



BNY MELLON
CORPORATE TRUST



Depositories – An Overview

An overview depositories in the securities industry

Agenda

- I. Securities Industry Overview
- II. Example of a paper trade
- III. The Depository Trust & Clearing Corporation (DTCC)
 - Depository Trust Company (DTC)
 - National Securities Clearing Corporation (NSCC)
- IV. Euroclear and Clearstream – The European Marketplace
- V. BNY Mellon and Depositories

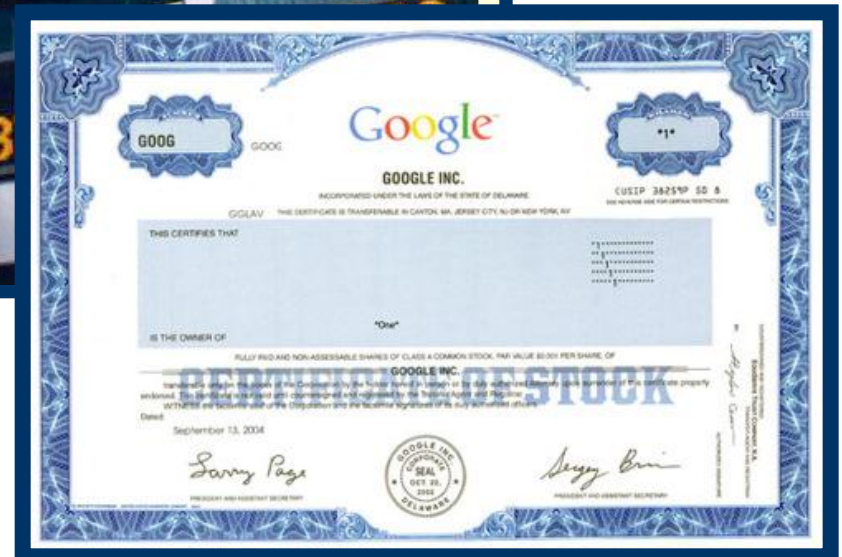
Section I.

Securities Industry Overview

Review of the securities market and the explosive growth that created problems

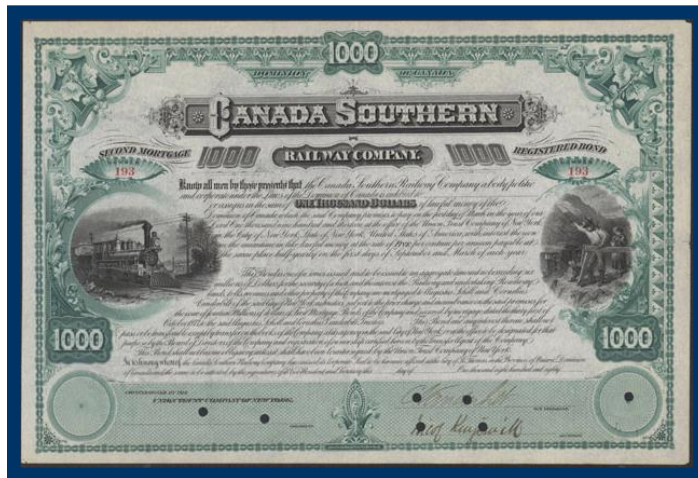
What is a Stock?

- Stocks are EQUITY securities
- Stock owners have an ownership position in a corporation
- Corporations sell shares of common stock to raise money for expansion projects, etc.



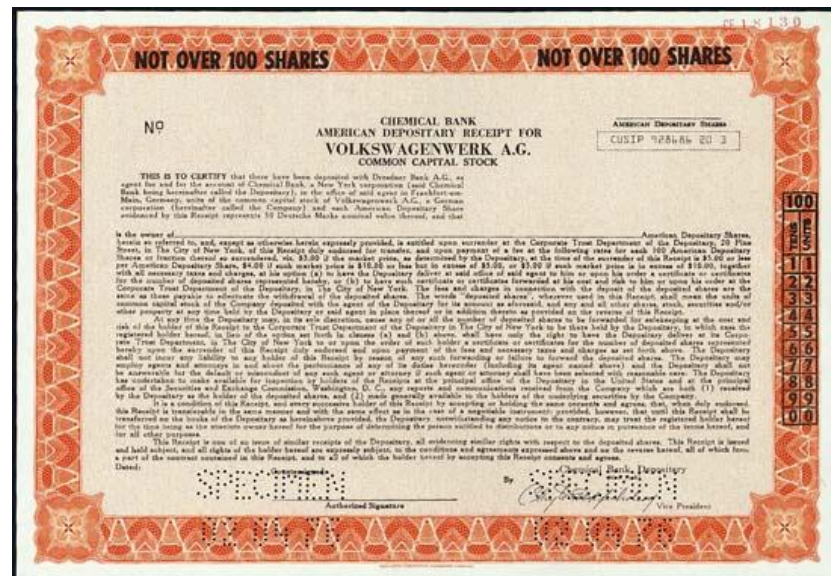
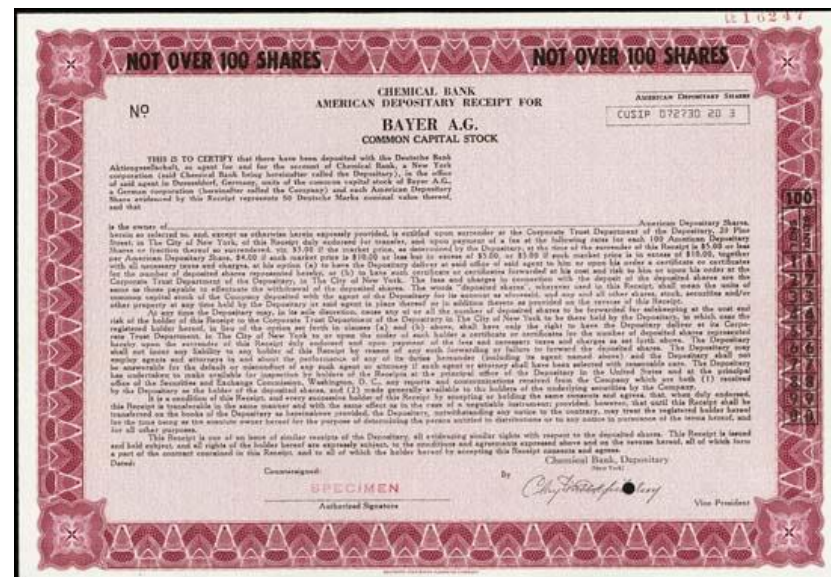
What is a Bond?

- A debt security contract between an issuer and an investor
- Represents a loan to the issuer with payment of interest
- Can be secured or unsecured



What is a Depositary Receipt?

- Financial instrument that represents a security (usually equity) that is issued by a foreign publicly listed company.
- Allows investors to hold shares in equity of other countries.
- Most common type is an American depositary receipt (ADR), which has been offering investors global investment opportunities since the 1920s



Paper, Paper, Paper

- Stocks and bonds originally issued in paper formats
- Often referred to as certificates



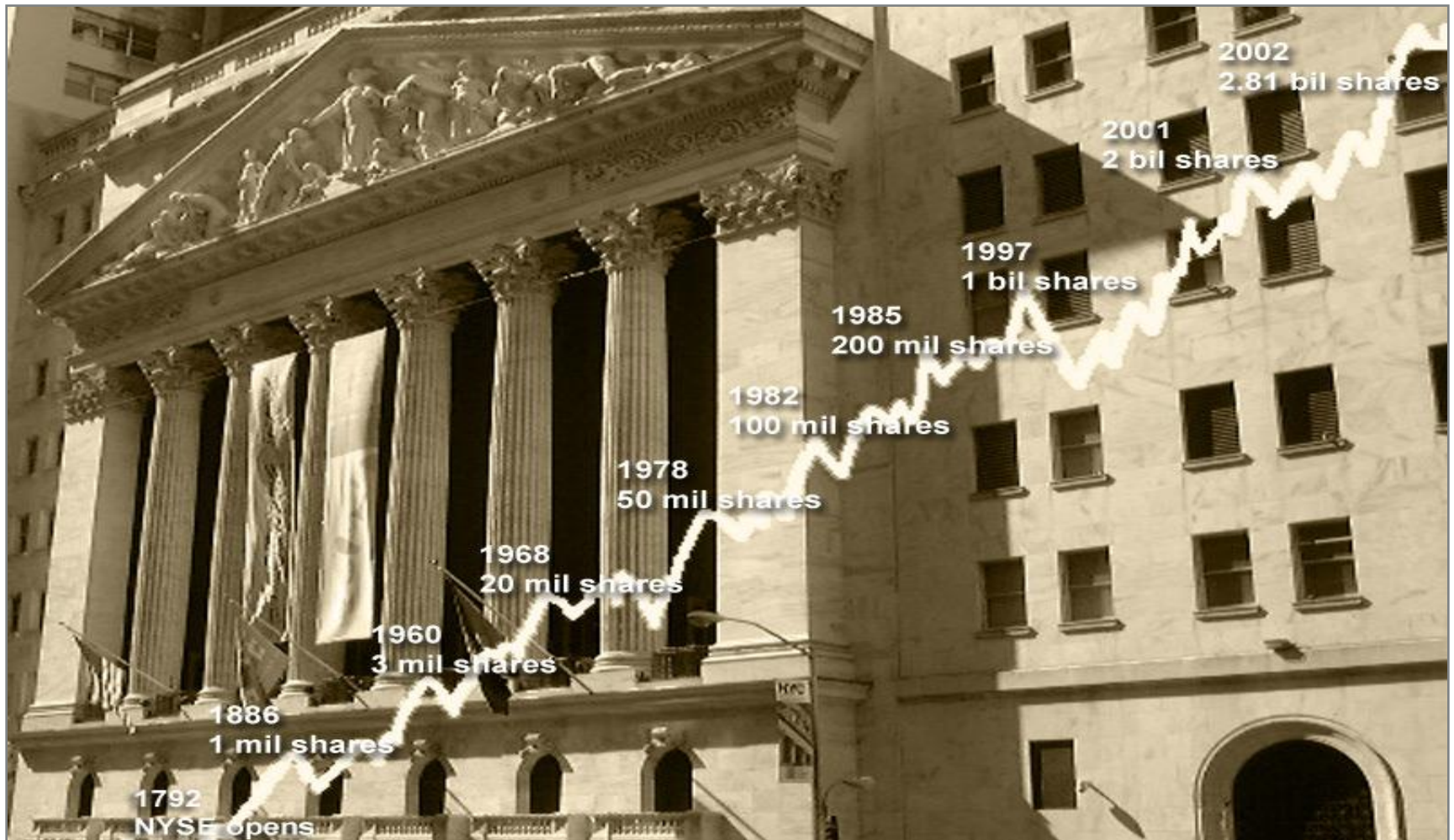
The Securities Industry

- Facilitates the buying and selling of securities
- Industry makeup:

Products	Players	Marketplaces
<ul style="list-style-type: none">• <i>Stocks</i>• <i>Bonds</i>• <i>Depository Receipts</i>• <i>UITs</i>• <i>Mutual Funds</i>	<ul style="list-style-type: none">• <i>Regulatory (SEC)</i>• <i>Brokers</i>• <i>Banks</i>• <i>Rating Agencies</i>• <i>Consumers</i>	<ul style="list-style-type: none">• <i>Stock Exchanges</i>• <i>NASDAQ</i>• <i>Bond Exchange</i>

- NYSE (New York Stock Exchange) established in 1792
 - Members established rules for buying and selling securities
 - First stock traded on NYSE was *The Bank of New York*

NYSE Trading Volume – 1792 to 2002



Paper Process Overwhelms

Early Problems at the NYSE

- Originally, stocks and bonds issued in paper format
- Problems and risks:
 - Staff
 - Facilities
 - Handling
- Paper processing overwhelmed by increasing trade volume
 - Staffing 7 days a week
 - Trading suspended on Wednesdays



Risks of Paper Securities

- Storage by vendors and holders
- Theft
- Damage
- Forgery
- Loss
- Transportation



Knowledge Check

Answer these questions:

- Stocks and bonds are the same type of investment.
 - True?
 - False?
- In the early years, what did the securities industry experience?
 - A rapid increase in trade volume and investment
 - Growing pains from the dependence on paper processing
 - The need to hire many employees for processing and transportation
 - Expenses related to building safe facilities to house live securities
- From 1792 to 2002, trade volume on the New York Stock Exchange...
 - Leveled off after an increase from 1850-1900
 - Increased dramatically from 1792 to present

Section II.

Example of a paper trade

Example of an All Paper Trade

John Smith has a stock certificate for 1,000 shares of IBM. He wants to sell 500 shares.



First, he must get the stock certificate and take it to his broker. What risks and challenges are already evident in this process?

Paper certificate has to be stored somewhere and can be lost, damaged or stolen. Timely process to retrieve and deliver the paper document.

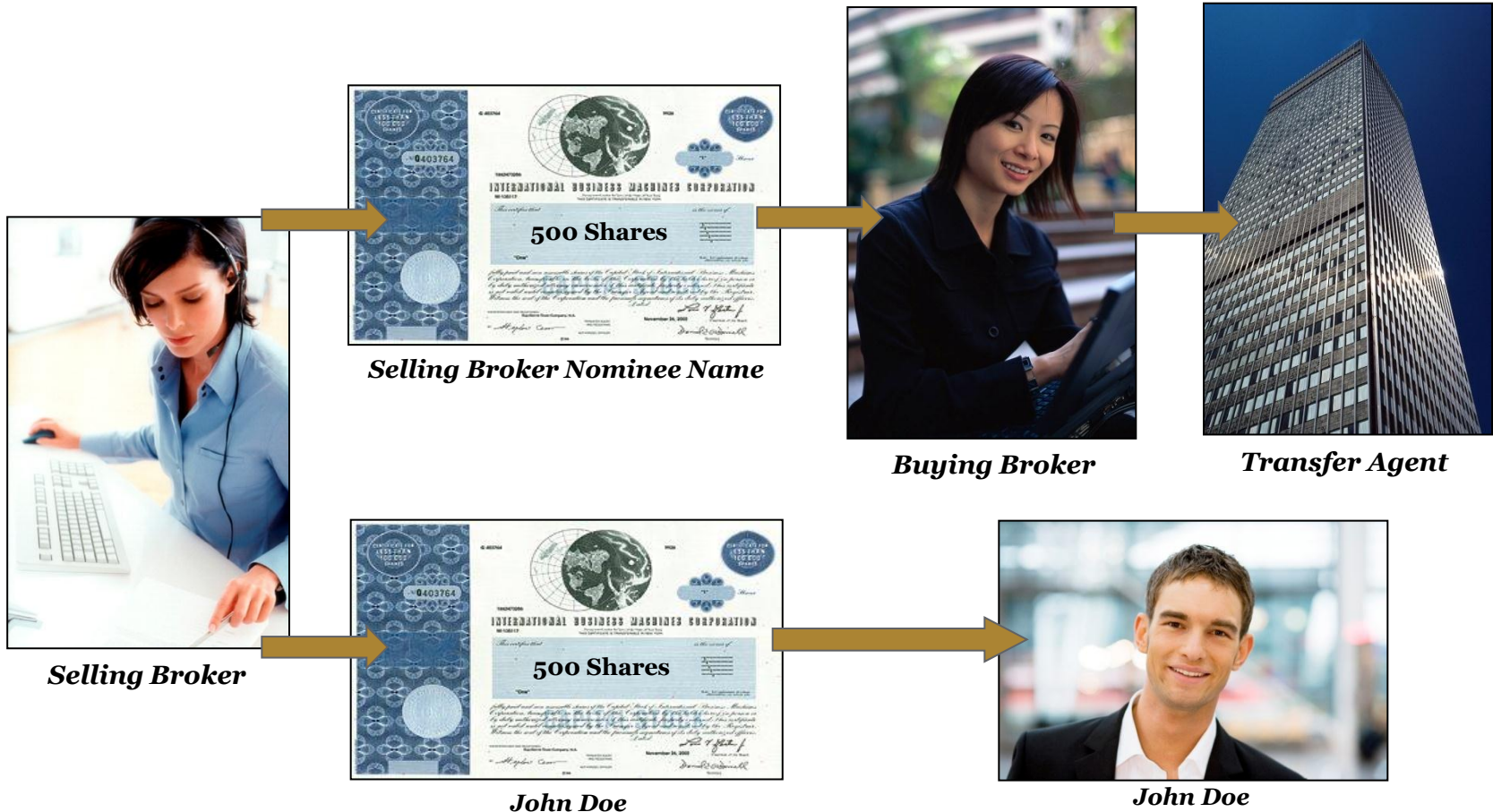
Example of an All Paper Trade - Continued



What are the problems with this process?

Time consuming process delays sale; many human interaction points; excess paper; three live securities in transition.

Example of an All Paper Trade - Continued



What are the problems with this process?

Time consuming process delays sale; many human interaction points; excess paper; live securities in transition.

17



Live securities in transit; need for bondholders to store live securities.

Paper Trade Summary

Consider this paper driven, labor intensive, time consuming process multiplied by the trade volume of today (As of February 2009 – over 4 billion trades per day).



Section III.

Depository Trust Company (DTC) and National Securities Clearing Corporation (NSCC)

An overview of the DTC and the NSCC and how they changed the securities industry

Depository Trust Company (DTC)

- DTC was established in 1973 in response to the paperwork crisis to:
 - Immobilize securities for broker-dealers and banks
 - Complete book-entry maintenance of securities
- Separated from New York Stock Exchange in 1975
 - Becomes a trust company owned by its users (called Participants)
 - As of February 2009, over 1,200 unique legal participants



Industry Changing Solutions - Immobilization

Immobilization

- Physical stock or bond certificates no longer traded.
- Global notes can exist that represent the value of the entire offering and serves as contract for deal.
- Book-entry record keeping system when stock or bond ownership changes are kept electronically.
- Changes made to the records with no need for canceling old certificate and issuing new ones.



Certificate	Holder
A_1	Jane Johnson
A_2	Butler Securities
A_3	Campbell Harrison
A_4	Mr. and Mrs. Ken Simpson

National Securities Clearing Corporation (NSCC)

- National Securities Clearing Corporation (NSCC) established in 1976
 - Handles the clearing and settlement of transactions
 - Instead of multiple transactions for each buy or sell, one end of day adjustment to the security is made



Industry Changing Solutions – Multi-Lateral Netting

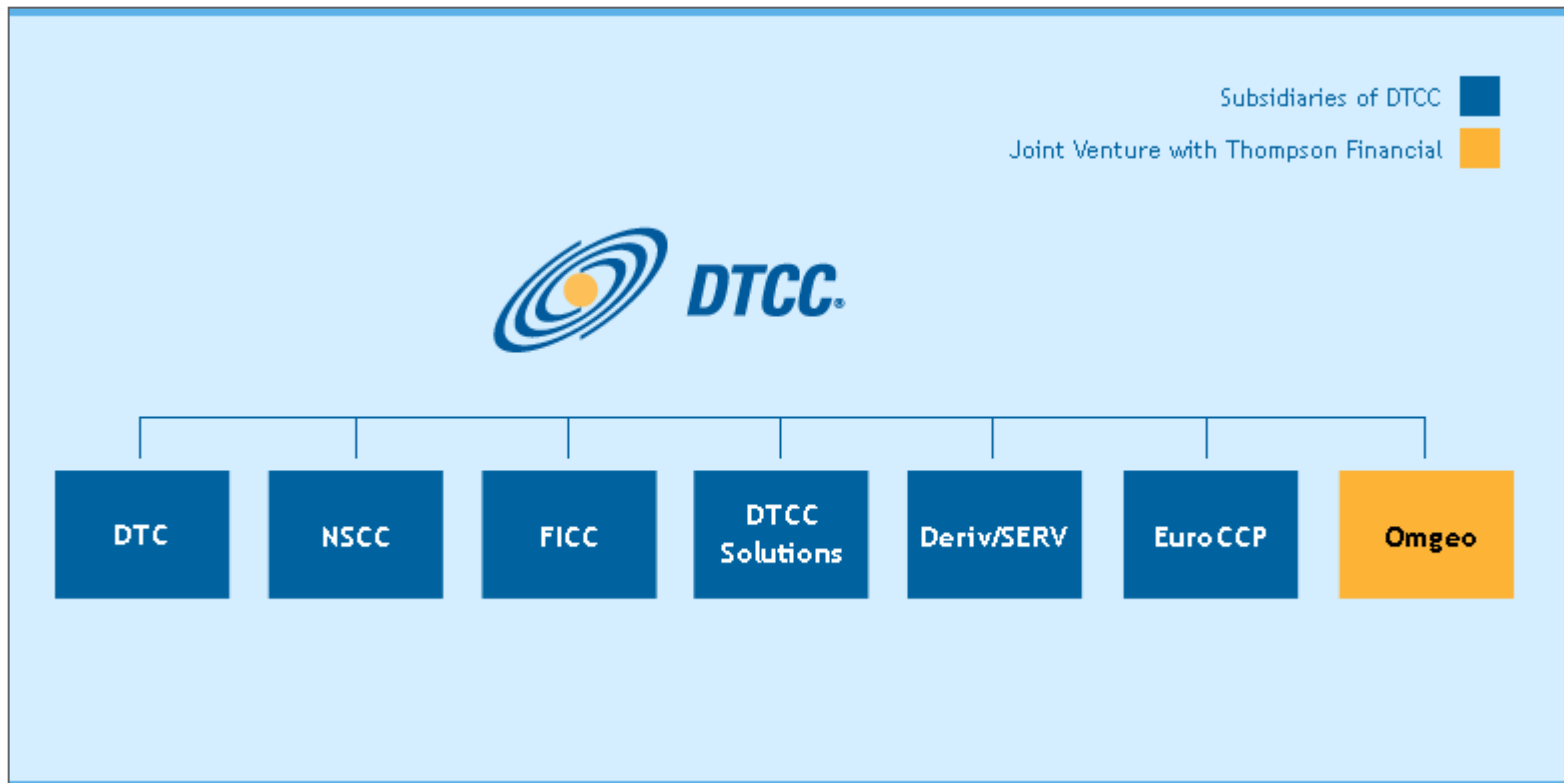
Netting

- National Securities Clearing Corporation (NSCC) established in 1976
- Uses multi-lateral netting
 - One net movement per security and one net dollar amount per firm per day
 - Instead of multiple transfers after each buy or sell, one transfer of funds executed at end of day to settle

Client: Merrill Lynch	Shares Traded	Trade Amount
Sell 100 of 123456AB2	-100	\$2,875,000
Buy 55 of 123456AB2	+55	-\$1,890,765
Sell 10 of 123456AB2	-10	\$450,000
Sell 125 of 123456AB2	-125	\$3,876,950
End of day settlement to Merrill Lynch account for 123456AB2	180	Net settlement of \$5,311,185

Depository Trust & Clearing Corporation (DTCC)

- DTC and NSCC merge in 1999 to create the Depository Trust & Clearing Corporation
- Share leadership (Board of Directors), eliminate overlap, leverage resources
- DTCC is largest financial services post-trade infrastructure organization in the world, with 75% of the world's liquidity passing through DTCC transactions



DTCC Subsidiaries

SUBSIDIARY	DESCRIPTION
DTCC	Created to reduce costs and provide clearing and settlement efficiencies by immobilizing securities and making "book-entry" changes to ownership of the securities. DTC provides securities movements for
NSCC	Provides clearing, settlement, risk management, central counterparty services and a guarantee of completion for certain transactions for virtually all broker-to-broker trades involving equities, corporate and municipal debt, American depositary receipts, exchange-traded funds, and unit investment trusts.
FICC	Created in 2003 to reduce costs and give DTCC customers a common approach to fixed income transaction processing by integrating the Government Securities Clearing Corporation and the Mortgage-Backed Securities Clearing Corporation.
DTCC Solutions	DTCC Solutions LLC was created to deliver information-based and business processing solutions to financial intermediaries globally.
Deriv/SERV	Provides automated matching and confirmation services for over-the counter (OTC) derivatives trades, including credit, equity and interest rate derivatives. It also provides related matching of payment flows and bilateral netting services.
EuroCCP	European subsidiary of The Depository Trust & Clearing Corporation (DTCC) that provides pan-European, low-cost clearing services.
Omega	Plays a critical role in the global securities industry as a central information management and processing hub for broker/dealers, investment managers and custodian banks.

DTCC 2008 Performance Data



How much is \$1.8 Quadrillion?

\$1,800,000,000,000,000

DTC Concepts Become Industry Norms

FAST (Fast Automated Securities Transfer)

- Arrangement between DTC and transfer agents to eliminate the movement of securities certificates.
- The transfer agent maintains Global Note registered in the name of Cede & Co.
- DTC and the Fast Agents must reconcile the outstanding principal amount for FAST eligible securities on a daily basis.
- FAST securities can be converted to physical form.
- DTC charges \$5,000 fee on the deal to be FAST, fee not charged for Book Entry Only.

BEO (Book Entry Only)

- Arrangement between DTC and transfer agents to eliminate the movement of securities certificates.
- No physical certificates, Global Note issued and held by DTC.
- Cheaper than a FAST deal.

For BNYMellon GCT, what percentage of deals annually close either as FAST or BEO?

95%

Names and Registrations

Street Name

- Legal name that allows the negotiation of that security.
- Brokerage firms hold securities for their clients in the brokerage's street name ("street name registration").
- Brokerage firm will keep record of who the true holder is ("beneficial owner").
- Holder will not get certificate but will get portfolio/holding statements.

Nominee Name

- Name used by a corporation as a generic registered owner on a stock or bond certificate.
- Nominee names makes the processing of security transfers easier.
- Most common is **Cede and Co.** for the DTC.
- Name originated from **C**entral **D**epository
- **Hare & Co.** is BNYMellon's nominee name



Managing Risk

With trillions of dollars in securities changing hands through DTC, the risk can be great

- DTC helps reduce risk by stepping in between seller and buyer and assuming responsibility to deliver the security to buyer and payment to seller
- Participants must maintain adequate capital and collateral levels to settle and trade through DTC
- DTC operational risk programs review internal process and systems regularly
- Stress tests review losses that could occur under extreme market conditions
- Alternate sites exist outside New York headquarters for disaster recovery and contingency planning



Knowledge Check

Answer these questions:

- The Depository Trust Corporation (DTC) and the Depository Trust & Clearing Corporation are the same thing.
 - True?
 - False?
- Immobilization in the securities industry means what?
 - Bond owners are not allowed to move their certificates out of their homes.
 - Paper certificates are held in a secure vault and the changes are made electronically for sales and transfers.
 - Paper certificates cannot cross international borders legally.
- The benefit of settlement is...
 - A single movement of money at the end of day settles all the activity of the day.
 - Fewer errors are likely with one movement of money vs. thousands of movements of money.

Section IV.

EuroClear and ClearStream

How depositories function outside of the United States

Securities Industry in Europe

- In 1960's, the Eurobond was introduced as an investment vehicle.
 - High coupon rate
 - Very popular and resulted in high volume
- Processing of the Eurobond overwhelmed the securities industry
- European marketplace has unique challenges that differ from the United States marketplace
 - Multi-currency vs. single currency
 - Different laws and regulations from country to country
 - Transportation across country borders requires expensive insurance and is time consuming, risky



European Depositories

Euroclear

- Came into existence in Brussels in 1968
- Aimed to increase efficiency and minimize risk in settling USD Eurobonds, a fast-growing international securities market
- Was part of Morgan Guaranty Trust Company of New York and the first International Central Securities Depository (ICSD) in the world
- Immobilizes the transfer of physical securities and settlement of transactions through the simultaneous book-entry exchange of cash and securities
- Securities not held at Euroclear, but at banks/agents assigned as Common Depositories (ex: BNYM London)
- Common Depository responsibilities include safekeeping and reconciling global notes with Euroclear along with the rate dissemination and projected funding notices with Euroclear.
- JPMorgan is conduit bank in the U.S. for Euroclear transactions



European Depositories

Clearstream

- Ensures that cash and securities are promptly and effectively delivered between trading parties
- Over 300,000 domestic and internationally traded bonds, equities and investment funds are currently deposited with Clearstream
- 2,500 customers in over 110 countries across 45 markets, settles more than 250,000 transactions daily
- Formed in January 2000 through the merger of Cedel International and Deutsche Börse Clearing
- Securities not held at Clearstream, but at banks/agents assigned as Common Depositories (ex: BNYM London)
- Common Depository responsibilities include safekeeping and reconciling global notes with Clearstream along with the rate dissemination and projected funding notices with Clearstream.
- Citi is conduit bank in U.S. for Clearstream



Section V.

BNY Mellon and Depositories

Some examples of how we work with these depositories

Municipal Bond Interest Payment Processing

How DTC facilitates asset servicing

- Collects, processes and allocates dividend and interest payments to holders



As the issuer, The City of Dallas pays bondholders \$750,000 of interest on the payable date.

As the Paying Agent, BNYM gets the funds and then sends them to the holder. In this case, it is Cede and Co. (DTC).

DTC receives the funds and then has to distribute to the actual holders or their brokers.

The holders receive their interest payments from the DTC via their broker.

Physical Bond Payment Processing—Via DTC

How DTC facilitates asset servicing

- Collects, processes, and allocates dividend and interest payments to holders



Broker holds a registered bond or bearer bond that has reached its maturity date and is looking to be paid. Broker sends bond to DTC.

DTC, providing a service to the broker is willing to work with the paying agent directly to obtain payment. DTC mails the bond to the paying agent.

Agent receives the bond and performs a review. Upon validating the bond is good and funds have been provided, payment is made to DTC.

DTC will receive the funds and then remit the funds back to the Broker.

Municipal/Corp Bond Variable Rate Processing

How DTC/Euroclear facilitates variable rate processing

- Collects, announces, and sets allocation to participants on variable rates at the CUSIP level



The issuer will determine the attributes of a rate reset and assign a calculation agent.

As the Calculation Agent, BNYM will calculate the rate and provide the rate information to the depositories

DTC receives the rate and will announce the rate to all of its participants and “stage” an allocation basis on each participants position.

The participants will receive a rate announcement and plan to receive the interest on the future payable date.

Additional Resources

Clearstream

- http://www.clearstream.com/ci/dispatch/en/kir/ci_nav/home

Euroclear

- <https://www.euroclear.com/site/public>

DTCC

- <http://www.dtcc.com/>