

# A Financial Data Standard for the Analytic Use Case

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## The Problem

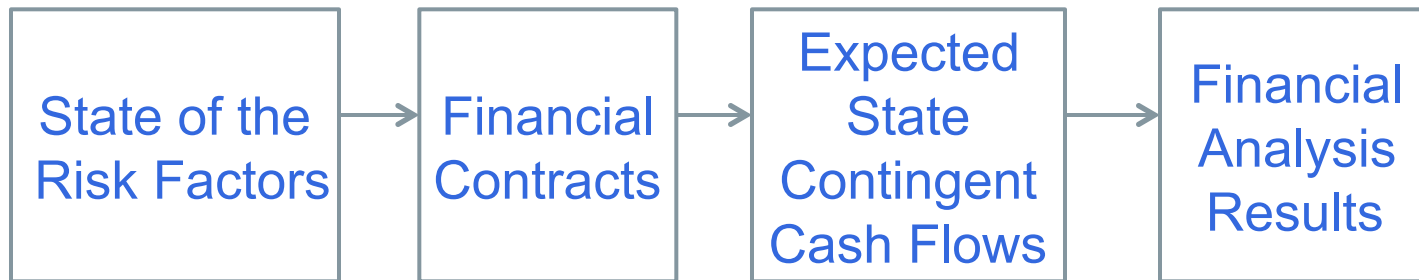
The state of financial data is about where manufacturing data was in the 19<sup>th</sup> century when every bolt had its own unique nut.

Recent evidence: DFA pushed the clearing and settlement of swaps onto clearing houses and required the reporting of swaps data to Swaps Data Repositories (SDRs)

- \* Vast amounts of data have been reported to the SDRs
- \* Feb. 10, 2014 the CFTC's TAC held a public hearing in which CFTC executives reported that the data could not be analyzed

# How to think about the problem

The molecules of the financial world are financial contracts



We still have a problem

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Financial contracts are legal documents written as words

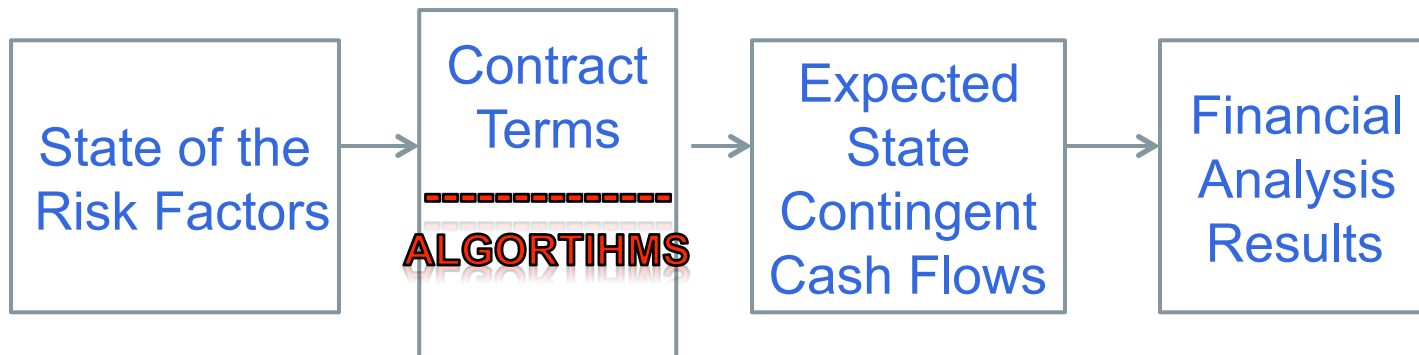
Financial Contract ***data*** are typically the terms of a written contract:

Principal, interest rate, amortization schedule,  
Day count method, payment schedules, etc.

This is not data that can be readily subjected to analysis

## How to think about the problem

Add the *missing link*



# Contracts, algorithms and cash flow patterns



Financial contracts are the deterministic component of financial markets:

The algorithms are the mathematical representation of legal agreements

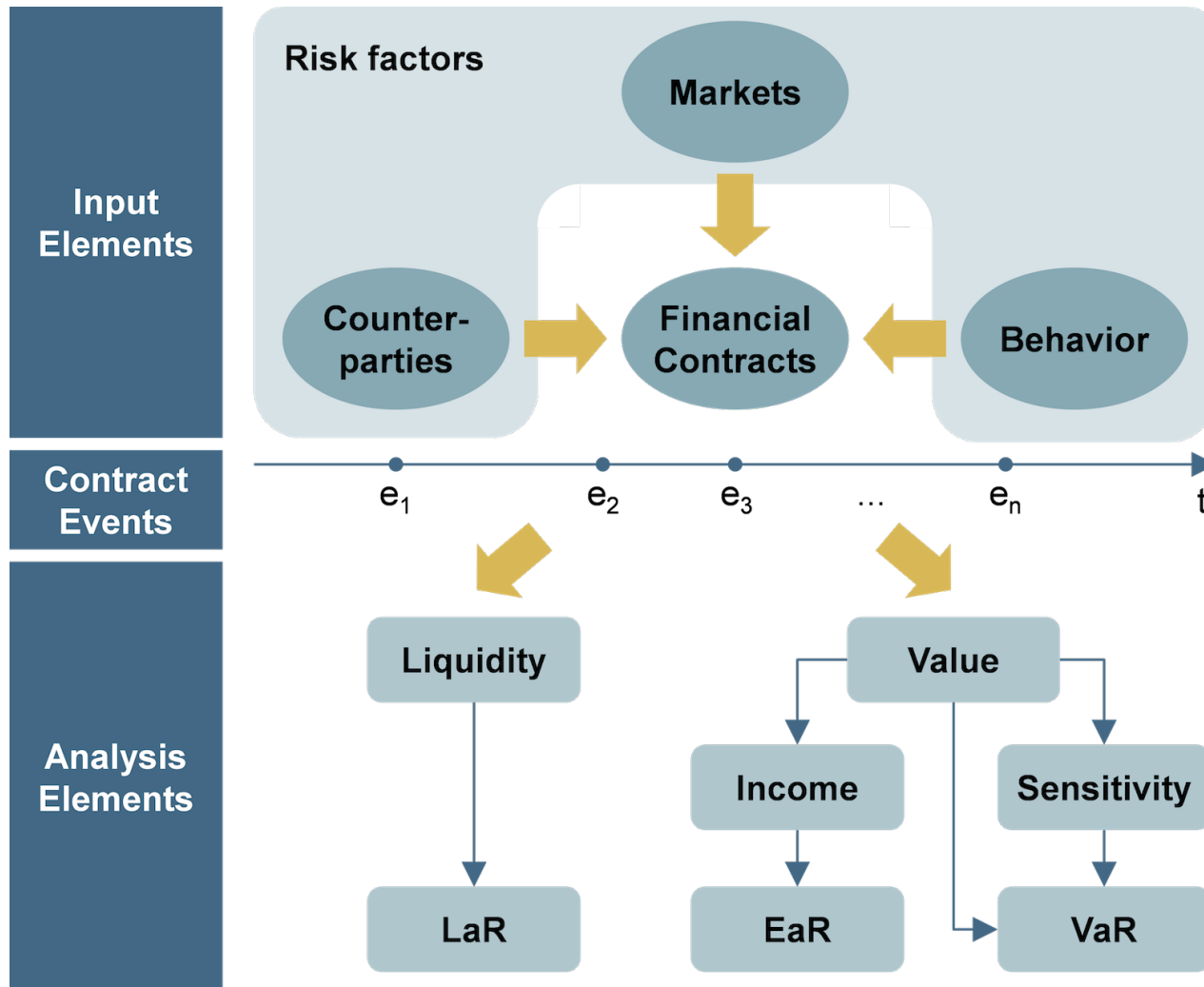
The number of cash flow patterns is limited:

Despite the large number of different financial products, many differences fall away when the focus is on cash flow

Analysis:

With a consistent, tested and validated algorithmic representation of financial contracts, analysts are free to bring any analytical approach/model to bear

# The model



Project ACTUS is building a set of 30 algorithms, which we call ***Contract Types*** (CTs), they will

- Represent at least 97 % of the financial market
- Generate state contingent cash flow with great precision
- Be ***open source*** and available to all from a not-for-profit ACTUS Foundation

Project ACTUS has benefited from the financial support of:

- The Alfred P. Sloan foundation
- Deloitte Consulting
- Stevens Institute of Technology
- Zurich University of Applied Sciences



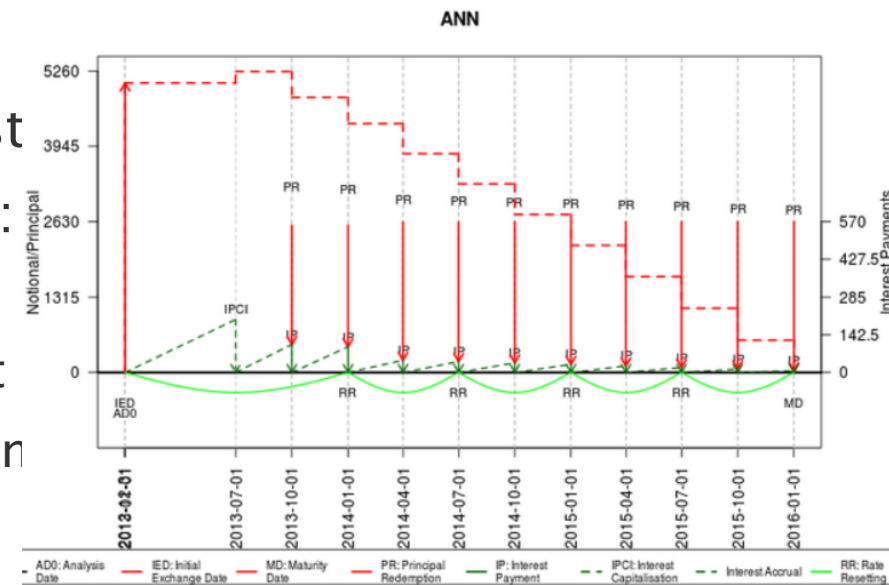
# Data and algorithms

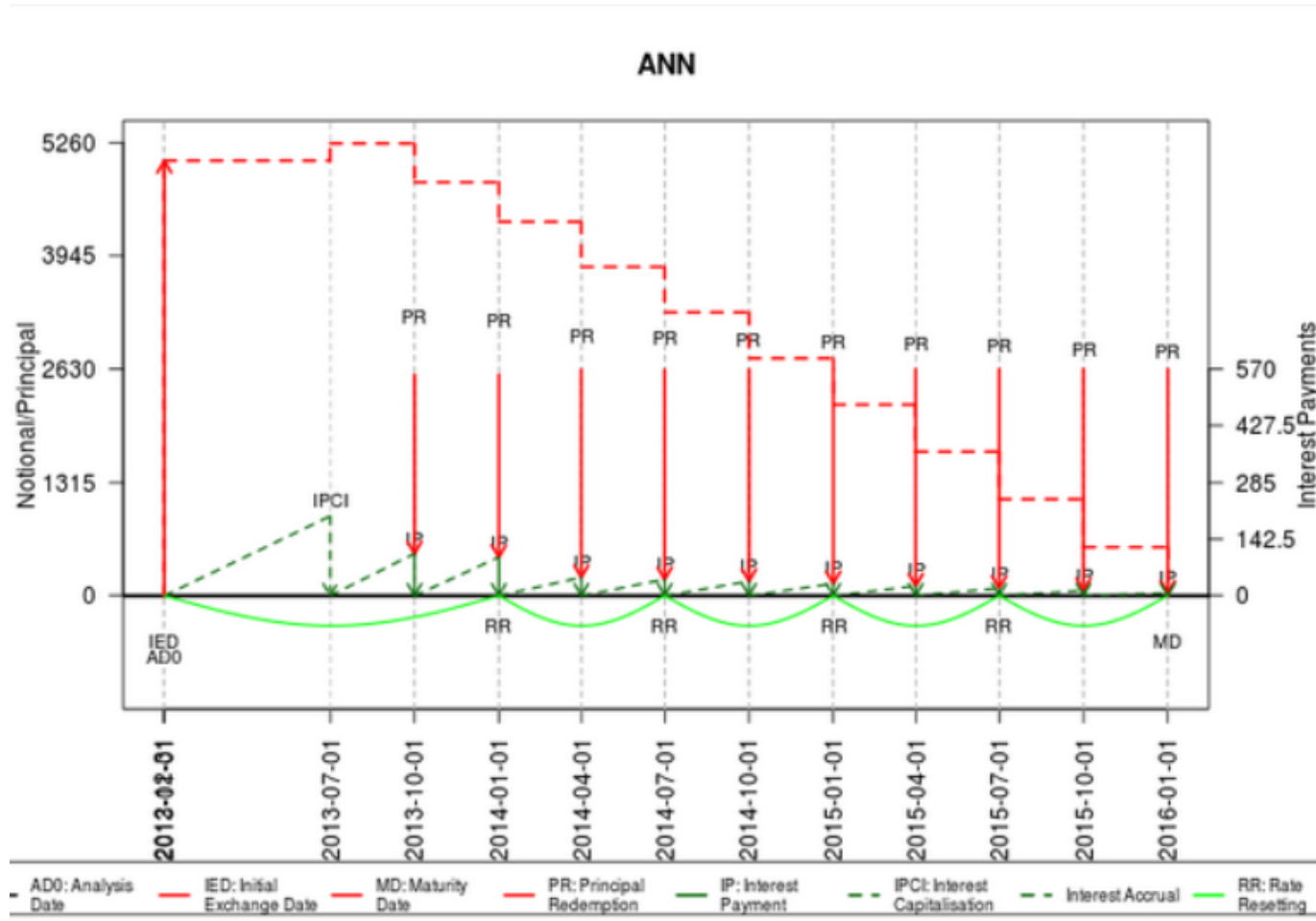
## Example of interest calculation

The actual payment must be calculated using data and the algorithms

For an Annuity CT, expected interest payments need a lot “contract data”:

Interest rate, day count method, business day convention, rate reset cycle, spread, principal amortization notional, Etc.





[www.projectactus.org](http://www.projectactus.org)