

Data Session – Fall 2022

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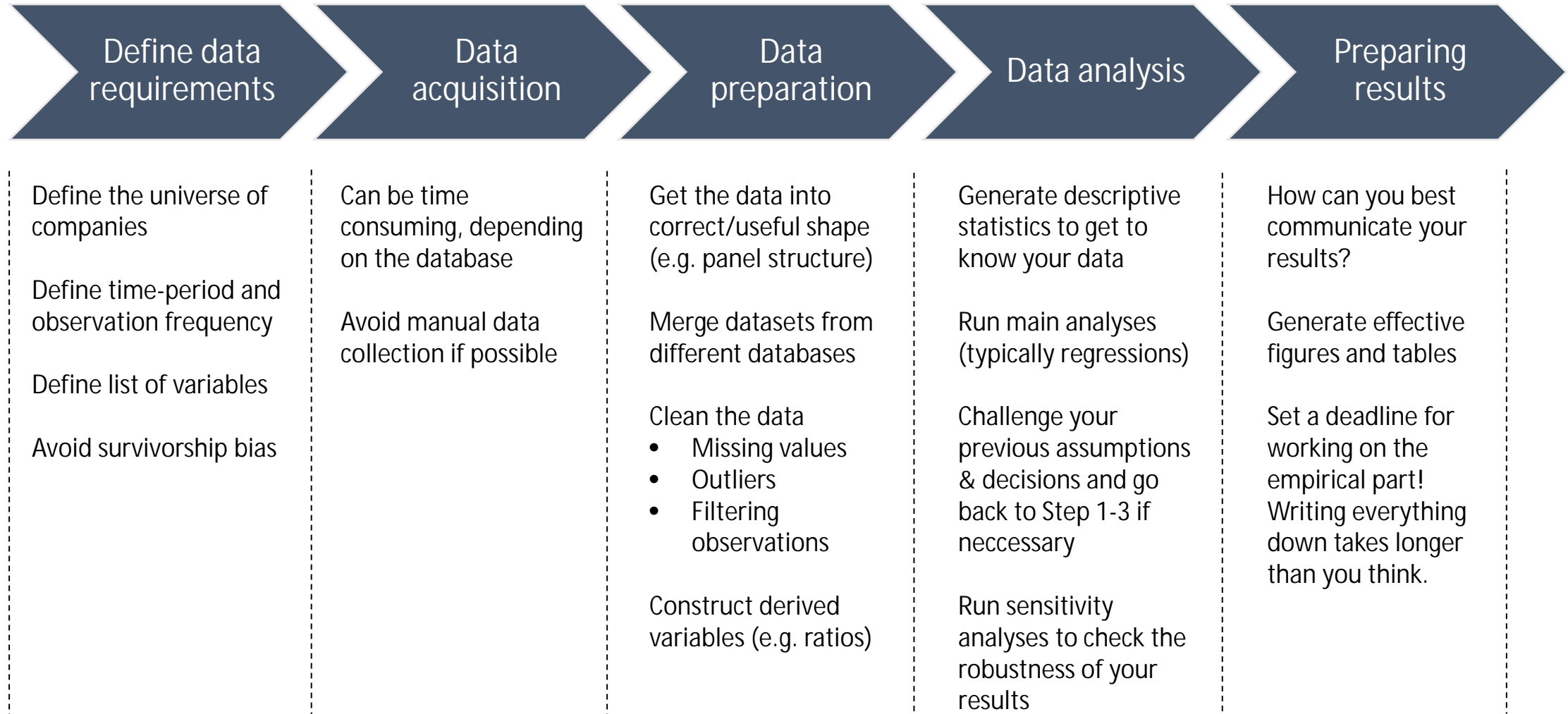


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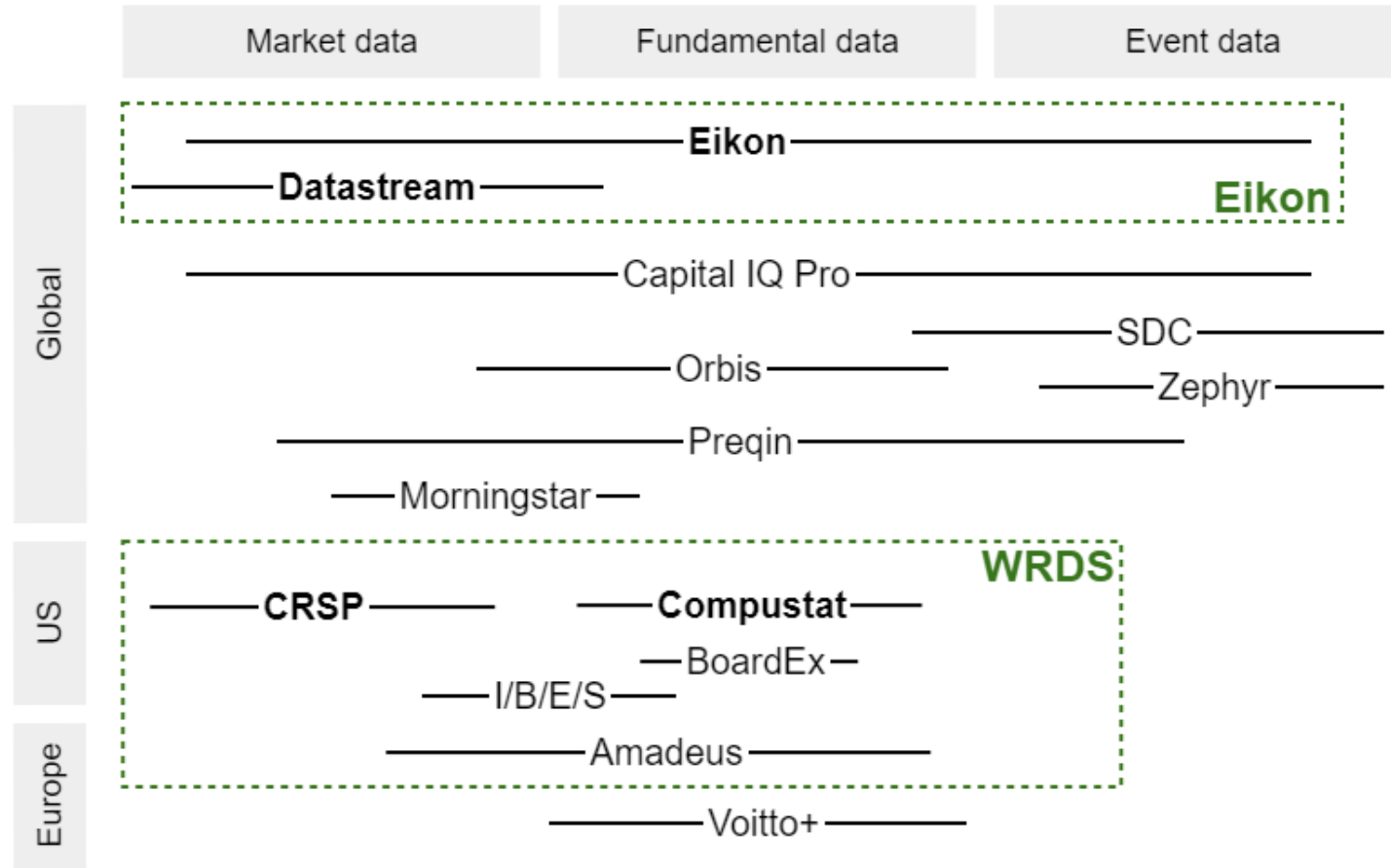
Agenda

- Workflow of conducting an empirical project
- Which databases are available?
- How to access the databases?
- Demo of common databases and use cases:
 - WRDS
 - EIKON
 - Datastream

Workflow of conducting an empirical project



Overview of available commercial databases



Main Platforms

- WRDS (Wharton Research Data Services)
 - Web-based platform for downloading research oriented datasets through a common web interface.
 - Convenient access
 - Hosts the most commonly used datasets in Finance research: CRSP/Compustat
- Eikon
 - Information platform by Refinitiv (formerly Thomson Reuters)
 - Very broad in scope
 - Mainly designed for use by the financial industry, but also useful for research
 - Access through desktop application and Excel Add-ins
 - Batch download possibilities sometimes limited

What is in WRDS?

Database	Data category	Region	Type of firms
CRSP	Market data (security returns, market index returns)	U.S.	public
Compustat	Fundamental data (balance sheet, income statement, cashflow statement, etc.)	U.S.	public
Fama French Factor Returns	Factor portfolio returns, risk-free rates	U.S.	
IBES	Analyst estimates (detail and consensus)	U.S.	public
Execucomp	Compensation data	U.S.	public
BoardEx North America	Compensation, employment, and relationship data	U.S.	public and large private
Thomson Reuters Institutional Holdings	Fund holdings, Fund characteristics, ownership structure of public firms	U.S.	mutual funds, investment firms
FINRA TRACE	Bond market data	U.S.	public and large private
Amadeus (Bureau van Dijk)	Fundamental data (financials, ownership structure)	Europe	private
Preqin	Private Equity and Venture Capital	Global	private
Tools by WRDS	Beta Suite; Financial Ratios Suite; Event Study Tool; Efficient Frontier Tool		

What is in Eikon?

Data category	Product
Fundamental data (balance sheet, income statement, cashflow statement, etc.)	Refinitiv Fundamentals (formerly Worldscope)
Market data	
Corporate actions (Mergers & Acquisitions, IPOs)	Deal Analytics (formerly SDC)
Historical time series (equities, equity indices, bonds, credit default swaps, interest rates, macroeconomic time series)	Datastream
Analyst Estimates	IBES incl. guidance
Ownership structure	
Debt structure / ratings	
ESG scores	Formerly Asset4
News	

What is in Eikon?

Data category	Product	EIKON Desktop	Excel Add-on
Fundamental data (balance sheet, income statement, cashflow statement, etc.)	Refinitiv Fundamentals (formerly Worldscope)	✓	✓
Market data		✓	✓
Corporate actions (Mergers & Acquisitions, IPOs)	Deal Analytics (formerly SDC)	✓	✓
Historical time series (equities, equity indices, bonds, credit default swaps, interest rates, macroeconomic time series)	Datastream	✗	✓ (Datastream Add-on)
Analyst Estimates	I/B/E/S	✓	✓
Ownership structure		✓	✓
Debt structure / ratings		✓	✓
ESG scores	Formerly Asset4	✓	✓
News		✓	✗

What is in other commercial databases

Database	Data category	Region	Type of firms
Orbis (Bureau van Dijk)	Fundamental data (balance sheet, income statement, cashflow statement, ownership structure)	Global	private
Zephyr (Bureau van Dijk)	Mergers & Acquisitions	Global	public / private
Preqin	Private Equity and Venture Capital	Global	private
Morningstar	Mutual fund performance, characteristics	Global	mutual funds
Capital IQ Pro	Company financials, estimates, ownership, credit risk, M&A transactions, real estate; (no access to ESG data currently)	Global	public / private

Finance Database Wiki

<https://wiki.aalto.fi/display/FINDB>

Knowledge base with general information about the databases. Central location where we collect best practices and address common problems.

Content:

- Getting access
- How-to articles
- Tips and tricks
- Vendor materials
- Links to additional resources

Getting access

- Refer to the Database Wiki for instructions on how to access a particular database
- WRDS: Remote access with personal account
 - Instructions at <https://wiki.aalto.fi/x/gSYJCw>
- Eikon/Datastream: Temporary on-demand licenses
 - Instructions at <https://wiki.aalto.fi/x/64KwD>
 - License Pool: <https://license-pool.rahtiapp.fi/>
 - Virtual Desktop Infrastructure: <https://mfavdi.aalto.fi/>

Getting help

- Aalto Finance Database Wiki: <https://wiki.aalto.fi/display/FINDB>
- Product specific documentation on WRDS
 - Manuals with variable descriptions, overviews, FAQs
 - Short training videos: <https://wrds-www.wharton.upenn.edu/pages/dart-pathways/>
- Training videos for Eikon: <https://training.refinitiv.com/eikon>
 - Pre-built Eikon templates as a starting point (<https://wiki.aalto.fi/x/iIHECw>)
- Office Hours:
 - Walk-in office hours for quick questions: Tuesdays 1-2 p.m., Room T311 (check website beforehand: aalto.fi/en/departments-of-finance/nikolas-breitkopf)
 - If you get stuck, email me at nikolas.breitkopf@aalto.fi

Typical sample construction scenarios

Target Sample	Possible selection criterion	Recommended data sources
Public U.S. firms	Firms listed at NYSE, AMEX or Nasdaq	CRSP & Compustat
Public Non-U.S. firms	<ul style="list-style-type: none">• Historical members of a broad stock market index• All firms listed at the main stock market of a country	Datastream for market data Eikon for fundamental data
Private firms	All private firms in a country with average historical total assets exceeding some threshold	Orbis



Add additional information from other databases, depending on research question

Merging databases

General strategies:

- Find a linking table constructed by the database vendor or by other researchers
- Find a reliable common identifier available in both databases
- Avoid linking by name only
- See Wiki for more information: <https://wiki.aalto.fi/x/pcYJCw>

Common use cases:

- Linking CRSP and Compustat:
 - CRSP primary security identifier: PERMNO
 - Compustat primary company identifier: GVKEY
 - Historical linking table offered by CRSP/Compustat Merged
- Linking international public firms across databases:
 - ISIN is available as common identifier in most databases and is generally suitable for linking
- Linking SDC (M&A) firms to fundamental data:
 - U.S. sample: <https://github.com/michaelewens/SDC-to-Compustat-Mapping>
 - International sample: Use Ticker in conjunction with country information and name check

Demo 1: WRDS

- Goal: Download Compustat fundamental data of companies traded at NYSE, AMEX and NASDAQ. Include links to CRSP securities.
- Solution:
 - Use CRSP/Compustat Merged \Rightarrow Fundamentals Annual file
 - Filter observations by exchange code in Stata

Demo 2: Eikon Desktop & Excel Add-in

- Goal:
 - What data is available in Eikon about a particular company?
 - How can we download the same information in Excel?
- Solution:
 - Search bar and „360 Menu“ in Eikon Desktop
 - Formula Builder and Templates in the Eikon Excel Add-in

Demo 3: Datastream

- Goal: Get daily returns of the members of the HEX Index
- Solution:
 - Static requests with constituent lists to get index members
 - Time series request with the list of obtained identifiers