The Global Standard for Business Research
http://wrds.wharton.upenn.edu

WRDS E-Learning Session

Tutorial of Financial Datasets on WRDS – I

Major Financial Databases

Rabih Moussawi

November 6, 2009

Wharton
University *of* Pennsylvania

wrds

Webex Session Guidelines

Welcome to WRDS E-Learning. Please use the following Webex guidelines:

•Ask Questions via the “Chat” Window.

•Audio problems? Disconnect and call in using one of the toll free numbers listed in the reminder email.

wrds

Agenda

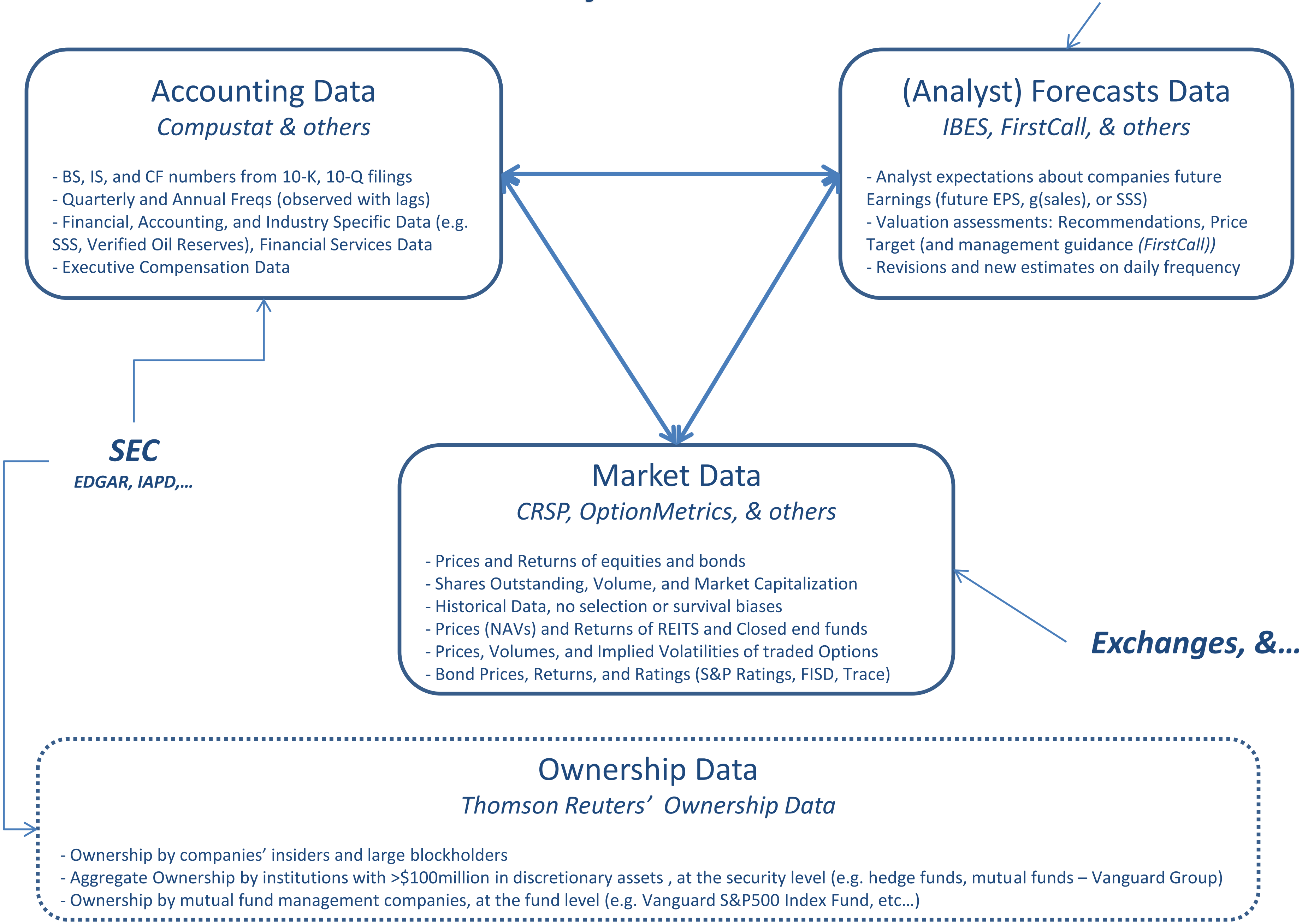
- What is WRDS?
- Sources of Financial Data
- Overview of Compustat, CRSP, and IBES Data
- WRDS Tools and Support:
  How to Get the Help You Need?
- How Can Researchers Use WRDS More Efficiently?

WRDS Overview

- Single and flexible source to extract data from leading research databases
  - Variety of disciplines: Accounting, Finance, Economics, Banking, Insurance, Marketing, Statistics, +
  - Standardized web queries: Every database webpage has the same format: query + variable documentation + list of manuals, overviews, & research applications
  - Ideal for Data linking: e.g. CRSP (stock prices, dividends, splits), Matching CRSP and COMPUSTAT, Linking IBES and CRSP Data, + Merging sample programs
- Extensive research and technical support
  - Online help (variable definitions, data sources, equations, manuals, tutorials, sample programs, FAQs), & email support
  - Data Overviews, Research Applications, Knowledge Base, and Forums@WRDS

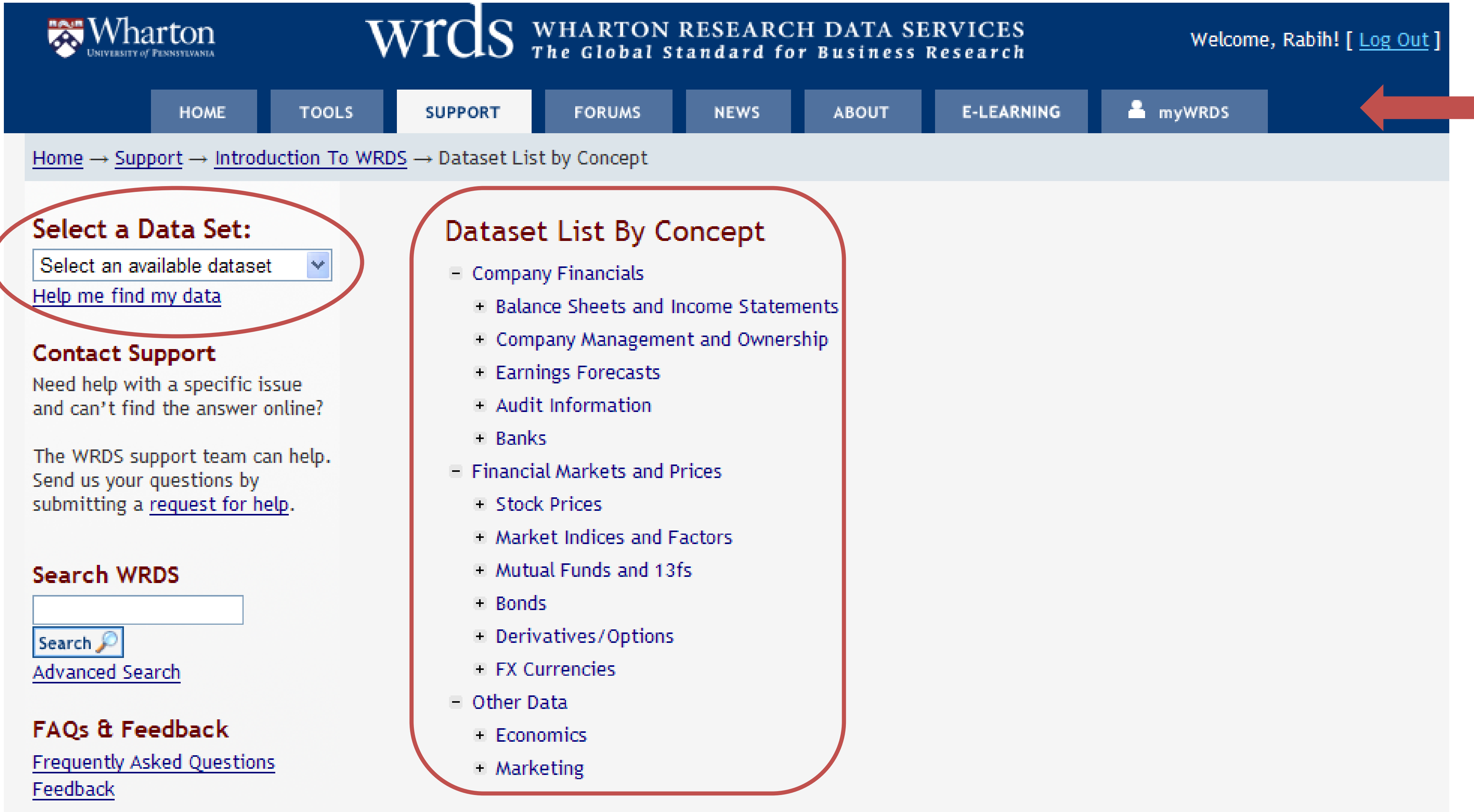
Financial Information by Source

Sell-Side Analysts (brokers)



wrds

Data on WRDS – Easy and Flexible Extracts



wrds

S&P’s Compustat

Accounting and Financial Data

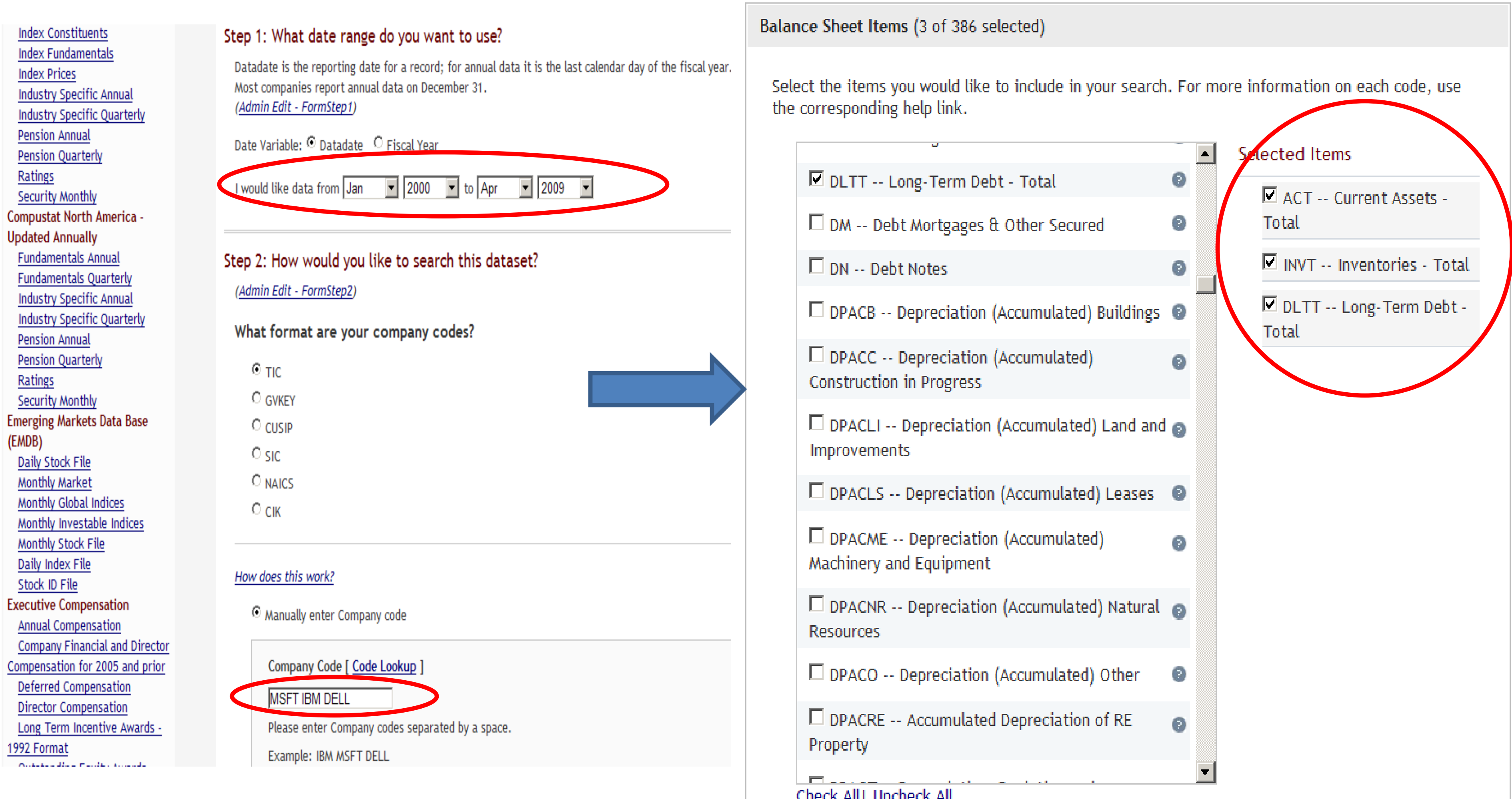
- Compustat North-America: U.S. and Canadian fundamental and market information on around 31,000 active and inactive publicly held companies, from 1950-present
- Compustat Global: fundamental, market, and currency data for more than 30,000 publicly traded companies in global markets (>80 countries), from 1988-present
- Fundamental data available on an annual and quarterly frequencies with thousands of Income Statement, Balance Sheet, Statement of Cash Flows, and supplemental & industry-specific data items
- Market data available on a monthly and daily frequencies with Prices, Dividends, Returns, Trading Volume , Shares Outstanding and Short-Interest Information
- Information on Indices, Segments, Banks, Incentive plans, Pension Data Items, as well as: Executive Compensation and S&P Credit Ratings Xpress
- In the summer of 2007, WRDS adopted the Xpressfeed format of Compustat North America, containing more details on a wider array of companies

wrds

Compustat Example – Live Demo

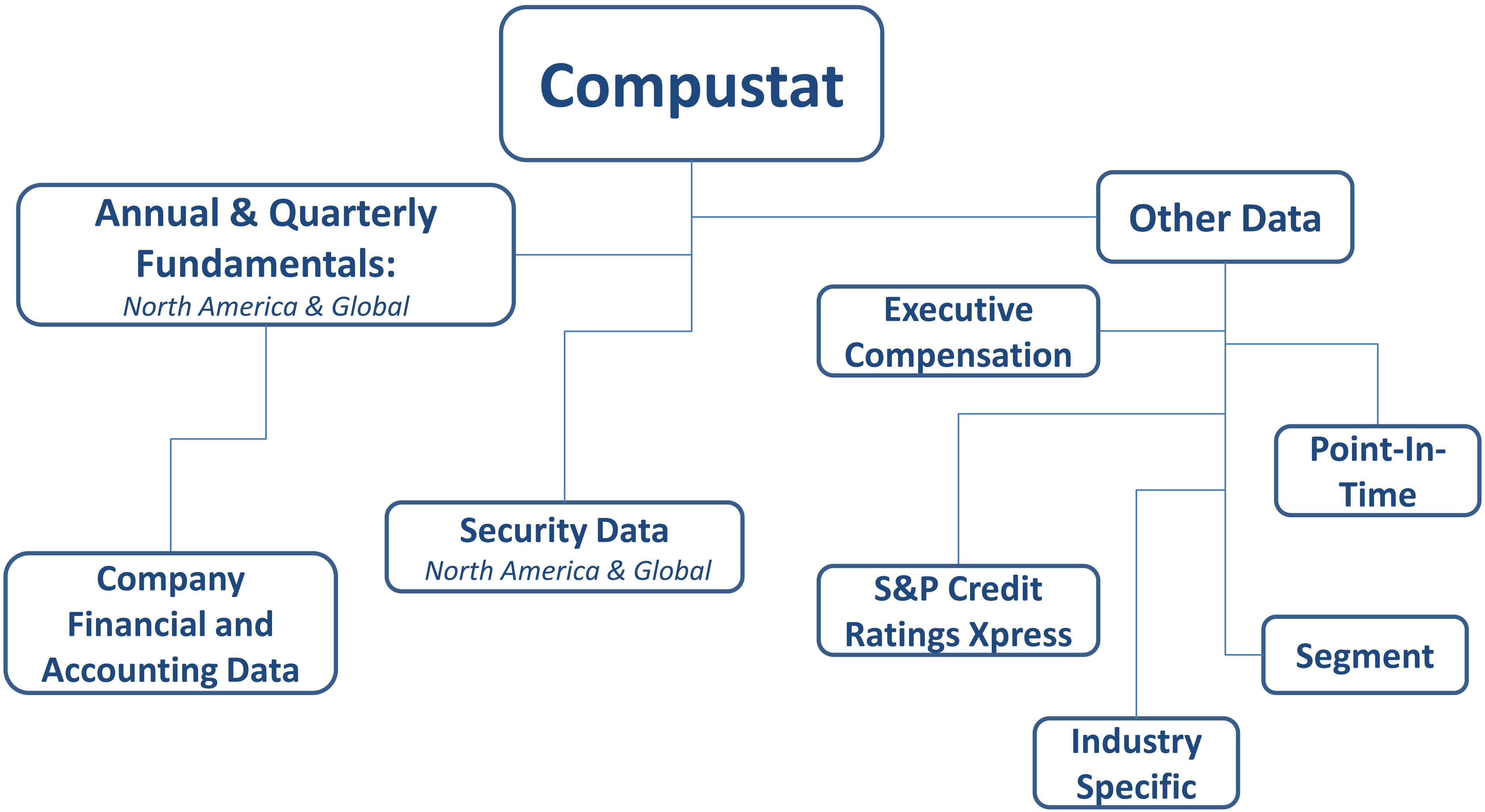
- Get Current Assets, Inventories, and Long-Term Debt for Microsoft, Dell, and IBM between Jan 2000 and April 2009

  http://wrds-web.wharton.upenn.edu/wrds/ds/comp/funda/index.cfm



Basic Compustat Structure

Fundamental Data



WRDS Support: Compustat

- Overview to Compustat XPressfeed Database, FAQs, and WRDS Reference Materials
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_001Manuals%20and%20Overviews/_001Compustat/index.cfm

  For more about this dataset, see the Variable Descriptions, Dataset List, Manuals and Overviews or FAQs.

- Comprehensive Dataset and Variable List
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_002Dataset%20List.cfm?dataVendor=comp

- Financial Statements, S&P 500 Index Constituents, and other Tools:
  http://wrds-web.wharton.upenn.edu/wrds/aux_/finstate/indexqtr.cfm
  http://wrds-web.wharton.upenn.edu/wrds/ds/comp/spindex/index.cfm

- Sample Programs: extracts, filing dates, portfolios, earnings surprises, # of segments, etc.
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_003Sample%20Programs/Compustat/index.cfm

- Research Applications: book-to-market, linking, etc.
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_004Research%20Applications/index.cfm

wrds

CRSP

Stock Market Data

- Center for Research in Security Prices (CRSP) is a research center at the Booth School of Business of the University of Chicago
- Comprehensive collection of daily and monthly security price, return, and volume data for the NYSE, AMEX and NASDAQ stock markets
- Daily and Monthly data for roughly 28,000 securities of Domestic companies and ADRs traded on major exchanges (no OTC), from 1925–present
- Complete historical information (bias-free):
  - Accurate accounting of special distributions and stock splits in return calculation
  - Keep delisting companies (pre-M&A or bankruptcies), and delisting returns
- Additionally provide stock indices, beta- and cap-based portfolios, treasury bond and risk-free rates, CRSP/Compustat Merged Database, REITs, and mutual fund databases

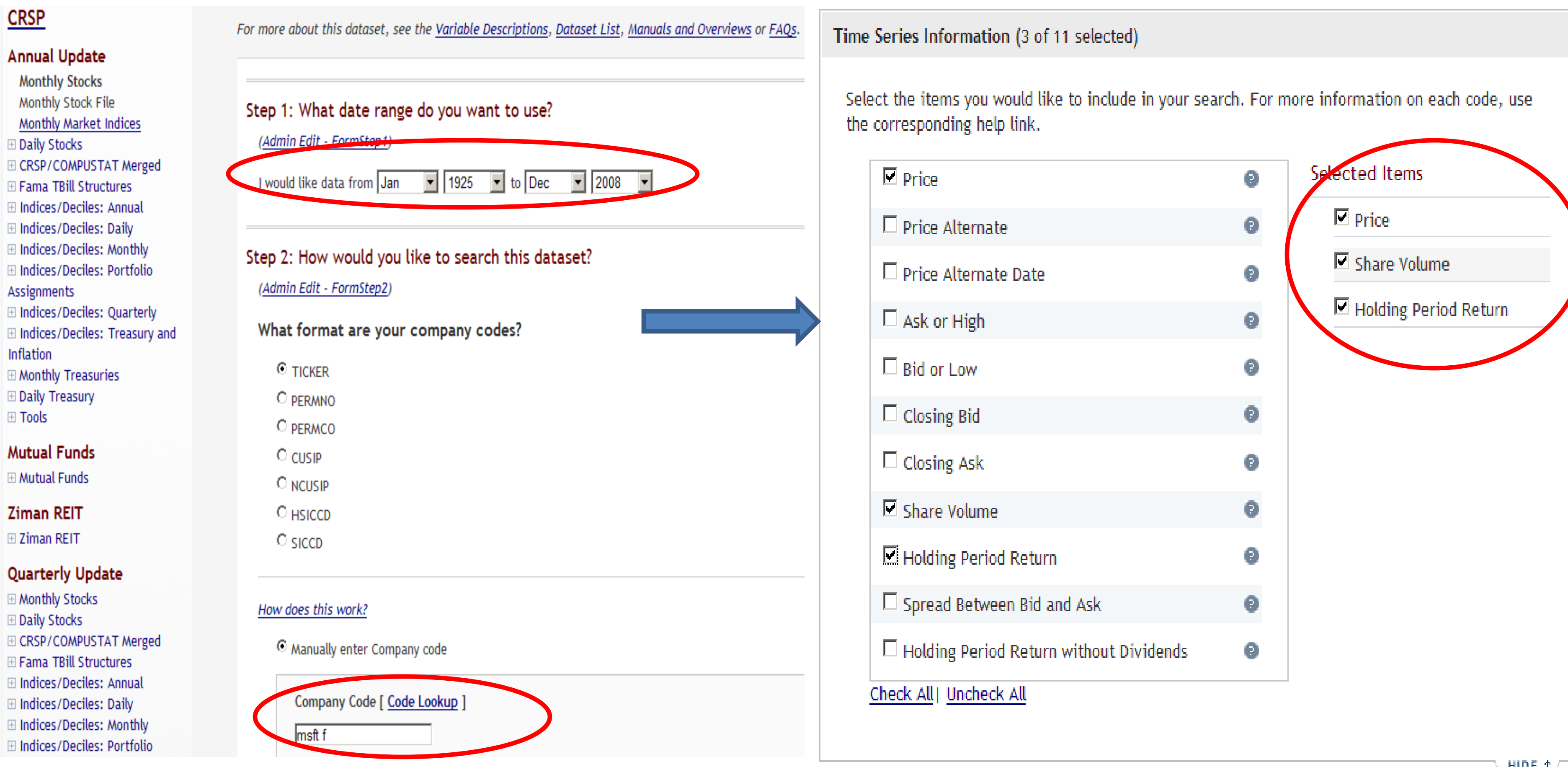
wrds

CRSP Example – Live Demo

1. Get monthly prices, return and volume information for Microsoft and Ford from 1925 to 2008

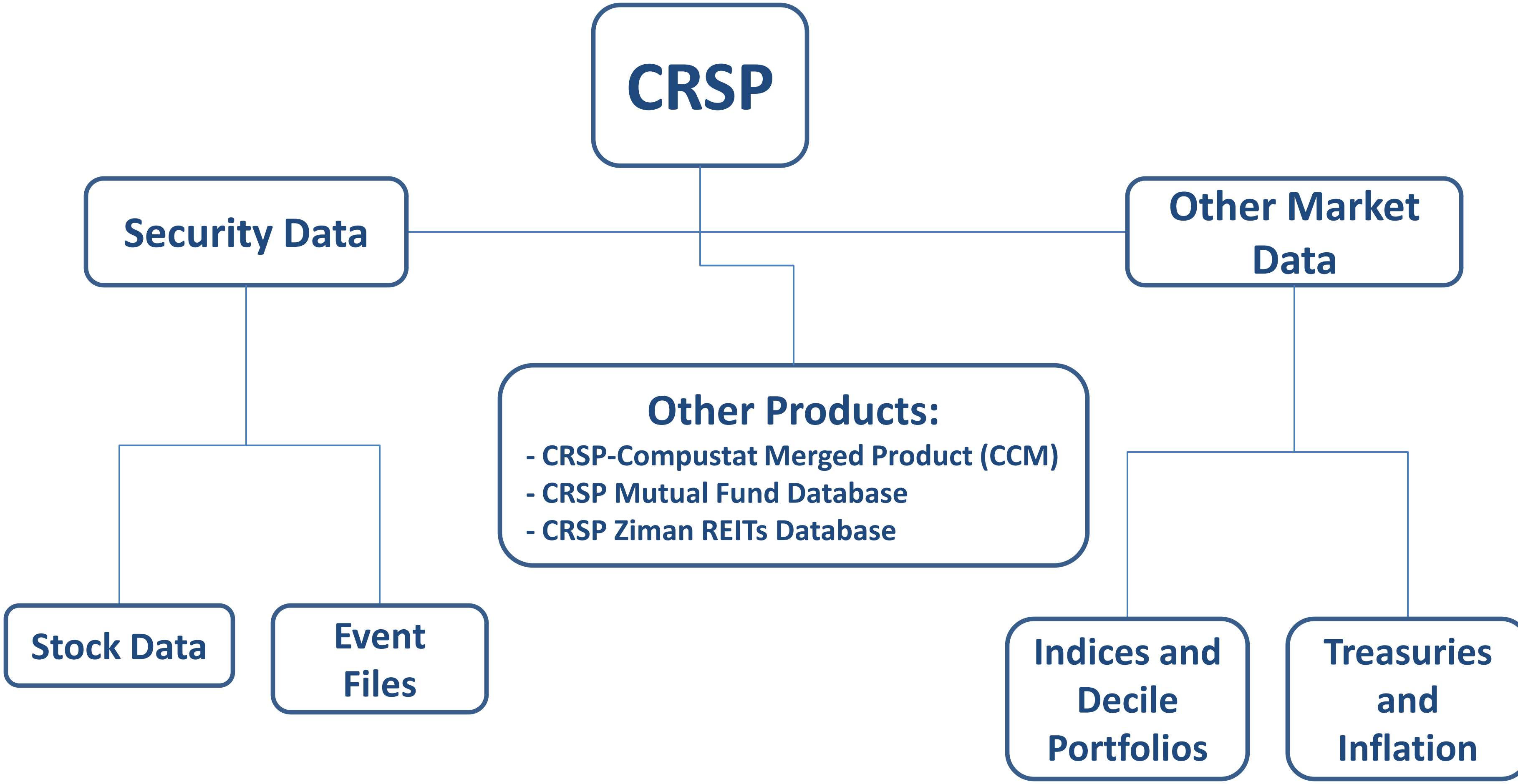
2. Find all stocks that were trading in NYSE at the end of November 1929, and get their month-end prices, return and volume information

   http://wrds-web.wharton.upenn.edu/wrds/ds/crsp/mstk/index.cfm?navGroup=AnnualUpdateMonthlyStocks



Basic CRSP Structure

Monthly Security Data



wrds

WRDS Support: CRSP

- Comprehensive Dataset and Variable Lists, FAQs, Manuals & Data Guides
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_002Dataset%20List.cfm?dataVendor=crsp
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_001Manuals%20and%20Overviews/_002CRSP/index.cfm

- Linking CRSP-Compustat Data (with and without CCM Product)
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_001Manuals%20and%20Overviews/_002CRSP/index.cfm

- Tools: Returns + Decile Assignments , Translate to PERMNO/PERMCO , Mutual Fund Returns & Fama-French , Market Indices , Events and Names
  http://wrds.wharton.upenn.edu/home/tools.shtml

- Sample Programs: Data Extracts, CCM and merging by CUSIP, Calculate CAPM beta, Excess returns, Portfolio formations, plots, Event studies, Mutual fund data
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_003Sample%20Programs/CRSP/index.cfm

- Research Applications: Compounded returns, Momentum and Governance Portfolios, Rolling Regressions, Beta Estimation, Event Studies etc.
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_004Research%20Applications/index.cfm

Thomson Reuters' IBES

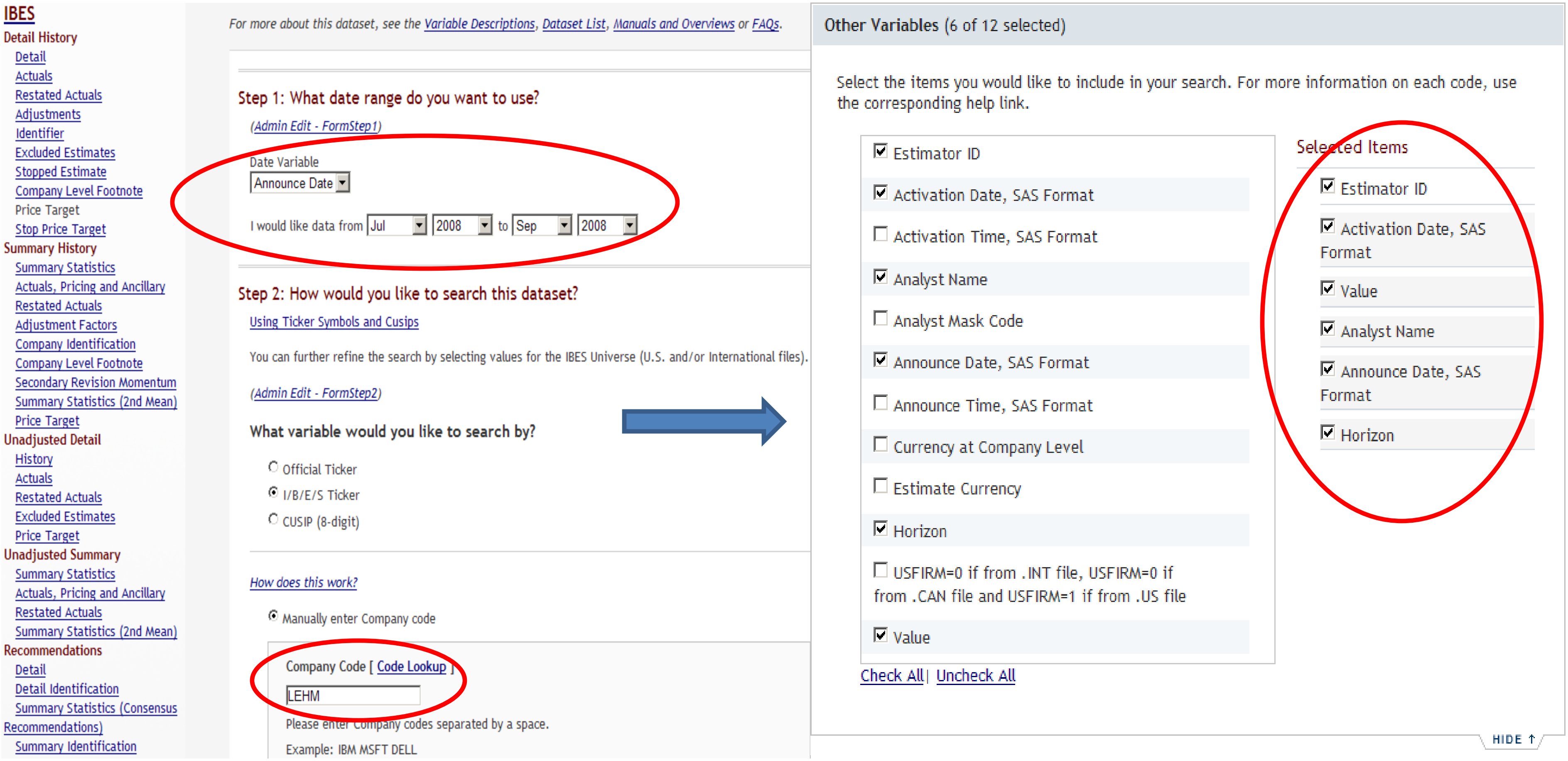
Analyst Forecast Data

- Analysts earnings and sales forecasts (+), consensus estimates, and Buy/Hold/Sell Recommendations
- Comprehensive Global Coverage: Domestic and International public companies from 1980–present
- Features up to 26 forecast measures including GAAP and pro-forma EPS, revenue/sales, net income, ROA, ROE, pre-tax profit and operating profit, EBIDTA, etc.
- Company indentifying information and exchange rates
- **NEW** data on price targets, company level footnotes and restated actuals (all in detailed and summary formats)

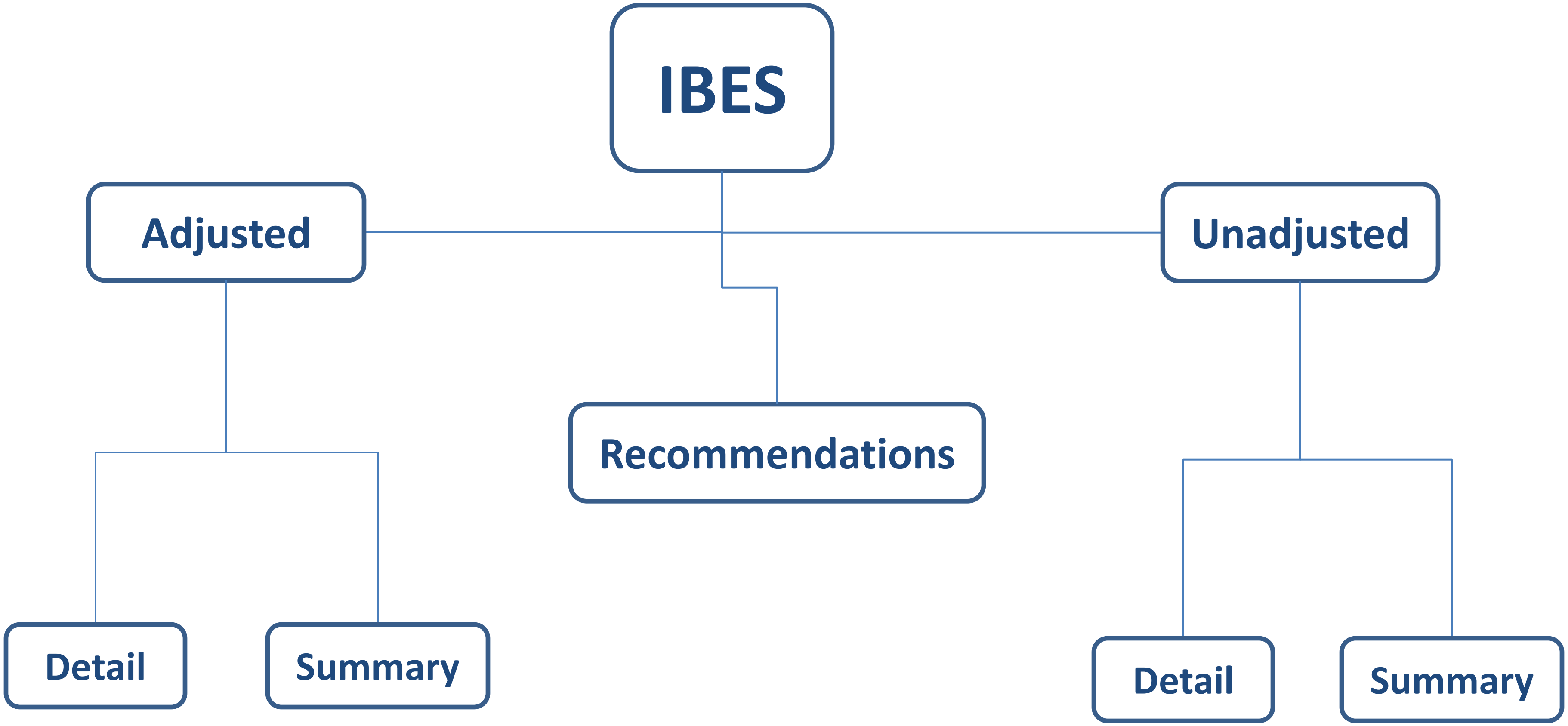
wrds

IBES Example – Live Demo

- Get price target data for Lehman Brothers between July -Sep 2008 (e.g., value, horizon, announcement date, analyst name)
  http://wrds-web.wharton.upenn.edu/wrds/ds/ibes/ptgdet/index.cfm



Basic IBES Structure



WRDS Support: IBES

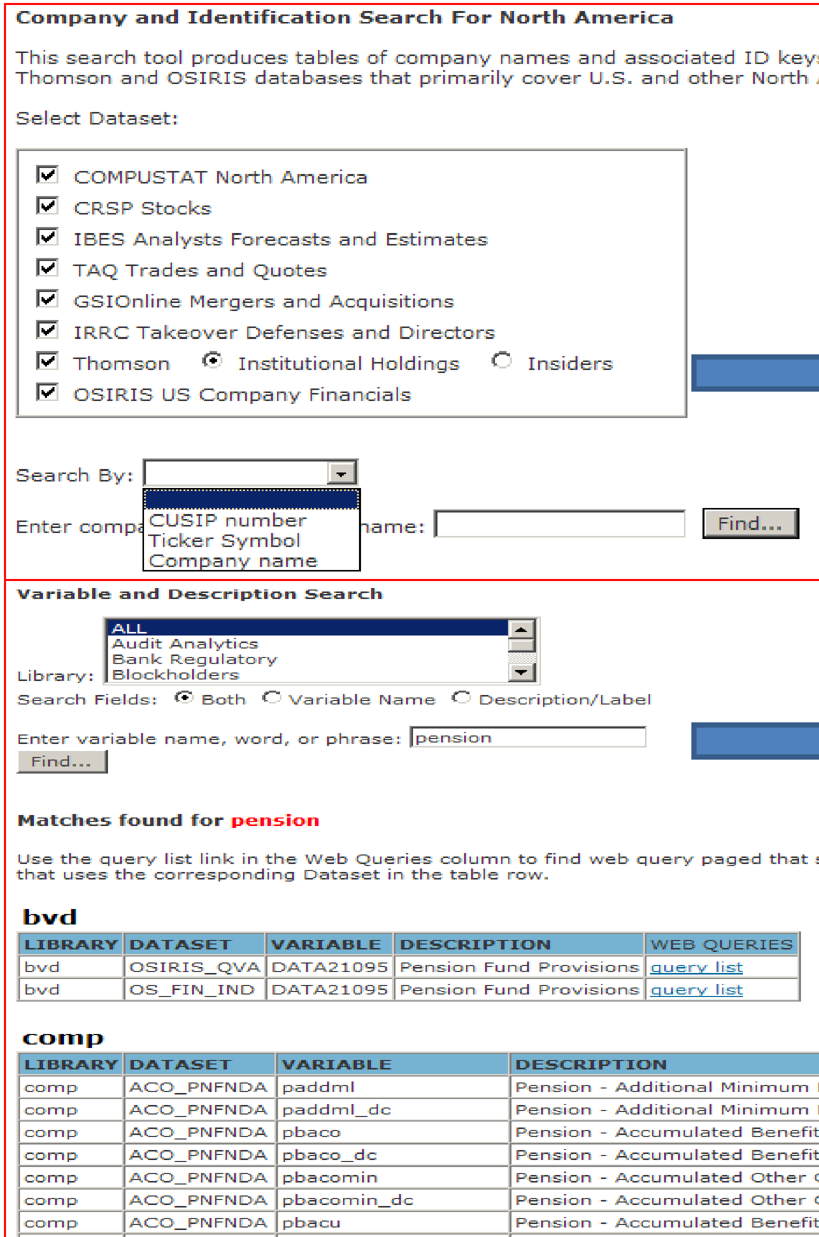
- Detailed overview of IBES and empirical issues
  http://wrds-web.wharton.upenn.edu/wrds/support/Additional%20Support/WRDS%20Presentations/_000user2007/analyst_data.pdf
- Linking IBES and CRSP
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_005Linking%20Databases/_000Linking%20IBES%20and%20CRSP%20Data.cfm
- Important updates on data quality and changes to IBES vintages
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_001Manuals%20and%20Overviews/_003I-B-E-S/index.cfm
- Sample programs and Research Applications: Calculate earnings surprises, work with unadjusted data, link recommendations and estimates, and many more
  http://wrds-web.wharton.upenn.edu/wrds/support/Data/_003Sample%20Programs/I-B-E-S/index.cfm

wrds

Other Popular Databases on WRDS

- NYSE’s Trades And Quotes (TAQ) Database: High-frequency data 1993-2009
  - Intraday trades and quotes for all securities on US Exchanges
  - How to work with TAQ: WRDS TAQ Research Applications
- Thomson Reuters Ownership Databases: 13F, Mutual Funds, Insiders
  - Institutional Ownership
  - Research Notes: Computing Institutional Ownership Ratios and Concentration.
- RiskMetrics’ Governance, and KLD Social Rating datasets:
  - Governance Provisions: Dual Class, Poison Pills, and other antitakeover provisions
  - Board of Directors information
  - Shareholder Proposals and voting records
  - KLD Social and Environmental Records
- S&P Credit Ratings Xpress, TRACE and FISD Bond Data
- Free Datasets (CBOE Indexes, DJ Averages, Fama-French, Liquidity factors)

WRDS Tools: Company & Variable Search



Company and Identification Search For North America

This search tool produces tables of company names and associated ID keys
Thomson and OSIRIS databases that primarily cover U.S. and other North

Select Dataset:

- ☑ COMPUSTAT North America
- ☑ CRSP Stocks
- ☑ IBES Analysts Forecasts and Estimates
- ☑ TAQ Trades and Quotes
- ☑ GSIOnline Mergers and Acquisitions
- ☑ IRRC Takeover Defenses and Directors
- ☑ Thomson ◉ Institutional Holdings ○ Insiders
- ☑ OSIRIS US Company Financials

Search By:

CUSIP number
Ticker Symbol
Company name

Enter compa ... name: Find...

Variable and Description Search

Library: ALL / Audit Analytics / Bank Regulatory / Blockholders

Search Fields: ◉ Both ○ Variable Name ○ Description/Label

Enter variable name, word, or phrase: pension

Find...

Matches found for pension

Use the query list link in the Web Queries column to find web query paged that
that uses the corresponding Dataset in the table row.

bvd

LIBRARY	DATASET	VARIABLE	DESCRIPTION	WEB QUERIES
bvd	OSIRIS_QVA	DATA21095	Pension Fund Provisions	query list
bvd	OS_FIN_IND	DATA21095	Pension Fund Provisions	query list

comp

LIBRARY	DATASET	VARIABLE	DESCRIPTION
comp	ACO_PNFNDA	paddml	Pension - Additional Minimum
comp	ACO_PNFNDA	paddml_dc	Pension - Additional Minimum
comp	ACO_PNFNDA	pbaco	Pension - Accumulated Benefit
comp	ACO_PNFNDA	pbaco_dc	Pension - Accumulated Benefit
comp	ACO_PNFNDA	pbacomin	Pension - Accumulated Other
comp	ACO_PNFNDA	pbacomin_dc	Pension - Accumulated Other
comp	ACO_PNFNDA	pbacu	Pension - Accumulated Benefit

Company search tool

http://wrds.wharton.upenn.edu/cgi-bin/tools/lookupcomp.cgi

Allows users to search for a company by CUSIP, Ticker or company name across a host of different databases on WRDS (CRSP, Compustat, Thomson, TAQ, Insiders, etc)

Variable search tool

http://wrds.wharton.upenn.edu/cgi-bin/tools/lookupvar.cgi

Allows users to search for a given variable within either variable name or label or both across a wide range of various databases on WRDS (CRSP, Compustat, IBES, TAQ, Global Insight, etc)

How to Get Support

Research and Technical Support

- Online Help (24/7)
  - Database Manuals plus additional support documentation
  - Data Overviews: http://wrds.wharton.upenn.edu/support/dataoverview.shtml
    e.g. *OptionMetrics Overview*
  - Research Applications: http://wrds.wharton.upenn.edu/support/researchapp.shtml
    e.g. *Portfolio Construction, Event Studies*
  - Sample Programs: http://wrds.wharton.upenn.edu/support/dslist/dsl.shtml
    e.g. *Merging CRSP and Compustat*
  - Variable Search: http://wrds.wharton.upenn.edu/cgi-bin/tools/lookupvar.cgi
    e.g. *Compensation*
  - Company Search: http://wrds.wharton.upenn.edu/cgi-bin/tools/lookupcomp.cgi
    e.g. *Microsoft*

- WRDS Knowledge Base: FAQ archive of answers to common user questions
  http://wrds.wharton.upenn.edu/cgi-bin/mywrds/knowledgebase.cgi
  e.g. *How to find IPO data*

- FORUMS@WRDS: Interactive users' questions and suggestions
  http://forum.wharton.upenn.edu/forums/
  e.g. *Fama and MacBeth Regressions*

- Email support at wrds-support@wharton.upenn.edu (Monday-Friday, 9a-5p EST)
  Researchers and Technical Experts ready to assist with:
  - Data extraction, merging, and management.
  - Programming and technical problems
  - Other research concerns

The Global Standard for Business Research
http://wrds.wharton.upenn.edu

Thank You

Thank you for attending this WRDS E-Learning session. Please look for an email from us with a link to the course materials used in this session.

If you have any questions about the material covered in this session, please email wrds-support@wharton.upenn.edu

To join us in future WRDS E-Learning courses, please visit the E-Learning section of the WRDS website.