



FINANCIAL CARTOGRAPHY

AND STRESS TESTING

Risk Summit 2015
Cambridge, 22 June 2015

Kimmo Soramäki, Founder and CEO
www.fna.fi, kimmo@fna.fi

Network Theory and Financial Risk



New Journal 'Network Theory in Finance' is launched in March 31, 2015

Editor in Chief: *Kimmo Soramäki*

Editorial Board included e.g.
Andrew Haldane, Bank of England
Franklin Allen, Imperial College/Wharton
Ignazio Angeloni, ECB

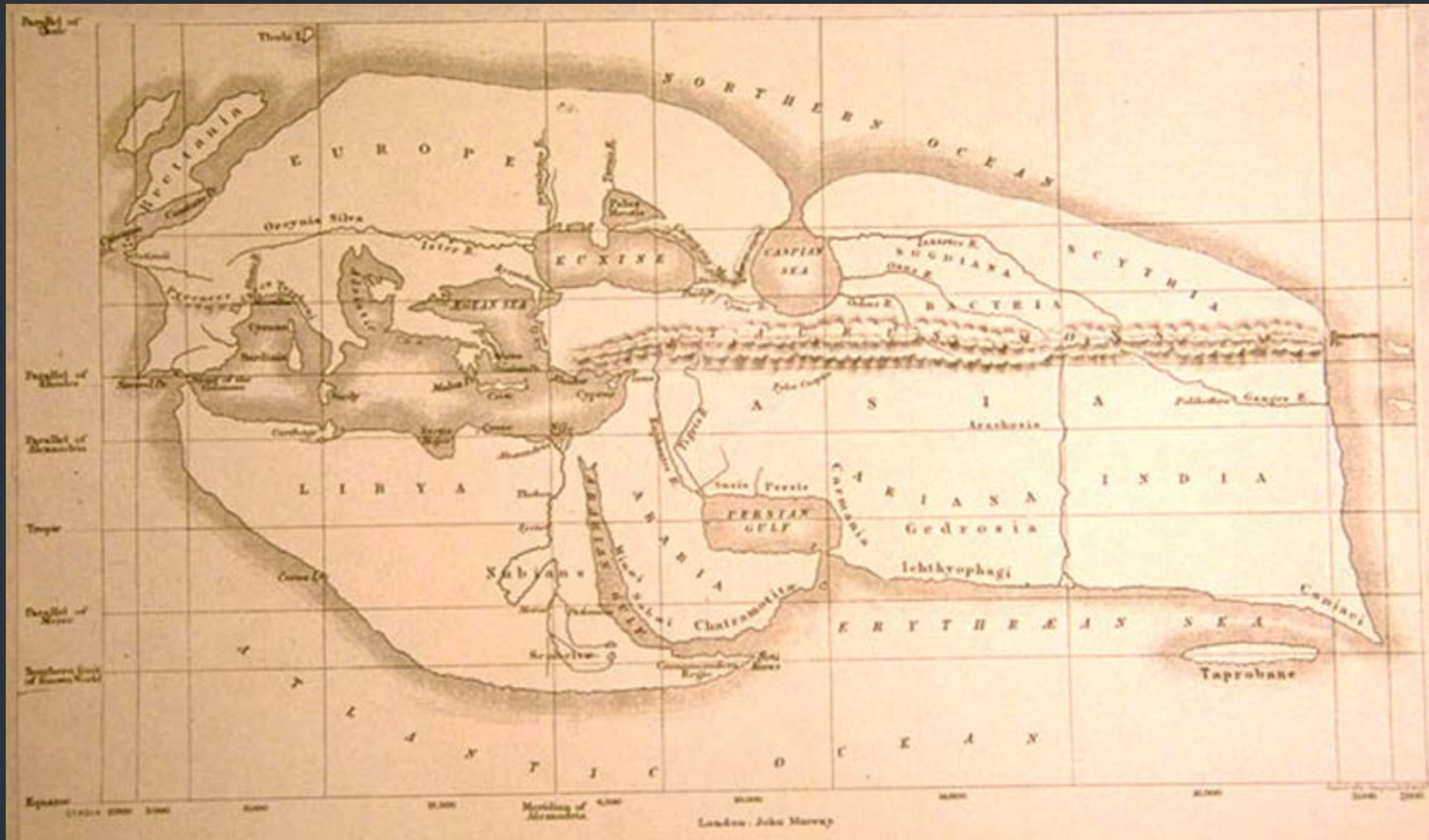


“Journal of Network Theory in Finance is an interdisciplinary journal publishing rigorous and practitioner-focused research on the application of network theory in finance. The journal connects academia, regulators and practitioners in solving important issues around financial risk”

**2nd Annual Conference on
9 September 2015 in Cambridge, UK.**

**Call for papers is out!
Submit paper to kimmo@fna.fi**

Maps, Latitudes, Longitudes



Eratosthenes' map of the known world c. 194 BC

Modern Maps

The image shows a Google Maps interface with walking directions. On the left, a blue sidebar displays the route details. The main map area shows a blue dotted line connecting the starting point (Cambridge Judge Business School) to the destination (Pint Shop) through various streets in Cambridge, including Trumpington St, Bene't St, and Wheeler St. The River Cam is visible on the left side of the map.

Walking directions

via Trumpington St **8 min**
0.4 mile

Use caution - may involve errors or sections not suited for walking

Cambridge Judge Business School
Trumpington Street, Cambridge CB2 1AG, United Kingdom

↑ Head northwest on Trumpington St toward Fitzwilliam St
0.3 mi

↻ Turn right onto Bene't St
364 ft

↑ Continue onto Wheeler St
Destination will be on the right
23 ft

Pint Shop
10 Peas Hill, Cambridge CB2 3PN, United Kingdom

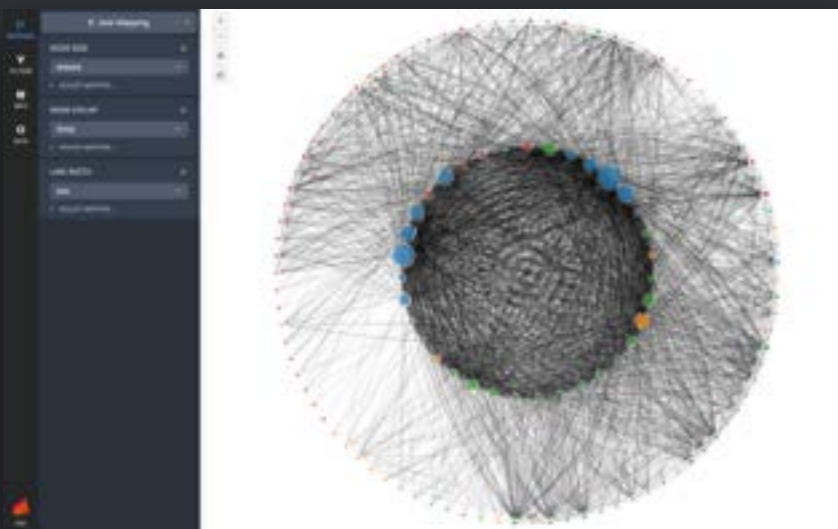
These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2015 Google

1. Visualize data 2. Place you on the map 3. Provide directions

Financial Cartography

Korean Interbank Payments



Bank Equity Cross Holdings



International Remittances



CLS Settlement



SWIFT Message Flows

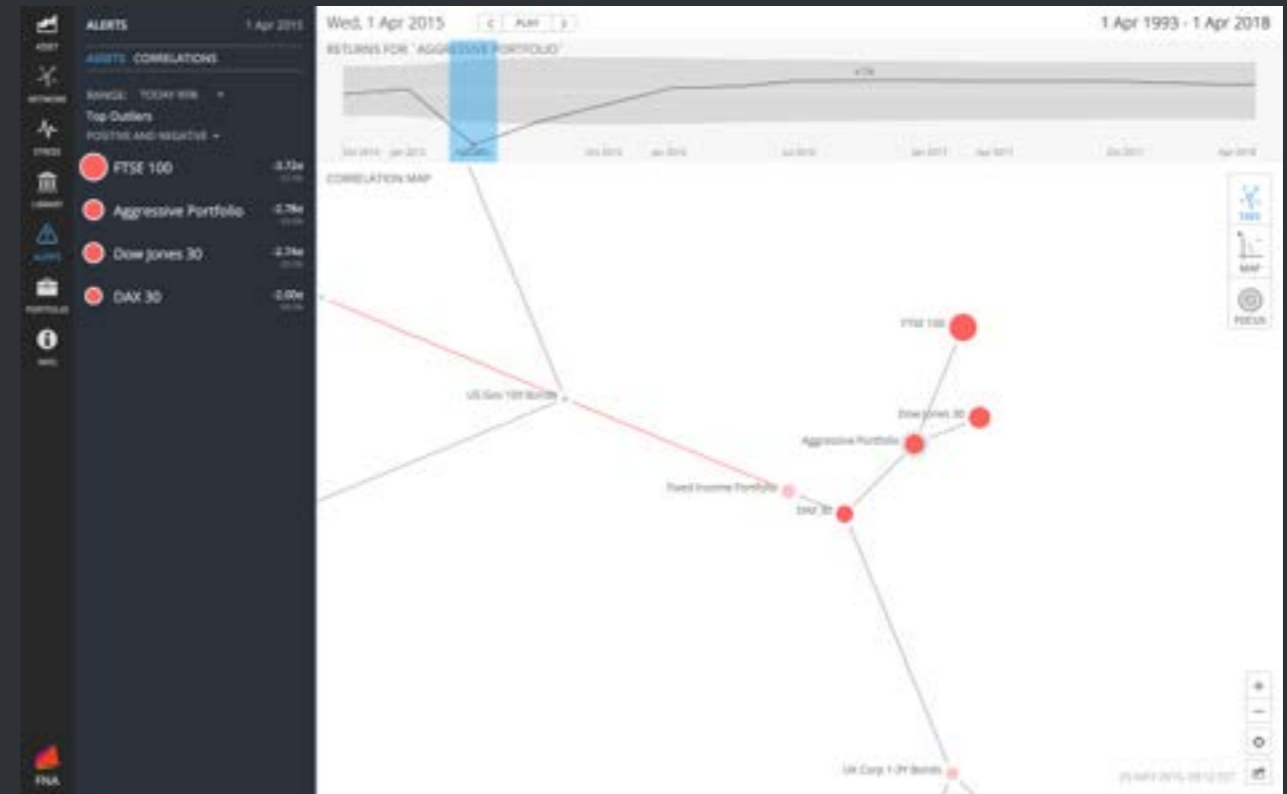


Bank-Asset networks

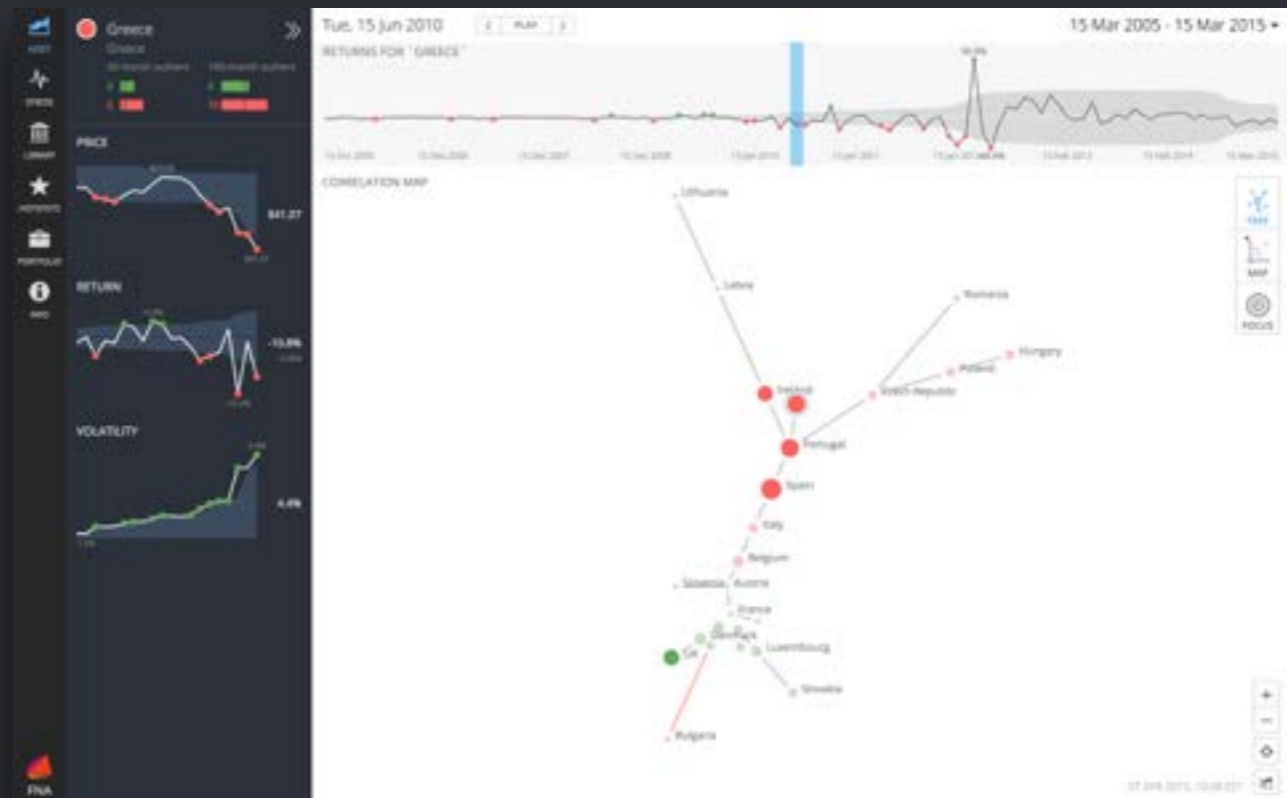


Maps for Portfolio Stress Testing

Global Property Crash
(Cambridge Scenario)



Greek Debt Crisis 2009 -





Global Property Crash - Scenario

ALERTS 1 Apr 2015

ASSETS CORRELATIONS

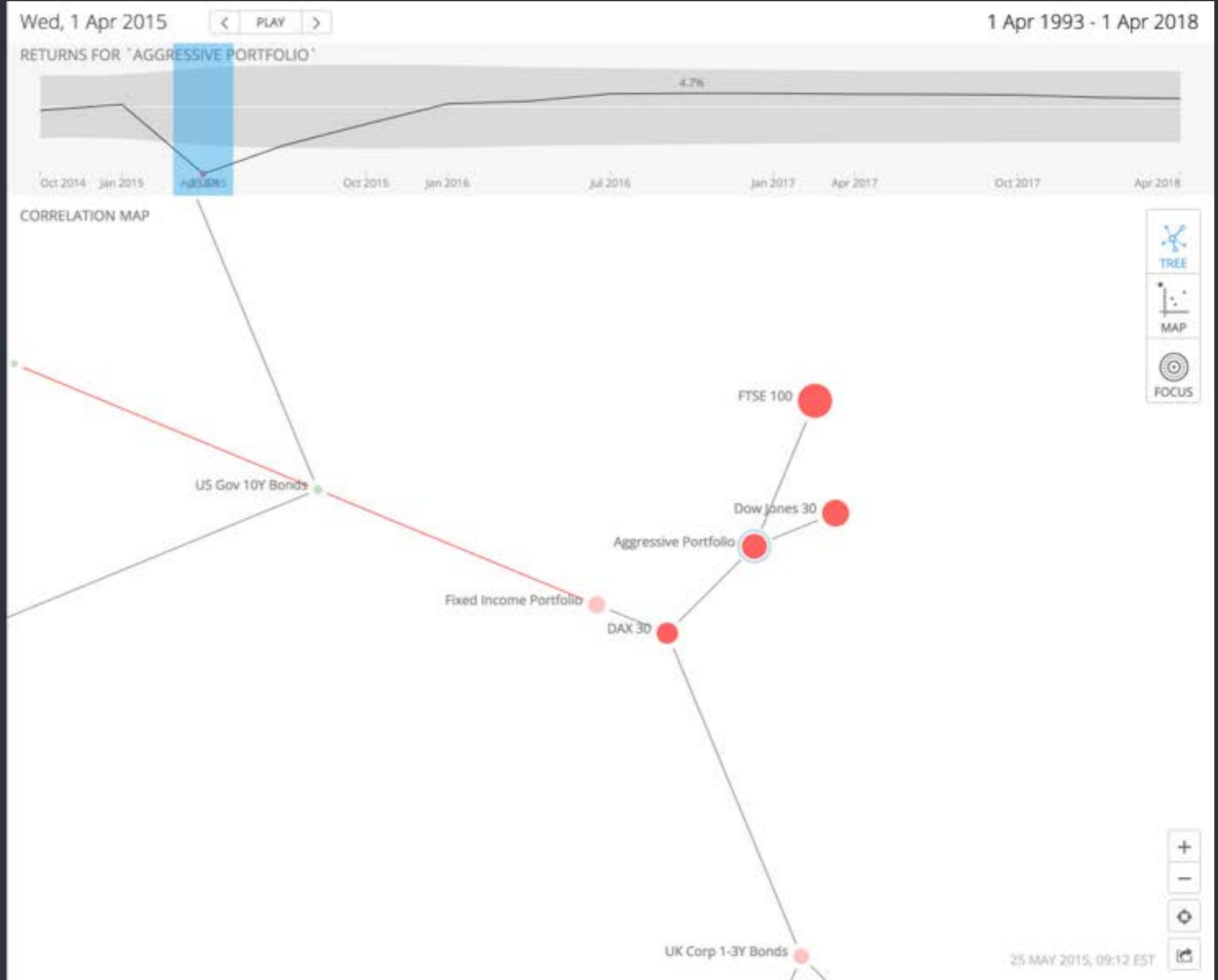
RANGE: TODAY 95%

Top Outliers
POSITIVE AND NEGATIVE

- FTSE 100 -3.72σ -52.6%
- Aggressive Portfolio -2.78σ -23.6%
- Dow Jones 30 -2.74σ -20.0%
- DAX 30 -2.00σ -28.3%

ASSET NETWORK STRESS LIBRARY ALERTS PORTFOLIO INFO

FNA



Greek Debt Crisis 2009 -

[View Interactive Dashboard](#)

ASSET
Greece

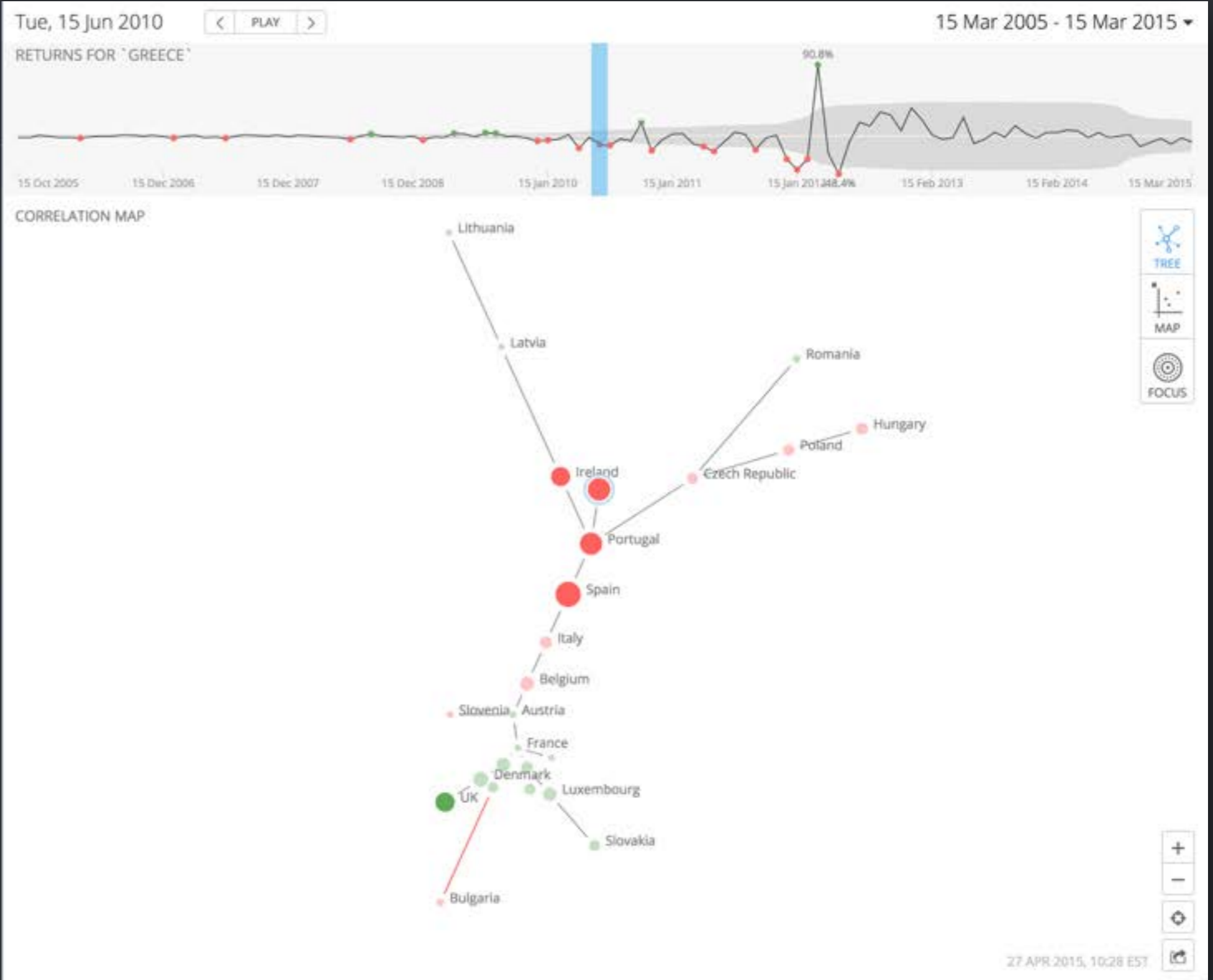
STRESS
20-month outliers: 3
100-month outliers: 6

PRICE
\$41.07

RETURN
-10.8%

VOLATILITY
4.4%

FNA





Dr. Kimmo Soramäki
Founder and CEO
kimmo@fna.fi