IS CORPORATE PERFORMANCE CONTAGIOUS?

How Credit Suisse HOLT uses Python

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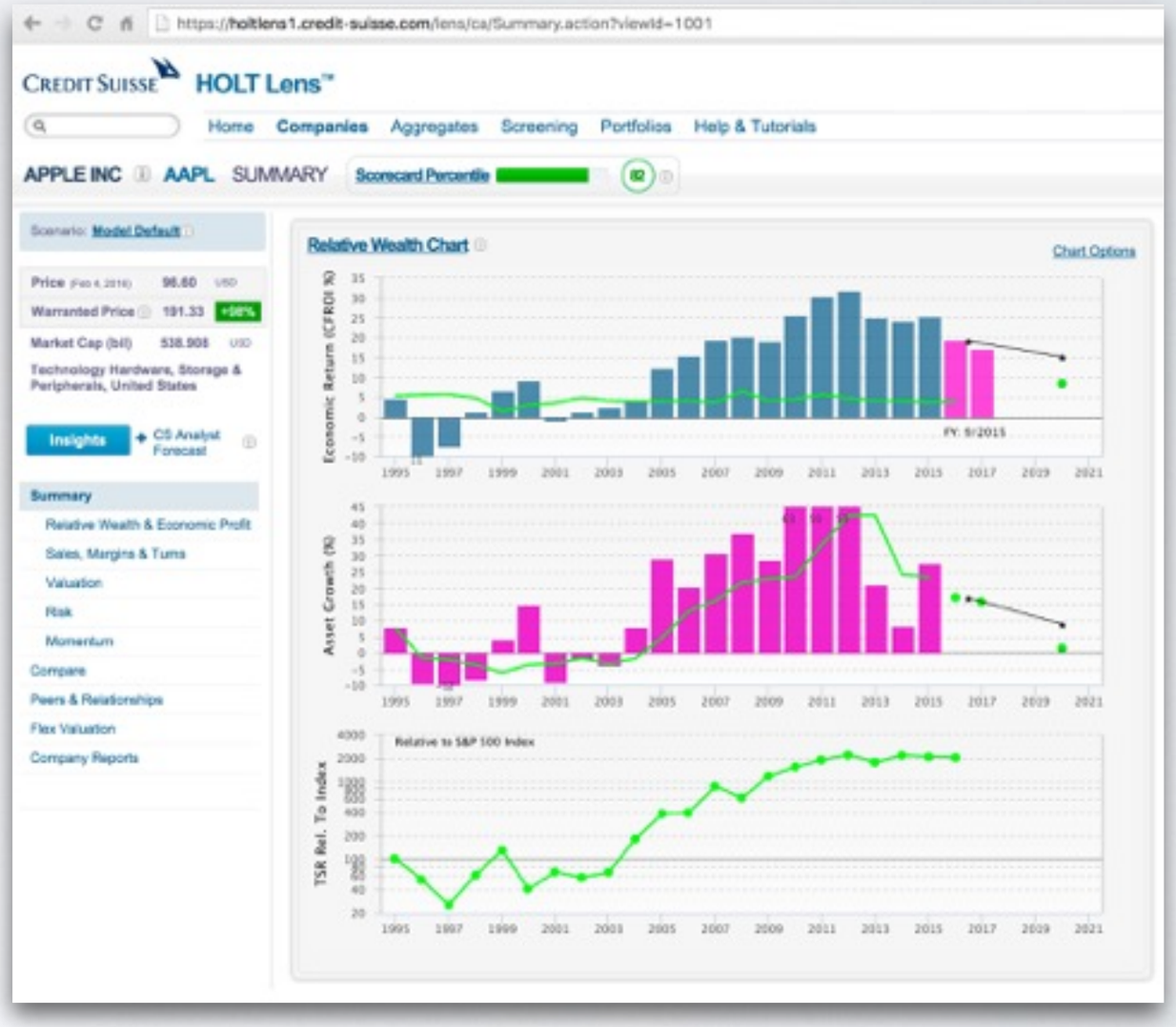
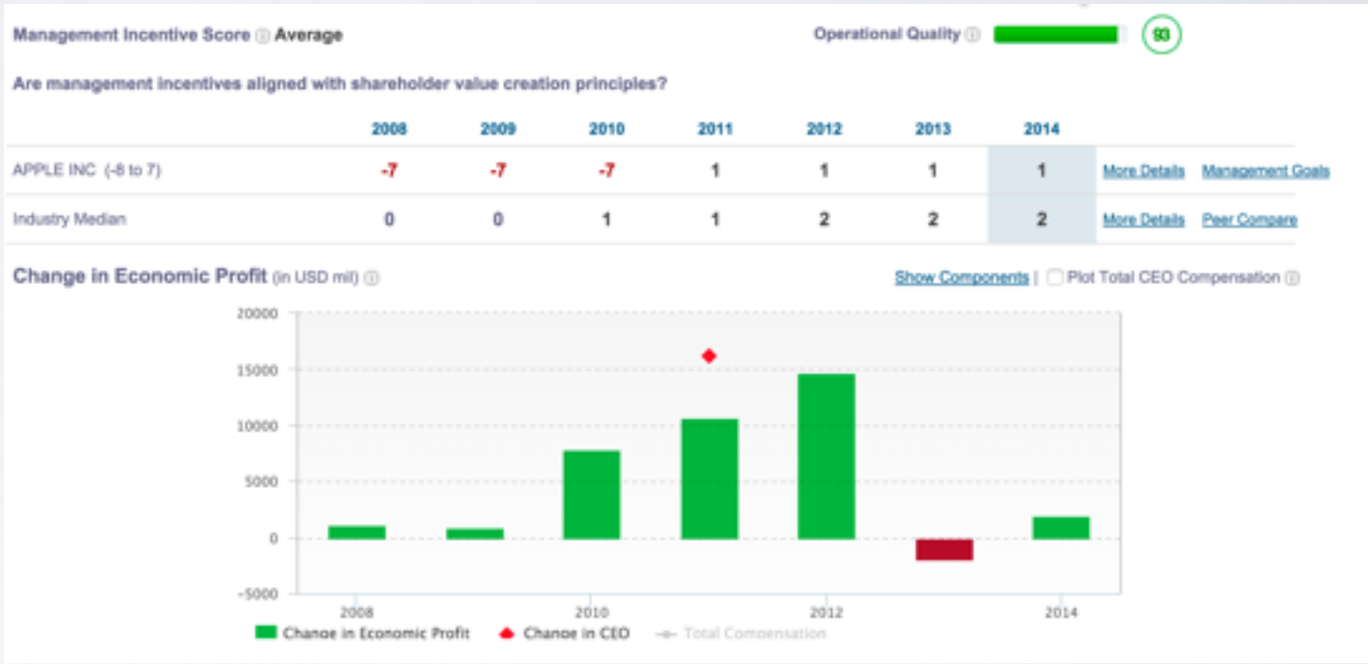
CREDIT SUISSE - HOLT

- Market Commentary
- Valuation Framework
- Quantitative Data



HOW WE USE PYTHON

- Data Processing - ETL
- Custom Reports
- Research Projects



WHAT MAKES A GOOD COMPANY?

- Good Business Model?
- Inspiring Mission?
- Corporate Governance?
- Talented Employees?

MANAGEMENT?

Executive Team

Tim Cook

Chief Executive Officer

investors.nike.com/investors/corporate-governance/default.aspx

SHOP NIKE+

INVESTORS

TIMOTHY D. COOK

Mr. Cook, 54, a director since 2005, is the Chief Executive Officer of Apple, Inc. Mr. Cook joined Apple in March 1998 as Senior Vice President of Worldwide Operations and also served as its Executive Vice President, Worldwide Sales and Operations and Chief Operating Officer. Mr. Cook was Vice President, Corporate Materials for Compaq Computer Corporation from 1997 to 1998. Previous to his work at Compaq, Mr. Cook served in the positions of Senior Vice President Fulfillment and Chief Operating Officer of the Reseller Division at Intelligent Electronics from 1994 to 1997. Mr. Cook also worked for International Business Machines Corporation from 1983 to 1994, most recently as Director of North American Fulfillment. Mr. Cook is currently a member of the Board of Directors of the National Football Foundation and Apple, Inc.

Compensation Committee (Chair)
Nominating and Corporate Governance Committee

Building a Network of Corporate Connections

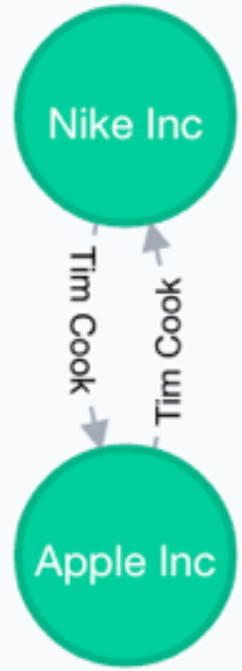
- Database: Neo4j
- Data: Thomson Reuters
- HOLT
- Python 3.x
- Py2Neo
- Gremlin/Cypher
- Pandas, NumPy
- statsmodels

30K Nodes
463K Edges

```
from py2neo import Node, Relationship, Graph

secure_graph = Graph("https://neo4j:password@localhost:7474/db/data/")
graph = Graph()

#Tim Cook - Aaple: Nike Example
aapl = Node("Company", name="Apple Inc")
nke = Node("Company", name="Nike Inc")
aapl_nke = Relationship.cast(aapl, "KNOWS", nke, {"type": 'Executive', "label": 'Tim Cook'})
nke_aapl = Relationship.cast(nke, "KNOWS", aapl, {"type": 'Director', "label": 'Tim Cook'})
graph.create(aapl_nke)
graph.create(nke_aapl)
```



IS CORPORATE PERFORMANCE CONTAGIOUS?

- Compare the CFROI of the target company and connected nodes
- Companies that closely orbit highly connected companies have correlated performance metrics

Average Number of Connections	Highly Connected	Mid Connected	Less Connected
1 Step	26	20	10
2 Steps	73	61	47
3 Steps	436	309	277
Average Separation	4.2		

RESEARCH

- What are the most connected companies?
- Do closely related companies correlate on corporate performance? Price return? Sales growth?
- Does the level of connection matter more for some industries? For larger or smaller companies?
- Do connected executives receive similar pay?
- Does the network predict anything?