

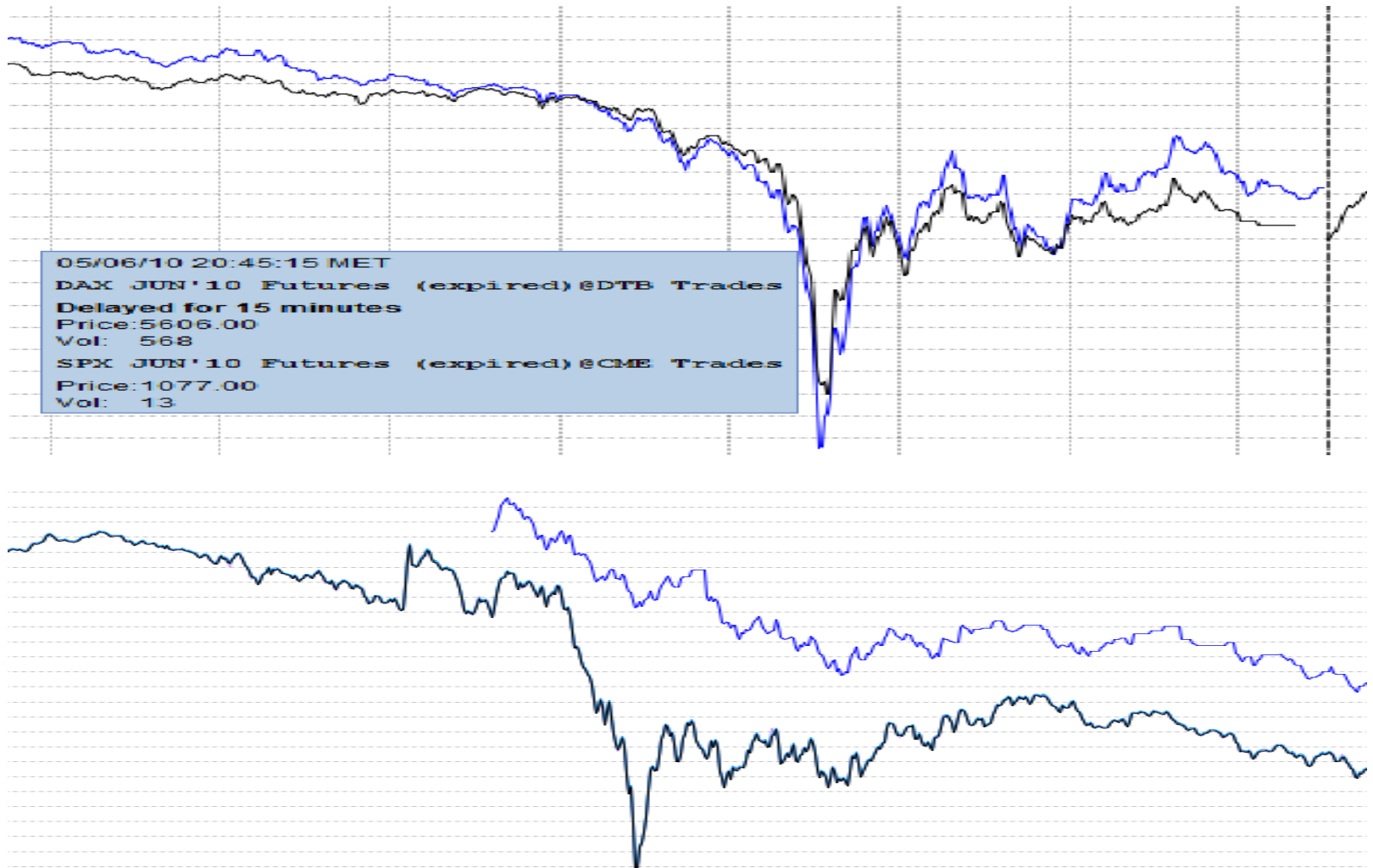
Finance in the 21st Century: 4 Bytes of Financial Data

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Topic of our research: Liquidity

- Liquidity: quickly trade large volume with low costs.
- High liquidity increases economic growth
 - investors are willing to commit to long-term projects and companies pursue them.
- Joint work with: Mathijs van Dijk, Dion Bongaerts, Darya Yuferova
- liquidity shocks in one market (e.g. house loans) can have effects in
 - seemingly unrelated asset classes (stocks)
 - seemingly unrelated countries (worldwide)

Goal of our research: SPC Crash (6-May-10) - 6% (above) in 15 minutes
DAX Crash (25-Aug-11) - 4 % (below) in 15 minutes



4 Bytes of Financial Data: 5196.56



France	CAC-40	2010.41
Germany	DAX	5196.56
	EUR	14040.77

4 Bytes of Financial Data: 5196.56

5196.56

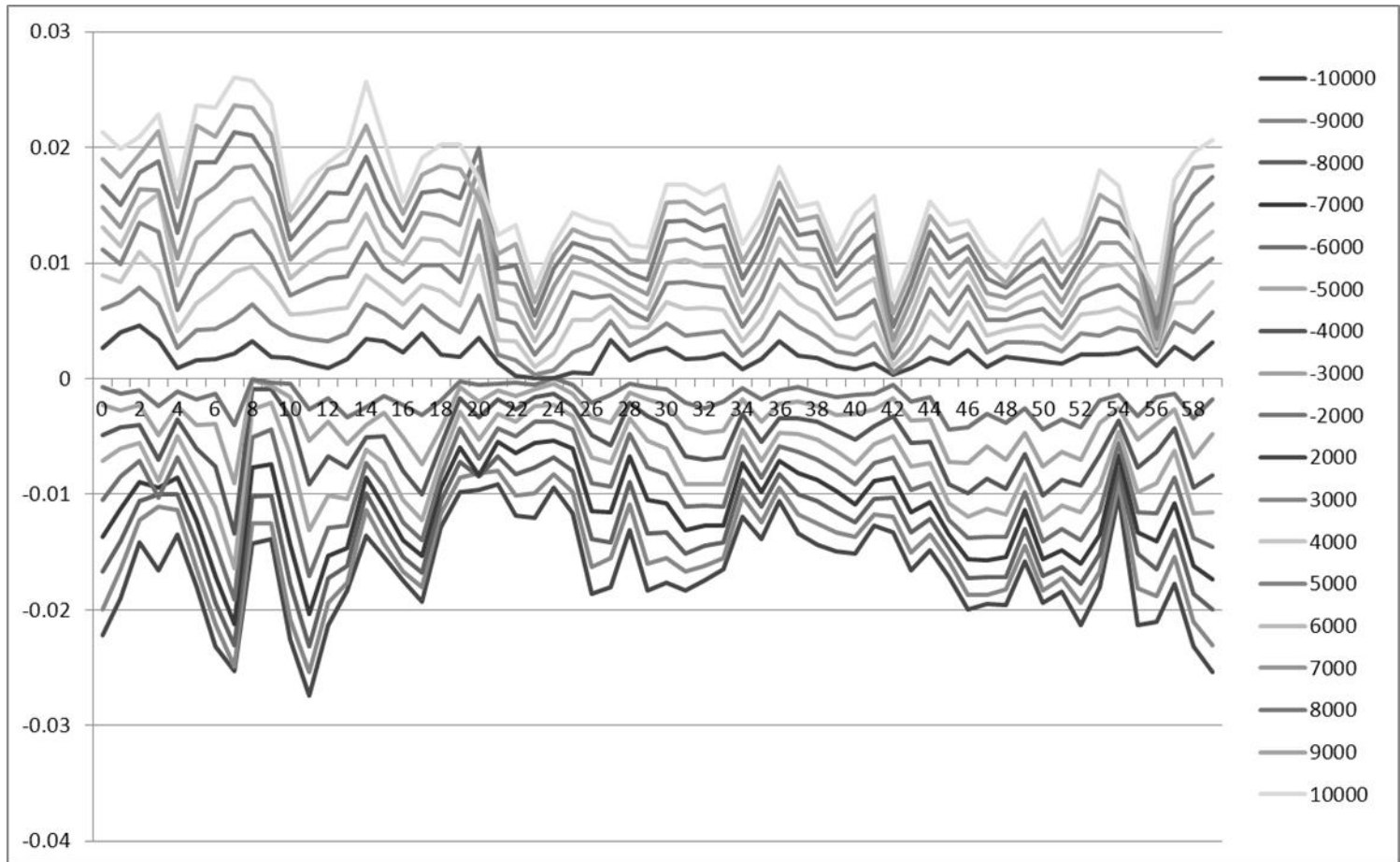
4 Bytes of Financial Data: 5196.56

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4 Bytes of Financial Data

Instrument / Number of Daily Observations	Trades	Best Buy and Sell prices for one share	Best Buy and Sell prices for X shares	Market- Makers buy/sell prices
30 DAX Stocks (2010)	90,000	390,000	2,400,000	
3 DAX Futures (2010)	120,000	180,000		
40 Dax Options (2011, 2005)	370,000			5 million
Eurex (2011)	9.1 million			

DAIGN.DE On 26-Jan-2010, 13 to 14 o'clock



The need for the Cloud

- More than 400 exchanges worldwide
- More than 45 million different instruments
- More than 350 data fields
- 15 years of data (since 1996)

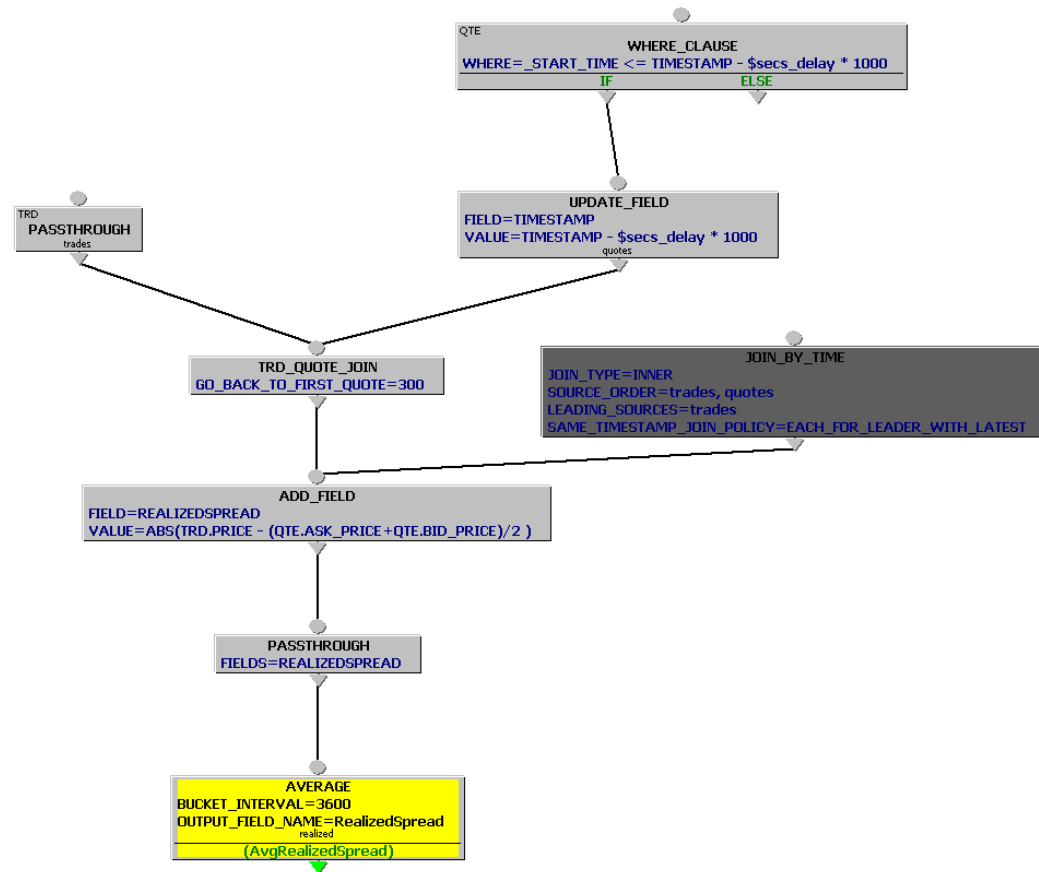
- Data Storage: Around 200,000 Giga Bytes of data

- CPU Power: Often need to merge data:
 - Trades To Quotes
 - Trades On X To Trades On Y



Thank You For Your Attention

Need to merge data: OneTick



Financial development and economic growth: The role of liquidity

- Rajan and Zingales (1998)
 - Financial development should measure ease of bringing borrowers and savers together and confidence both parties have in each other.
 - Information, enforcement and transaction costs
- Wurgler (2000)
 - Developed financial markets allow better allocation of capital due to less co-movement due to common risk factors
- High Liquidity And Low Liquidity Risk
 - decrease information costs: increases speed of incorporating information into prices (smaller no-trade zones)
 - increase supply: investors are willing to commit to long-term projects if exit is cheap
 - increase demand: decrease of illiquidity premium on stocks decrease capital cost for companies
 - increases confidence: Decrease probability and costs of defaults?