Introduction to Financial Databases

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By Roger Loh
Department of Finance
Fisher College of Business
Ohio State University

Overview

Importance of Data in Financial Research

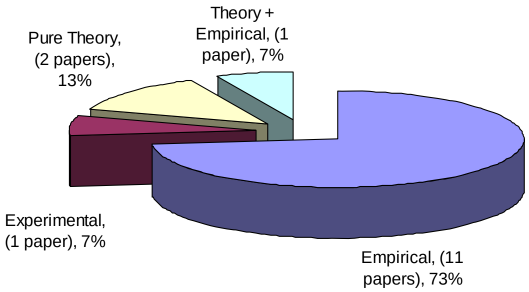
Describe each Database

How to Access the Data?

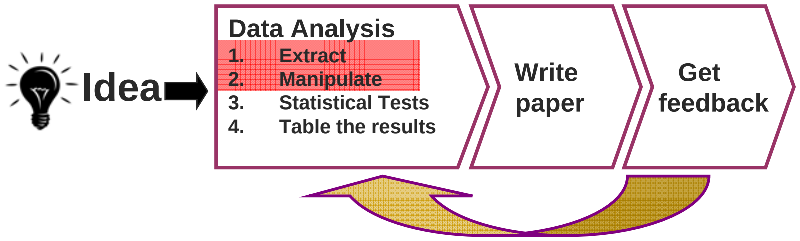
Practice sessions in Fisher 606

Importance of Data in Financial Research

1. Hard to write a paper that doesn't use data.
   - Eg., in the June 2006 issue of JF, 12 out of 15 papers (80%) use data.



Importance of Data in Financial Research



Idea

Data Analysis

1. Extract
2. Manipulate
3. Statistical Tests
4. Table the results

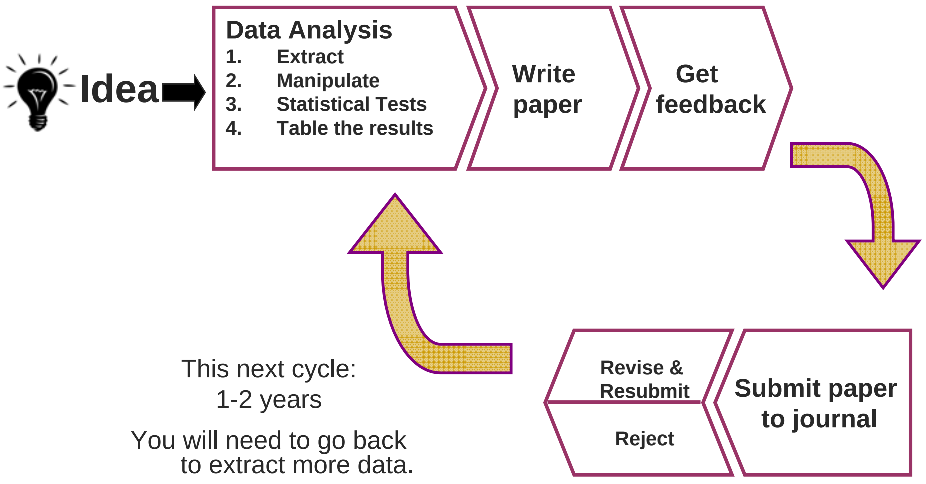
Write paper

Get feedback

This cycle: 1-3 years

2. If you can access and analyze data quickly, you can shorten the length of this cycle. Writing systematic programs to access data is very important because you need to make repeated amendments to your data requirements.

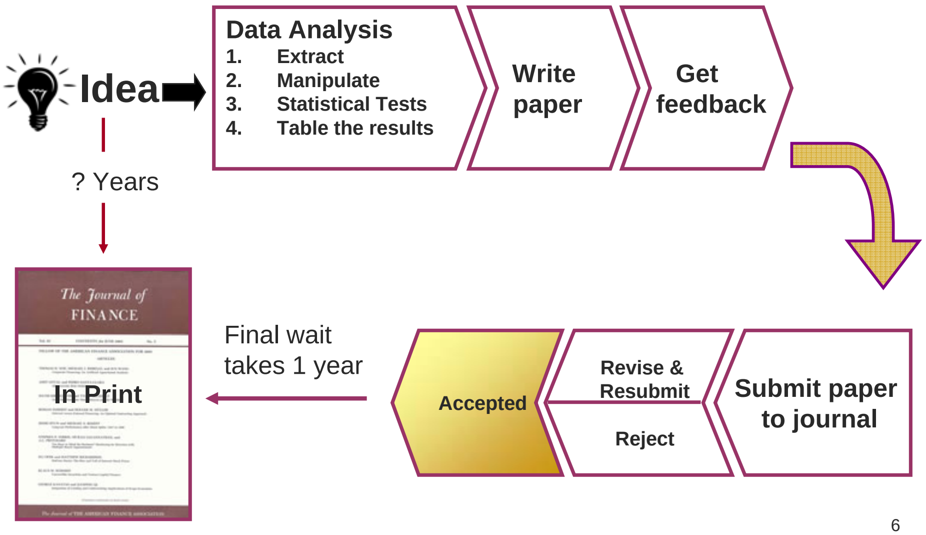
Empirical Research Process



This next cycle:
1-2 years

You will need to go back
to extract more data.

Empirical Research Process



Overview

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Describe each Database

How to Access the Data?

Practice sessions in Fisher 606

Databases by Concept

- Stock returns (CRSP, Datastream)
- Trading data (TAQ)
- Company data (Compustat, IRRC, Worldscope, SDC)
- Analyst advice (I/B/E/S)
- Institutional holdings data (Thomson 13F)
- Others
  - Economic data (Datastream)
  - Author provided data (e.g. Ken French’s website, Robert Shiller’s website)
  - Proprietary data (Odean’s individual investor database)

List of Databases

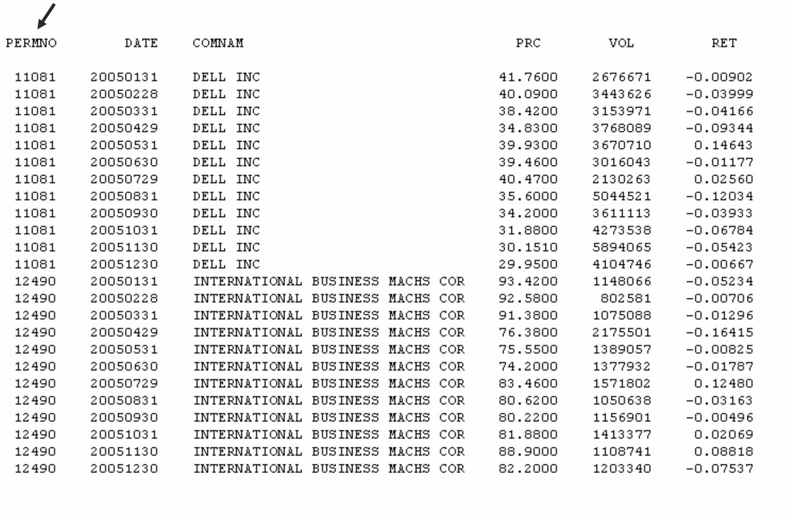
1. CRSP
2. Compustat
3. NYSE TAQ
4. I/B/E/S
5. Thomson 13F
6. IRRC
7. Datastream/Worldscop
8. SDC

1. CRSP

- Center for Research in Security Prices—most comprehensive US stock returns database.
- Individual stock returns and market returns (daily and monthly).
- Most used items:
  - Price
  - Return
  - Volume
  - Market-cap
  - Shares outstanding
  - SIC Industry code

CRSP Data E.g.

Permanent number is the CRSP firm identifier



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PERMNO        DATE    COMNAM                                  PRC       VOL        RET

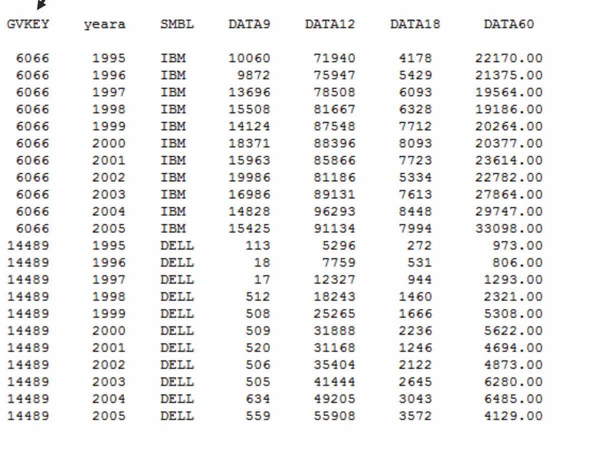
 11081    20050131    DELL INC                            41.7600   2676671   -0.00902
 11081    20050228    DELL INC                            40.0900   3443626   -0.03999
 11081    20050331    DELL INC                            38.4200   3153971   -0.04166
 11081    20050429    DELL INC                            34.8300   3768089   -0.09344
 11081    20050531    DELL INC                            39.9300   3670710    0.14643
 11081    20050630    DELL INC                            39.4600   3016043   -0.01177
 11081    20050729    DELL INC                            40.4700   2130263    0.02560
 11081    20050831    DELL INC                            35.6000   5044521   -0.12034
 11081    20050930    DELL INC                            34.2000   3611113   -0.03933
 11081    20051031    DELL INC                            31.8800   4273538   -0.06784
 11081    20051130    DELL INC                            30.1510   5894065   -0.05423
 11081    20051230    DELL INC                            29.9500   4104746   -0.00667
 12490    20050131    INTERNATIONAL BUSINESS MACHS COR    93.4200   1148066   -0.05234
 12490    20050228    INTERNATIONAL BUSINESS MACHS COR    92.5800    802581   -0.00706
 12490    20050331    INTERNATIONAL BUSINESS MACHS COR    91.3800   1075088   -0.01296
 12490    20050429    INTERNATIONAL BUSINESS MACHS COR    76.3800   2175501   -0.16415
 12490    20050531    INTERNATIONAL BUSINESS MACHS COR    75.5500   1389057   -0.00825
 12490    20050630    INTERNATIONAL BUSINESS MACHS COR    74.2000   1377932   -0.01787
 12490    20050729    INTERNATIONAL BUSINESS MACHS COR    83.4600   1571802    0.12480
 12490    20050831    INTERNATIONAL BUSINESS MACHS COR    80.6200   1050638   -0.03163
 12490    20050930    INTERNATIONAL BUSINESS MACHS COR    80.2200   1156901   -0.00496
 12490    20051031    INTERNATIONAL BUSINESS MACHS COR    81.8800   1413377    0.02069
 12490    20051130    INTERNATIONAL BUSINESS MACHS COR    88.9000   1108741    0.08818
 12490    20051230    INTERNATIONAL BUSINESS MACHS COR    82.2000   1203340   -0.07537
```

2. Compustat

- US Company Data from financial statements
- Most commonly used Files
  - Industrial Annual
  - Industrial Quarterly
  - CRSP-Compustat Merged File
  - Executive Compensation
- Commonly used items in Annual File (Item #):
  - Long-term Debt (#9)
  - Sales (#12)
  - Earnings (income before extraordinary items, #18)
  - Book value of equity (#60)
  - Total Assets
  - R&D expenditure
  - Cash

Compustat Annual Data E.g.

Gvkey is the Compustat firm identifier



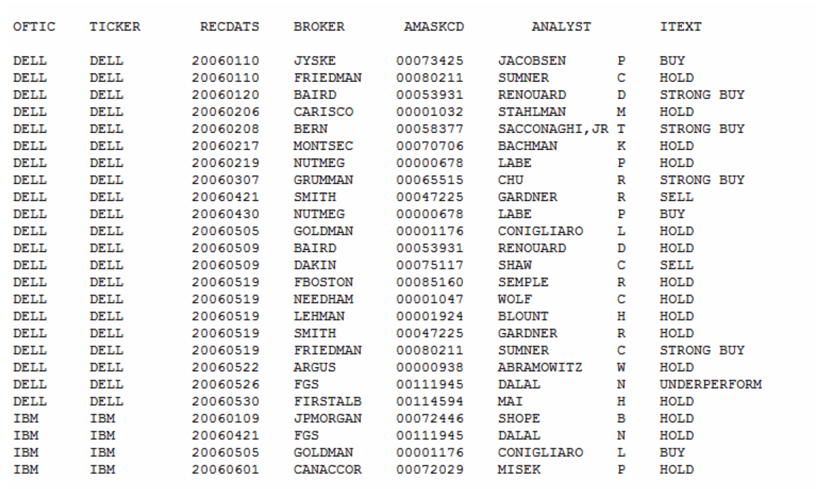
```
GVKEY   yeara   SMBL    DATA9   DATA12   DATA18      DATA60

 6066    1995   IBM     10060    71940     4178    22170.00
 6066    1996   IBM      9872    75947     5429    21375.00
 6066    1997   IBM     13696    78508     6093    19564.00
 6066    1998   IBM     15508    81667     6328    19186.00
 6066    1999   IBM     14124    87548     7712    20264.00
 6066    2000   IBM     18371    88396     8093    20377.00
 6066    2001   IBM     15963    85866     7723    23614.00
 6066    2002   IBM     19986    81186     5334    22782.00
 6066    2003   IBM     16986    89131     7613    27864.00
 6066    2004   IBM     14828    96293     8448    29747.00
 6066    2005   IBM     15425    91134     7994    33098.00
14489    1995   DELL      113     5296      272      973.00
14489    1996   DELL       18     7759      531      806.00
14489    1997   DELL       17    12327      944     1293.00
14489    1998   DELL      512    18243     1460     2321.00
14489    1999   DELL      508    25265     1666     5308.00
14489    2000   DELL      509    31888     2236     5622.00
14489    2001   DELL      520    31168     1246     4694.00
14489    2002   DELL      506    35404     2122     4873.00
14489    2003   DELL      505    41444     2645     6280.00
14489    2004   DELL      634    49205     3043     6485.00
14489    2005   DELL      559    55908     3572     4129.00
```

3. I/B/E/S

- Institutional Brokers Estimate System.
- Contains sell-side security analysts' earnings forecasts and stock recommendations for US firms and international firms.
- Earnings Forecasts
  - Summary File (monthly consensus forecasts)
  - Detail File (Individual analyst forecasts)
- Recommendations
  - Summary File (monthly consensus recommendations)
  - Detail File (Individual analyst recommendations)

I/B/E/S Detail Recommendations E.g.



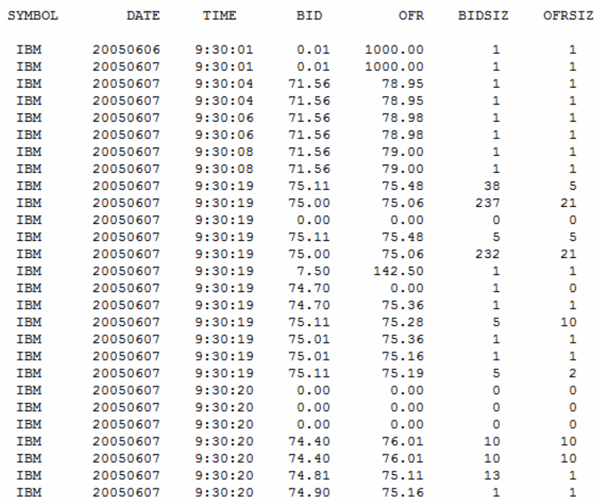
```
OFTIC   TICKER     RECDATS   BROKER     AMASKCD     ANALYST          ITEXT

DELL    DELL      20060110   JYSKE      00073425   JACOBSEN      P   BUY
DELL    DELL      20060110   FRIEDMAN   00080211   SUMNER        C   HOLD
DELL    DELL      20060120   BAIRD      00053931   RENOUARD      D   STRONG BUY
DELL    DELL      20060206   CARISCO    00001032   STAHLMAN      M   HOLD
DELL    DELL      20060208   BERN       00058377   SACCONAGHI,JR T   STRONG BUY
DELL    DELL      20060217   MONTSEC    00070706   BACHMAN       K   HOLD
DELL    DELL      20060219   NUTMEG     00000678   LABE          P   HOLD
DELL    DELL      20060307   GRUMMAN    00065515   CHU           R   STRONG BUY
DELL    DELL      20060421   SMITH      00047225   GARDNER       R   SELL
DELL    DELL      20060430   NUTMEG     00000678   LABE          P   BUY
DELL    DELL      20060505   GOLDMAN    00001176   CONIGLIARO    L   HOLD
DELL    DELL      20060509   BAIRD      00053931   RENOUARD      D   HOLD
DELL    DELL      20060509   DAKIN      00075117   SHAW          C   SELL
DELL    DELL      20060519   FBOSTON    00085160   SEMPLE        R   HOLD
DELL    DELL      20060519   NEEDHAM    00001047   WOLF          C   HOLD
DELL    DELL      20060519   LEHMAN     00001924   BLOUNT        H   HOLD
DELL    DELL      20060519   SMITH      00047225   GARDNER       R   HOLD
DELL    DELL      20060519   FRIEDMAN   00080211   SUMNER        C   STRONG BUY
DELL    DELL      20060522   ARGUS      00000938   ABRAMOWITZ    W   HOLD
DELL    DELL      20060526   FGS        00111945   DALAL         N   UNDERPERFORM
DELL    DELL      20060530   FIRSTALB   00114594   MAI           H   HOLD
IBM     IBM       20060109   JPMORGAN   00072446   SHOPE         B   HOLD
IBM     IBM       20060421   FGS        00111945   DALAL         N   HOLD
IBM     IBM       20060505   GOLDMAN    00001176   CONIGLIARO    L   BUY
IBM     IBM       20060601   CANACCOR   00072029   MISEK         P   HOLD
```

4. NYSE Trade and Quote (TAQ)

- Consolidated Trades, Consolidated Quotes data.
- Used when intra-day price and quotes are needed, especially in market microstructure/liquidity research.
- Commonly used variables
  - Trade price
  - Trade size
  - Bid/offer price
  - Bid/offer size
- Managing the large size of the dataset is the challenge of using TAQ data.

TAQ Quotes Data E.g.

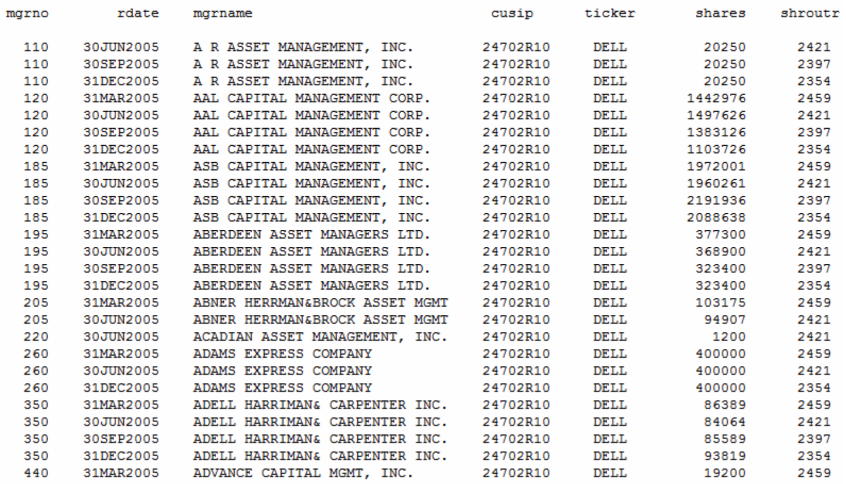


SYMBOL	DATE	TIME	BID	OFR	BIDSIZ	OFRSIZ
IBM	20050606	9:30:01	0.01	1000.00	1	1
IBM	20050607	9:30:01	0.01	1000.00	1	1
IBM	20050607	9:30:04	71.56	78.95	1	1
IBM	20050607	9:30:04	71.56	78.95	1	1
IBM	20050607	9:30:06	71.56	78.98	1	1
IBM	20050607	9:30:06	71.56	78.98	1	1
IBM	20050607	9:30:08	71.56	79.00	1	1
IBM	20050607	9:30:08	71.56	79.00	1	1
IBM	20050607	9:30:19	75.11	75.48	38	5
IBM	20050607	9:30:19	75.00	75.06	237	21
IBM	20050607	9:30:19	0.00	0.00	0	0
IBM	20050607	9:30:19	75.11	75.48	5	5
IBM	20050607	9:30:19	75.00	75.06	232	21
IBM	20050607	9:30:19	7.50	142.50	1	1
IBM	20050607	9:30:19	74.70	0.00	1	0
IBM	20050607	9:30:19	74.70	75.36	1	1
IBM	20050607	9:30:19	75.11	75.28	5	10
IBM	20050607	9:30:19	75.01	75.36	1	1
IBM	20050607	9:30:19	75.01	75.16	1	1
IBM	20050607	9:30:19	75.11	75.19	5	2
IBM	20050607	9:30:20	0.00	0.00	0	0
IBM	20050607	9:30:20	0.00	0.00	0	0
IBM	20050607	9:30:20	0.00	0.00	0	0
IBM	20050607	9:30:20	74.40	76.01	10	10
IBM	20050607	9:30:20	74.40	76.01	10	10
IBM	20050607	9:30:20	74.81	75.11	13	1
IBM	20050607	9:30:20	74.90	75.16	1	1

5. Thomson 13F

- Institutions are required to report their ownership of equities in quarterly 13F filings to the SEC.
- Aggregate holdings for the institution, regardless of the number of individual fund portfolios.
- Shows how many shares of a firm are held by each institution.
- Usage of this database among published papers increased recently.

13F Holdings Data E.g.

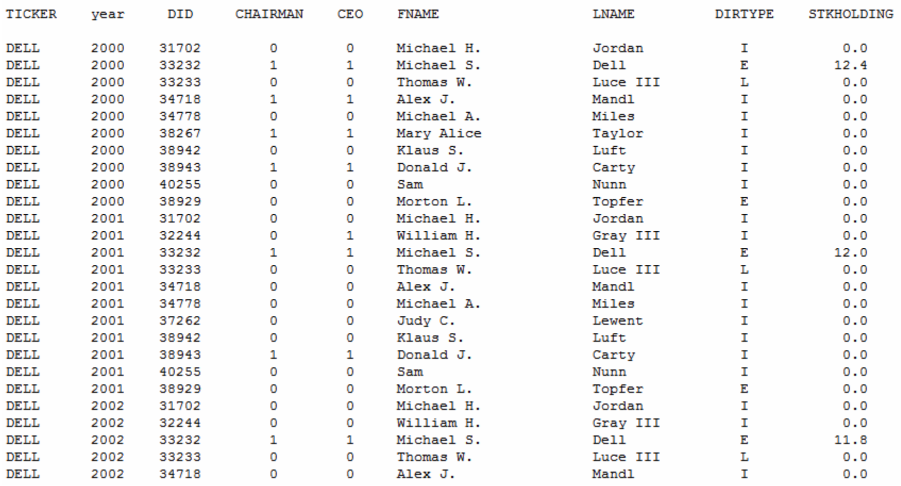


mgrno	rdate	mgrname	cusip	ticker	shares	shroutr
110	30JUN2005	A R ASSET MANAGEMENT, INC.	24702R10	DELL	20250	2421
110	30SEP2005	A R ASSET MANAGEMENT, INC.	24702R10	DELL	20250	2397
110	31DEC2005	A R ASSET MANAGEMENT, INC.	24702R10	DELL	20250	2354
120	31MAR2005	AAL CAPITAL MANAGEMENT CORP.	24702R10	DELL	1442976	2459
120	30JUN2005	AAL CAPITAL MANAGEMENT CORP.	24702R10	DELL	1497626	2421
120	30SEP2005	AAL CAPITAL MANAGEMENT CORP.	24702R10	DELL	1383126	2397
120	31DEC2005	AAL CAPITAL MANAGEMENT CORP.	24702R10	DELL	1103726	2354
185	31MAR2005	ASB CAPITAL MANAGEMENT, INC.	24702R10	DELL	1972001	2459
185	30JUN2005	ASB CAPITAL MANAGEMENT, INC.	24702R10	DELL	1960261	2421
185	30SEP2005	ASB CAPITAL MANAGEMENT, INC.	24702R10	DELL	2191936	2397
185	31DEC2005	ASB CAPITAL MANAGEMENT, INC.	24702R10	DELL	2088638	2354
195	31MAR2005	ABERDEEN ASSET MANAGERS LTD.	24702R10	DELL	377300	2459
195	30JUN2005	ABERDEEN ASSET MANAGERS LTD.	24702R10	DELL	368900	2421
195	30SEP2005	ABERDEEN ASSET MANAGERS LTD.	24702R10	DELL	323400	2397
195	31DEC2005	ABERDEEN ASSET MANAGERS LTD.	24702R10	DELL	323400	2354
205	31MAR2005	ABNER HERRMAN&BROCK ASSET MGMT	24702R10	DELL	103175	2459
205	30JUN2005	ABNER HERRMAN&BROCK ASSET MGMT	24702R10	DELL	94907	2421
220	30JUN2005	ACADIAN ASSET MANAGEMENT, INC.	24702R10	DELL	1200	2421
260	31MAR2005	ADAMS EXPRESS COMPANY	24702R10	DELL	400000	2459
260	30JUN2005	ADAMS EXPRESS COMPANY	24702R10	DELL	400000	2421
260	31DEC2005	ADAMS EXPRESS COMPANY	24702R10	DELL	400000	2354
350	31MAR2005	ADELL HARRIMAN& CARPENTER INC.	24702R10	DELL	86389	2459
350	30JUN2005	ADELL HARRIMAN& CARPENTER INC.	24702R10	DELL	84064	2421
350	30SEP2005	ADELL HARRIMAN& CARPENTER INC.	24702R10	DELL	85589	2397
350	31DEC2005	ADELL HARRIMAN& CARPENTER INC.	24702R10	DELL	93819	2354
440	31MAR2005	ADVANCE CAPITAL MGMT, INC.	24702R10	DELL	19200	2459

IRRC

- Investor Responsibility Research Center
- Corporate Governance data
  - Gompers, Ishii, Metrick (2003 http://papers.ssrn.com/id=278920) corporate governance index. Lists the anti-takeover provisions that a firm has. More provisions=more entrenched management=poor governance. Commonly used for recent corporate governance studies.
- Directors data
  - Information on the directors of a firm—board size, age, whether they are independent, whether they hold shares in the firm.

IRRC Directors Data E.g.



TICKER	year	DID	CHAIRMAN	CEO	FNAME	LNAME	DIRTYPE	STKHOLDING
DELL	2000	31702	0	0	Michael H.	Jordan	I	0.0
DELL	2000	33232	1	1	Michael S.	Dell	E	12.4
DELL	2000	33233	0	0	Thomas W.	Luce III	L	0.0
DELL	2000	34718	1	1	Alex J.	Mandl	I	0.0
DELL	2000	34778	0	0	Michael A.	Miles	I	0.0
DELL	2000	38267	1	1	Mary Alice	Taylor	I	0.0
DELL	2000	38942	0	0	Klaus S.	Luft	I	0.0
DELL	2000	38943	1	1	Donald J.	Carty	I	0.0
DELL	2000	40255	0	0	Sam	Nunn	I	0.0
DELL	2000	38929	0	0	Morton L.	Topfer	E	0.0
DELL	2001	31702	0	0	Michael H.	Jordan	I	0.0
DELL	2001	32244	0	1	William H.	Gray III	I	0.0
DELL	2001	33232	1	1	Michael S.	Dell	E	12.0
DELL	2001	33233	0	0	Thomas W.	Luce III	L	0.0
DELL	2001	34718	0	0	Alex J.	Mandl	I	0.0
DELL	2001	34778	0	0	Michael A.	Miles	I	0.0
DELL	2001	37262	0	0	Judy C.	Lewent	I	0.0
DELL	2001	38942	0	0	Klaus S.	Luft	I	0.0
DELL	2001	38943	1	1	Donald J.	Carty	I	0.0
DELL	2001	40255	0	0	Sam	Nunn	I	0.0
DELL	2001	38929	0	0	Morton L.	Topfer	E	0.0
DELL	2002	31702	0	0	Michael H.	Jordan	I	0.0
DELL	2002	32244	0	0	William H.	Gray III	I	0.0
DELL	2002	33232	1	1	Michael S.	Dell	E	11.8
DELL	2002	33233	0	0	Thomas W.	Luce III	L	0.0
DELL	2002	34718	0	0	Alex J.	Mandl	I	0.0

Datastream/Worldscope

- Datastream is a comprehensive international database:
  - stock returns (>50,000 stocks in >60 countries)
  - company financial data (provided within Datastream by Worldscope)
  - bond returns
  - stock and bond indices
  - foreign exchange, commodity prices, and economic data.
- Indispensable for studies needing international data.
- However, the data interface is not user-friendly and there are many errors in the dataset. See for eg., Ince and Porter (2004). http://papers.ssrn.com/id=486523 or appendix of Griffin, Nadari, and Kelly (2006).

SDC

- Thomson's Securities Data Corporation.
- Corporate issuance database
  - New Issues (US and International)
    - IPOs and secondary issues
    - Bond offerings
    - Rights offerings
  - Mergers and Acquisitions
    - Hostile/friendly takeovers
    - Successful and unsuccessful deals
    - US and non-US targets
- SDC also contains some errors. See:
    - http://pages.stern.nyu.edu/~aljungqv/research.htm (Alexander Ljungqvist's website)
    - http://bear.cba.ufl.edu/ritter/ipodata.htm (Jay Ritter's website)

Overview

Importance of Data in Financial Research

Describe each Database

How to Access the Data?

Practice sessions in Fisher 606

Accessing WRDS

- Wharton Research Database Services (WRDS) is the interface to access most of the databases.
- Only Datastream and SDC cannot be accessed through WRDS.
- 3 ways to access WRDS
  - Web queries (simplest way, but the most limited)
  - Unix SAS (through SSH Secure Shell, download from http://osusls.osu.edu/upgrades/stg2wnx.html)
  - SAS PC Connect (need SAS installation on your PC)

Why use SAS PC Connect?

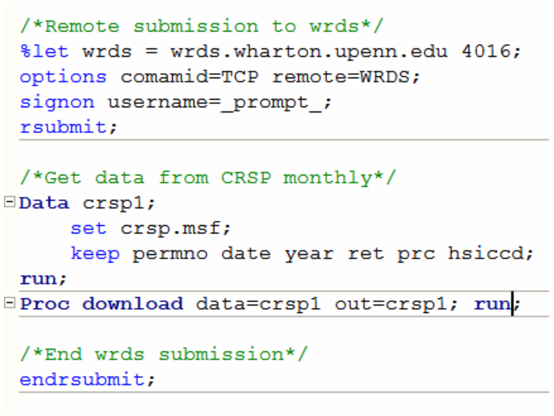
- For research intensive tasks, Unix and PC connect are superior to the web interface.
- SAS PC connect has the following advantages:
  - No need to learn unix code. More user-friendly but just as powerful as the unix interface.
  - Easier to edit programs and debug.
  - Can move across windows to view program, output and log file.
- One issue with PC Connect: jobs that take more than 1 hour to run require a SSH tunnel connection to WRDS.
- You may like to use Unix for very large jobs (e.g. those that take more than 1 day to run). Although doing everything on one platform is usually preferable.

Steps to Use SAS PC Connect

1. From http://wrds.wharton.upenn.edu/support/dslist/dslist.shtml Determine wrds library name for dataset. Eg. CRSP monthly stock returns library is “crsp.msf”.
2. Determine variable names needed. E.g., permno, date, ret, prc, vol from crsp.msf dataset.
3. Write your access program and sandwich it with the PC connect commands.
4. Run the program. SAS will connect to WRDS and run the code on the WRDS Unix server. When the program completes, the resulting output will be downloaded to your PC if you have a proc download statement.

SAS PC Connect Commands

Sandwich your SAS program between the remote submission commands



```
/*Remote submission to wrds*/
%let wrds = wrds.wharton.upenn.edu 4016;
options comamid=TCP remote=WRDS;
signon username=_prompt_;
rsubmit;

/*Get data from CRSP monthly*/
Data crsp1;
    set crsp.msf;
    keep permno date year ret prc hsiccd;
run;
Proc download data=crsp1 out=crsp1; run;

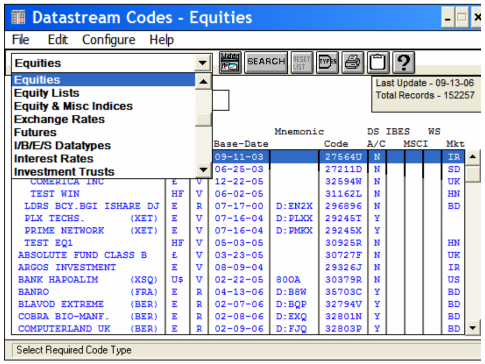
/*End wrds submission*/
endrsubmit;
```

Datastream/Worldscope

- Requires a software installation on your desktop. Important to log out after use because only one person can be logged in.
- 2 ways of access:
  - Datastream Advance Excel add-in (simple but limited usefulness)
  - DS Windows macros (useful website, http://www.princeton.edu/~econlib/ds/samplemac.htm
  - Cross-sectional data (use 900A macro)
  - Time-series data (use 900B macro)
- If you have many macros to run, DS Agenda can help you to run them sequentially.

Datastream/Worldscope

- Categories of Data that will be useful
  - Equities
  - Equity Lists
  - Equity & Misc Indices
  - Exchange Rates
  - Economic Series
  - Interest Rates
- Variables available
  - Datatypes
  - Worldscope Data Items



Equities
Equity Lists
Equity & Misc Indices
Exchange Rates
Futures
I/B/E/S Datatypes
Interest Rates
Investment Trusts

Last Update - 09-13-06
Total Records - 152257

			Base-Date	Mnemonic	Code	DS A/C	IBES	MSCI	WS	Mkt
			09-11-03		27564U	N				IR
			06-25-03		27211D	N				SD
COMERICA INC	£	V	12-22-05		32594W	N				UK
TEST WIN	HF	V	06-02-05		31162L	N				HN
LDRS BCY.BGI ISHARE DJ	E	R	07-17-00	D:EN2X	296896	N				BD
PLX TECHS. (XET)	E	V	07-16-04	D:PLXX	29245T	Y				
PRIME NETWORK (XET)	E	V	07-16-04	D:PMKX	29245X	Y				
TEST EQ1	HF	V	05-03-05		30925R	N				HN
ABSOLUTE FUND CLASS B	£	V	03-23-05		30727F	N				UK
ARGOS INVESTMENT	E	V	08-09-04		29326J	N				IR
BANK HAPOALIM (XSQ)	U$	V	02-22-05	800A	30379R	N				US
BANRO (FRA)	E	R	04-13-06	D:B8W	35703C	Y				BD
BLAVOD EXTREME (BER)	E	R	02-07-06	D:BQP	32794V	Y				BD
COBRA BIO-MANF. (BER)	E	R	02-08-06	D:EXQ	32801N	Y				BD
COMPUTERLAND UK (BER)	E	R	02-09-06	D:FJQ	32803P	Y				BD

Select Required Code Type

Eg. Get prices for all 30 Dow Jones Index stocks

1. Open DS Windows
2. Get dscodes (identifier codes) for all 30 firms. Under “equity lists” category, search for Dow Jones Industrial and we find the code LDJINDUS.
3. Enter LDJINDUS into the Codes: section of the 900A macro (cross-section macro).
4. Run 900A macro to get dscodes.
5. Collect the output dscodes and paste them onto the 900B macro.
6. Run 900B macro to get the monthly price series for each of the 30 firms.

900B – Time-series macro

```
STARTDC(CSVFILE,"C:\dataosu\900bdata.csv")
OpenData Codes
Loop:
If &endOfData = FALSE Then
Input code

Send(  "900B " + code + "(P), 1-1-2002, 12-31-2003, D//C" )

Send("[CLEAR]")
        Goto Loop
EndIf
ENDDC
End

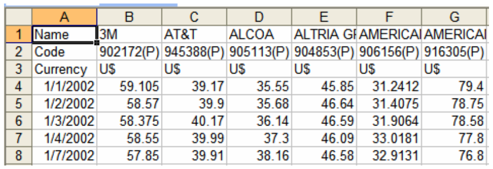
Codes:
DATA

"902172"
"945388"
"905113"
"904853"
"906156"
"916305"
"904818“

 ENDDATA
```

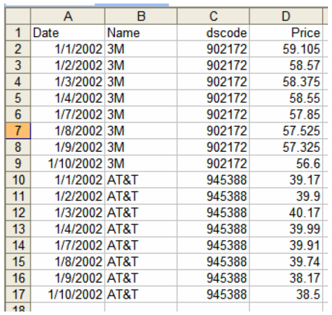
Making downloaded Datastream data usable

- Data extracted is in a panel format.



	A	B	C	D	E	F	G
1	Name	3M	AT&T	ALCOA	ALTRIA GI	AMERICAI	AMERICAI
2	Code	902172(P)	945388(P)	905113(P)	904853(P)	906156(P)	916305(P)
3	Currency	U$	U$	U$	U$	U$	U$
4	1/1/2002	59.105	39.17	35.55	45.85	31.2412	79.4
5	1/2/2002	58.57	39.9	35.68	46.64	31.4075	78.75
6	1/3/2002	58.375	40.17	36.14	46.59	31.9064	78.58
7	1/4/2002	58.55	39.99	37.3	46.09	33.0181	77.8
8	1/7/2002	57.85	39.91	38.16	46.58	32.9131	76.8

- But we need it in a stacked format for analysis. Need to write a program (e.g. in SAS) to transpose the data.



	A	B	C	D
1	Date	Name	dscode	Price
2	1/1/2002	3M	902172	59.105
3	1/2/2002	3M	902172	58.57
4	1/3/2002	3M	902172	58.375
5	1/4/2002	3M	902172	58.55
6	1/7/2002	3M	902172	57.85
7	1/8/2002	3M	902172	57.525
8	1/9/2002	3M	902172	57.325
9	1/10/2002	3M	902172	56.6
10	1/1/2002	AT&T	945388	39.17
11	1/2/2002	AT&T	945388	39.9
12	1/3/2002	AT&T	945388	40.17
13	1/4/2002	AT&T	945388	39.99
14	1/7/2002	AT&T	945388	39.91
15	1/8/2002	AT&T	945388	39.74
16	1/9/2002	AT&T	945388	38.17
17	1/10/2002	AT&T	945388	38.5
18				

Overview

Importance of Data in Financial Research

Describe each Database

How to Access the Data?

Practice sessions in Fisher 606