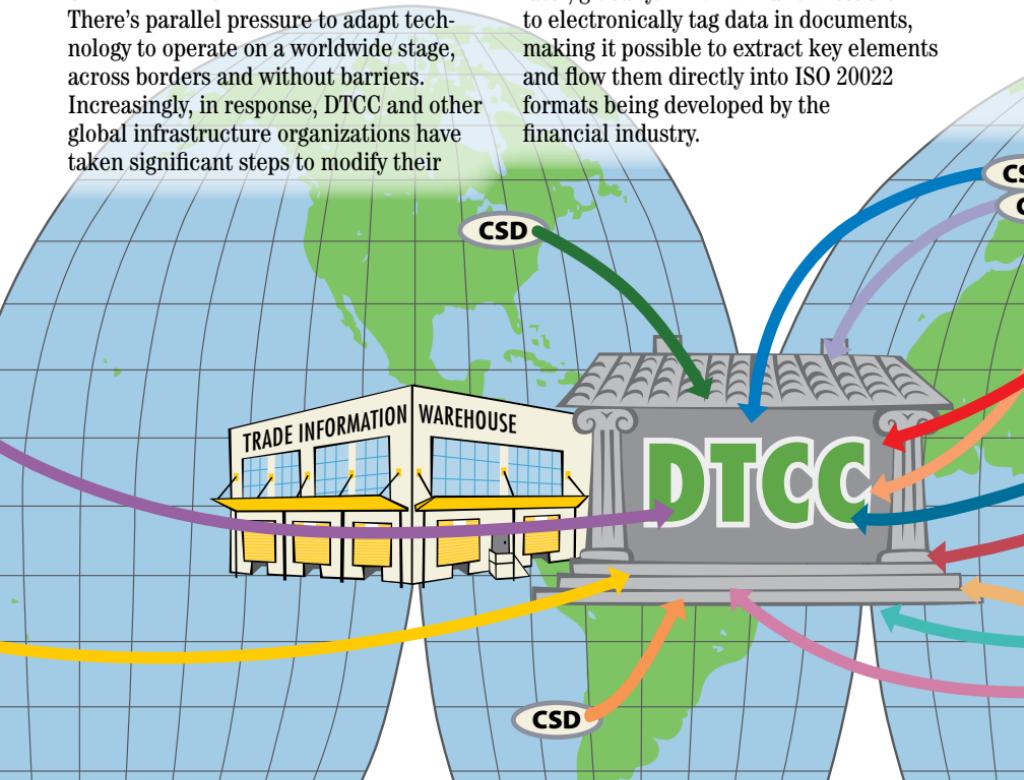
For example, as dematerialization becomes more common, CSDs have had to work out ways for non-citizens of their countries to hold securities electronically.

## INTERNATIONAL MESSAGE STANDARDS

There's parallel pressure to adapt technology to operate on a worldwide stage, across borders and without barriers. Increasingly, in response, DTCC and other global infrastructure organizations have taken significant steps to modify their

systems to play a critical and growing role in investors' being able to access global markets. One of the key technology developments is the increasing use of common International Organization for Standards (ISO) communication formats for various types of messages to and from customer firms, other depositories, and exchanges.

For example, DTCC is leading an effort to get securities issuers to adopt eXtensible Business Reporting Language (XBRL) when announcing corporate actions, a move designed to create a straight-through process for corporate actions, initially in the United States and later, globally. XBRL will allow issuers to electronically tag data in documents, making it possible to extract key elements and flow them directly into ISO 20022 formats being developed by the financial industry.



## ACSDA

Regional associations have also been formed by CSDs for broader interaction and information sharing on a regular basis. DTCC was a founding member in 1999 of the Americas Central Securities Depositories Association (ACSDA), composed of 25 CSDs from the Americas. ACSDA works to

foster the exchange of ideas and communications between CSDs in the Americas, and represents the Americas to other industry organizations.

## NEW INFRASTRUCTURES

DTCC has also taken a leading role in developing new post-trade infrastructures for alternative market classes. It was the first to develop a matching and confirmation service for over-the-counter credit default swaps contracts in 2003,



# LIFE CYCLE OF A SECURITY

## ELECTRONIC LINKS

One of the main ways to achieve some degree of interoperability is by establishing electronic links between depositories where there is significant volume.

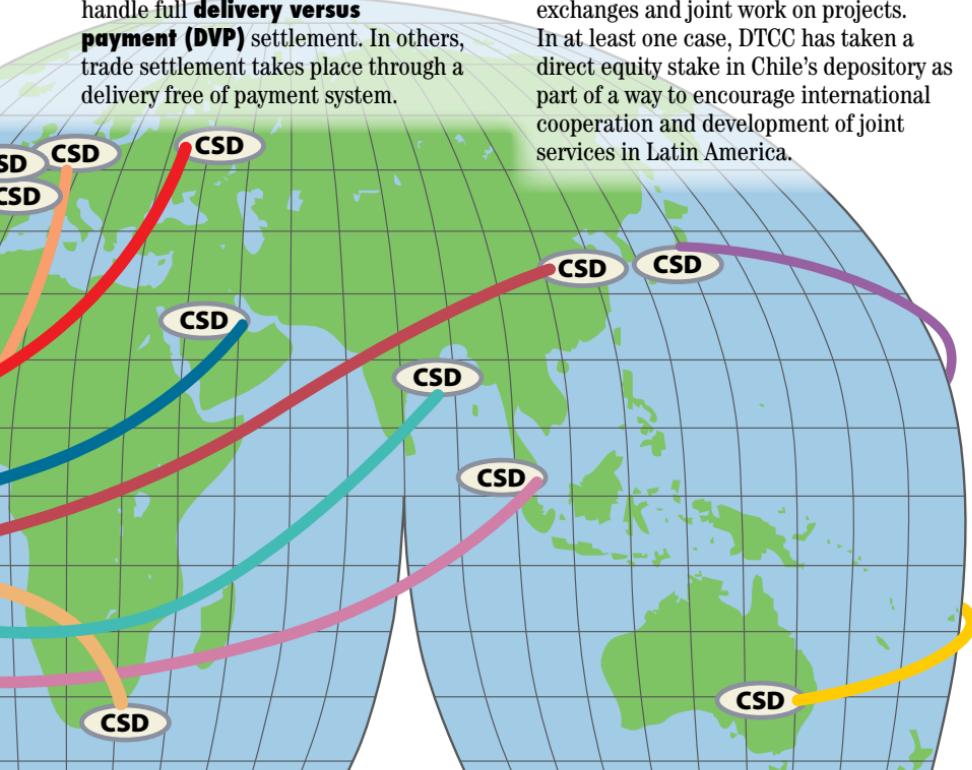
For example, collaboration between DTC in the United States and other CSDs worldwide has facilitated clearance and settlement of US securities traded abroad. In addition, DTC holds book-entry positions representing securities issued by non-US entities on behalf of its US participants in its accounts at depositories in other countries. For example, if a client of brokerage firm A, a DTC participant, purchased shares of stock X issued by a company headquartered in the United Kingdom, DTC would hold those shares in its account in the UK CSD.

These links between DTC and other CSDs worldwide allow electronic movement of securities in place of expensive, time-consuming movement of physical certificates. In some cases, these links can handle full **delivery versus payment (DVP)** settlement. In others, trade settlement takes place through a delivery free of payment system.

Through a DVP system, security payment and delivery are done at the same time. The securities are transferred from seller to buyer in a book-entry process at the end of the day, with a corresponding exchange of payment recorded when the buyer's securities are dispatched.

**Delivery free of payment**, on the other hand, allows the electronic movement of shares between DTCC's US depository and other CSDs abroad, but there is no money payment connected with the movement. Payment for these traded shares is handled outside the respective securities' settlement systems, directly between the buying and selling firms.

CSDs are also working to encourage increased information sharing and cooperation globally. DTCC has signed memoranda of understanding (MOUs) with a number of central securities depositories and clearing organizations around the world covering information exchanges and joint work on projects. In at least one case, DTCC has taken a direct equity stake in Chile's depository as part of a way to encourage international cooperation and development of joint services in Latin America.



and the first to develop a global repository for those instruments to store all the details of the swap contracts. Now called the Trade Information Warehouse, the repository not only reports on credit default swaps trading and volume to the public and regulators globally. It also provides key asset servicing functions, such as payment reconciliation, central settlement and processing of credit events, and successor events.

The concept of a global central repository

for OTC derivatives trades has proven so successful that the International Swaps and Derivatives Association (ISDA) and the industry have supported the concept for other OTC derivatives classes, issuing and awarding to TriOptima a contract for developing a repository for global OTC interest rate derivatives and another to DTCC for a repository for OTC equity derivatives. Both repositories are now in operation, providing trading data to the industry and regulators globally.

# GLOSSARY

**Beneficial owner** is an investor who owns a security even though the title is held in the nominee name—also known as street name—of a central securities depository, such as DTC. The beneficial owner receives the dividends or interest the security pays, has the right to sell the security, and, in the case of stock, is entitled to vote on certain corporate matters.

**Block trade** is a securities transaction that typically involves the sale or purchase of 10,000 or more shares of stock or \$200,000 or more in bonds in a single order. Typically institutional rather than retail investors make block trades.

**Book-entry** describes the accounting system that enables DTC to transfer ownership records for securities held in its nominee name of Cede & Co. electronically from the selling broker's account to the buying broker's account when the transaction is settled. With book-entry accounting, no physical securities change hands.

**Call** is an issuer's election to exercise a right to redeem a security before its maturity date. In a full call, an entire issue is redeemed, while a partial call affects only a portion of the issue. The call provision, if it is included, and the first date on which it can occur, are specified in the bond agreement, or deed of trust.

**Central counterparty (CCP)** is an entity that interposes itself as the buyer to every selling brokerage firm and the seller to every buying brokerage firm to guarantee that a trade will eventually settle even if the original buying or selling brokerage firm defaults.

**Central securities depository (CSD)** is an organization that has custody of immobilized securities issued in certificate form and dematerialized securities issued in electronic rather than certificate form. The CSD provides a portfolio of services relating to those securities on behalf of its participants.

**Clearance** is one step in the post-trade process that finalizes the transfer of security ownership. It involves confirming the details of the transaction and, when a central counterparty such as NSCC is involved, guaranteeing that the trade will settle even if one of the original parties defaults.

**Commercial paper (CP)** is a form of money market instrument that is short-term corporate debt issued by companies that are believed to pose limited risk of default and need a regular source of

capital. The maturities of CP range from overnight to 270 days.

**Corporate action** is an event that may impact the value of a company's securities and generally has a direct or indirect effect on its shareholders and bondholders. Among the range of possible corporate actions, some of the most common are dividend or interest payments, stock splits, tender offers, rights offerings, securities conversions, warrants, and corporate reorganizations.

**Custodian bank** holds assets, including individual securities and American Depository Receipts (ADRs), for institutional investors, corporations, and wealthy individuals. The custodian also collects investment income generated by client assets, provides corporate communications to its clients, and participates in the settlement of securities transactions on their behalf.

**Custody** means having possession of assets, including securities, that exist in either physical or electronic form.

**Default** occurs when an institution or individual obligated to make a payment or deliver an asset fails to do so on time and in full. Default may be the result of inability or unwillingness to pay.

**Dematerialization** is the process of eliminating paper certificates from the securities processing cycle and replacing them with electronic records.

**Direct registration** means holding a security directly by having ownership recorded electronically on the books of the issuer or the issuer's transfer agent.

## Dividend reinvestment program

**(DRIP)** allows investors to channel dividends directly into purchases of additional shares of the security on which the earnings were paid. The income isn't paid out to the shareholder, but taxes are due on the reinvested amounts unless the security is held in a tax-advantaged account.

**DTC eligible** describes financial assets that qualify to be held at DTC and traded and serviced through its electronic book entry system. Among the requirements, the issue must meet the definition of financial asset established by the Uniform Commercial Code, meet or be exempt from certain SEC requirements under securities laws, and have a CUSIP number.

**Immobilization** occurs when securities certificates are placed in the custody of a central securities depository to reduce the movement of physical securities.

# GLOSSARY

Ownership records for immobilized securities are updated electronically using a book-entry system, first at the CSD and then at the participant firms whose clients are the beneficial owners.

**Infrastructure organization** is a firm whose mission is to support affiliated organizations and improve their capacity to deliver effective services by identifying and developing the necessary resources, creating compatible systems, ensuring effective communication, and mitigating risk.

**Initial public offering (IPO)** allows a corporation to raise money in the capital markets by making its shares available to the investing public for the first time. In most cases, the corporation works with the investment banking division of a brokerage firm, which facilitates the deal, underwrites the offering, and, working with a syndicate of other banks, distributes the shares at a set price, primarily to institutional investors or wealthy individuals. The issuer receives the proceeds of the sale, minus the underwriter's fee. The securities are generally made eligible at DTC for book-entry transfer.

**Institutional transaction** is a securities trade in which an organization, such as a mutual fund, hedge fund, pension fund, or endowment, purchases or sells a large block of stocks, bonds, or other securities.

**Issuer** is the corporation or government body that offers a security—such as a stock or bond—for sale to the public or through a private placement.

**Issuing and paying agent (IPA)** acts as an agent for an issuer of money market instruments to handle the financial transactions associated with selling and redeeming these securities. In this context, an IPA is a commercial bank that must also be a DTC participant.

**Liquidity** describes the ease with which an asset can be converted to cash. Securities that are easily converted to cash may be described as highly liquid and those that aren't easily converted as illiquid.

**Maturity date** is the day the term of a bond, money market instrument, or other debt security ends. Repayment of principal and the final interest payment are due at maturity, although the security may be rolled over with a new maturity date.

**Money market instruments (MMIs)** are short-term, high-grade debt securities including commercial paper, bankers

acceptances, and institutional certificates of deposit. Most MMIs have terms of 270 days or less because those with longer maturities must be registered with the Securities and Exchange Commission (SEC).

**Net debit cap** is the highest amount a DTC participant is allowed to owe the depository in a business day. The amount is determined separately for each firm, based on the collateral it has on deposit and how much trading it is doing.

**Nominee name**, also known as street name, is the name in which immobilized securities are registered with the issuer or the issuer's transfer agent. Securities held at DTC are registered in its nominee name of Cede & Co. and recorded on its books in the name of the brokerage firm that represents the beneficial owner. On the brokerage firm's books, the securities are assigned to the accounts of their beneficial owners.

**Participant organizations** are the broker/dealers, banks, investment managers, and other financial firms who are members of clearing agencies, such as DTCC's subsidiaries, DTC, NSCC, and FICC.

**Participants' fund** is a collateral account that each DTC participant must maintain to cover the risk it poses as a result of settlement activity in the DTC system and to provide DTC with a source of liquidity for the settlement of transactions. The required deposit, which is all cash, is calculated daily.

**Paying agent** is an institution, normally a bank, authorized by an issuer to pay the principal plus premium, if any, and interest on any debt securities or dividends on equities on behalf of the issuer. If the security is in DTC custody, the paying agent authorizes an electronic money transfer to the depository, which distributes the income to those participants whose clients hold the security. If the security is held in certificate form or through direct registration, the paying agent sends a check to the holder or authorizes an electronic transfer of the amount due.

**Payment date** is the day on which a dividend or other entitlement to holders is paid. The issuing company's board of directors announces the payment date at the same time it announces the dividend.

**Record date** is the date by which an investor must own a stock in order to be eligible to receive an upcoming dividend. The issuing company's board of directors

# GLOSSARY

announces the record date at the same time it announces the dividend.

**Record owner**, or record holder, is the individual or institution whose name is recorded as the holder of record on the books of the security's issuer. The record holder is not necessarily the beneficial owner. That is the case when Cede & Co. is the record owner of immobilized and dematerialized securities in the custody of DTC, while individuals and institutions are the beneficial owners.

**Redemption** is the process of repaying a debt obligation, either at the maturity date or before. Early redemption is handled by calling some or all of the issue.

**Reorganization** is a corporate action that may result in changes to the company's legal, operational, or ownership structures. These changes are generally made to address a problem, improve efficiency, organization, and profitability, or increase the market price of the corporation's stock.

**Retail transaction** is a securities trade that involves two brokerage firms, one representing the buyer and the other representing the seller. Retail trades are cleared, netted, and settled through two DTCC subsidiaries, NSCC and DTC.

**Secondary market** includes the exchanges, trading rooms, and electronic networks where securities transactions involving buyers and sellers take place following an initial distribution of stock in an IPO or the issuance of a bond. Securities' issuers receive no proceeds from these trades, as they do when the securities are sold for the first time.

**Security** is a stock, bond, or other investment product issued by a corporation or government as a means of raising capital by offering investors something of value in exchange for cash. For example, purchasing stock gives the buyer an ownership share in the issuing corporation while a bond represents a debt owed to the holder.

**Settlement** is the post-trade process that finalizes the exchange of and payment for securities that have been traded. When these securities are dematerialized or immobilized in a CSD, such as DTC, the change in ownership is recorded electronically on the books of the brokerage firms whose clients authorized the trade. No certificates change hands. Financial settlement is handled by electronic transfer between the accounts that the buying and selling firms maintain at DTC.

**Settlement date** is the date on which a securities transaction becomes final, with the seller's broker delivering the security and the buyer's broker delivering payment. Different securities can have different settlement dates. For example, with US stocks and municipal or corporate bonds, the settlement date is three business days after the trade date, or T+3. With US government securities, it's one day after the trade date, or T+1. Different countries can have different settlement periods.

**Settling bank** handles the electronic payment or receipt of funds associated with netted securities transactions for the financial firms that have selected the bank to act on their behalf. Payments in the United States move through the Federal Reserve's Fedwire system and are irrevocable.

**Straight-through processing (STP)** describes an automated communications environment in which data are entered once and forwarded electronically through every phase of a securities transaction from trade to settlement, never having to be re-entered. This reduces errors and speeds up processing.

**Syndicate** is a group of investment banks or brokerage firms assembled by the lead underwriter of a security offering to underwrite, or distribute, a new stock or bond issue to investors that the syndicate's members identify.

**Tender offer** is an offer to purchase some or all of the outstanding stock that investors hold in a target company at a certain price by a certain date. The bidder may offer cash or other securities as payment, provided that a sufficient number of shareholders agree to sell.

**Transfer agent** is a commercial bank or other financial organization retained by a corporation to maintain records of ownership for its securities issues and send out proxy materials and other corporate communications to owners of record. In some cases, the issuer acts as its own transfer agent.

**Underwriter** is the investment banking division of a broker/dealer that works with corporations or municipalities who want to issue stock or bonds to raise capital. The underwriter creates and files the prospectus, assembles a syndicate to assist with distribution, markets the new issue, distributes it and sends money to the issuer, and initially maintains price stability in the market as the new issue begins to trade. For its efforts, the underwriter receives a fee.

# A U T H O R S

**VIRGINIA B. MORRIS** is the editorial director of Lightbulb Press. She oversees the development of a wide range of consumer content on investing, personal finance, and the financial markets for print and interactive media. She serves as a consultant for financial literacy and consumer education organizations for both adults and young people, and she's a frequent guest speaker on financial radio and television programs, as well as at national conferences.

Virginia is the author of more than a dozen books on financial subjects, including *Guide to Clearance & Settlement*, *Guide to Understanding Money and Investing*, *An Investor's Guide to Trading Options*, *A Woman's Guide to Investing*, *Guide to Understanding Exchange Traded Funds*, *An Advisor's Guide to Behavioral Finance*, *Your Guide to Understanding Investing*, *Saving for Retirement*, and *Guide to Understanding Direct Investing*. Her articles appear in a wide variety of magazines and on corporate websites.

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## LIFE CYCLE OF A SECURITY

explores the role of central securities depositories in the United States and global capital markets, with a particular focus on the part The Depository Trust Company (DTC) plays in launching new securities issues and providing the essential services that security issuers require. The guide explains the process of creating and distributing stocks and bonds in the primary and secondary markets, the details of clearing and settling retail and institutional transactions, and the sophisticated infrastructure that enables the seamless payment of dividends and interest, smooth management of tender offers and other corporate actions, and essential risk protection in an increasingly global environment.

The booklet is titled "LIFE CYCLE OF A SECURITY" and "CENTRAL SECURITIES DEPOSITORY". It features a banner with flags of various countries. The title "Central Securities Depositories" is prominently displayed. The subtitle "The certificate stops here." is visible. The booklet is described as exploring the role of central securities depositories in the United States and global capital markets, focusing on The Depository Trust Company (DTC). It covers the process of creating and distributing stocks and bonds, clearing and settling transactions, and managing corporate actions like dividends and interest payments.

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