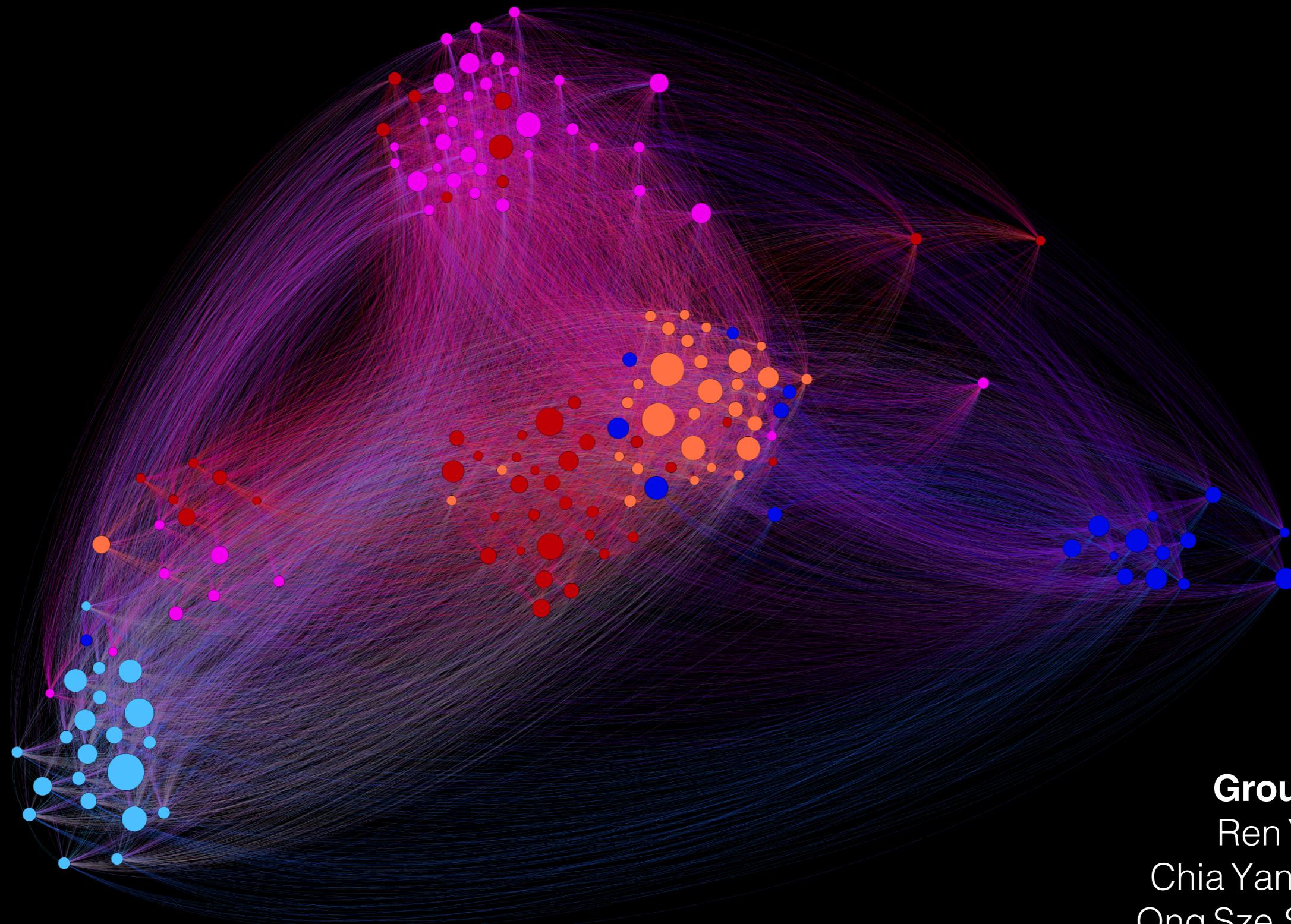
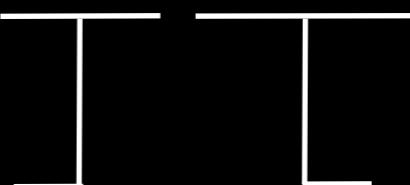


# Research Fields in Economics Through the Years



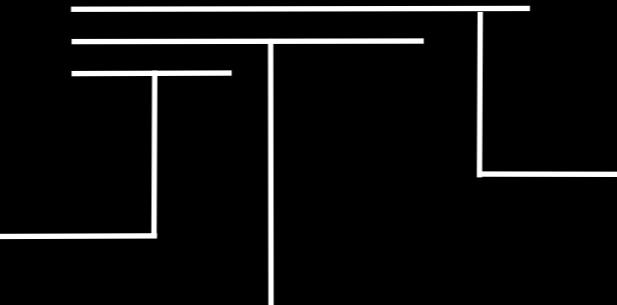
**Group 21**

Ren Yang  
Chia Yang Jin  
Ong Sze Swee

JEL classification code — **X01**  
Primary field  Sub-fields

**Example – C41**

Microeconomics



Perfect  
Competition

Market Structure  
& Pricing

The nodes represent JEL codes,  
we set a "weight" to these nodes, representing the  
number of times a paper is tagged by the JEL code.

JEL Code A



$N_a$  papers on Topic A

JEL Code B



$N_b$  papers on Topic B

JEL Code A



JEL Code B



$W_{a,b}$  papers tagged by both A and B

A undirected weight is added between two nodes when a paper tags both JEL codes

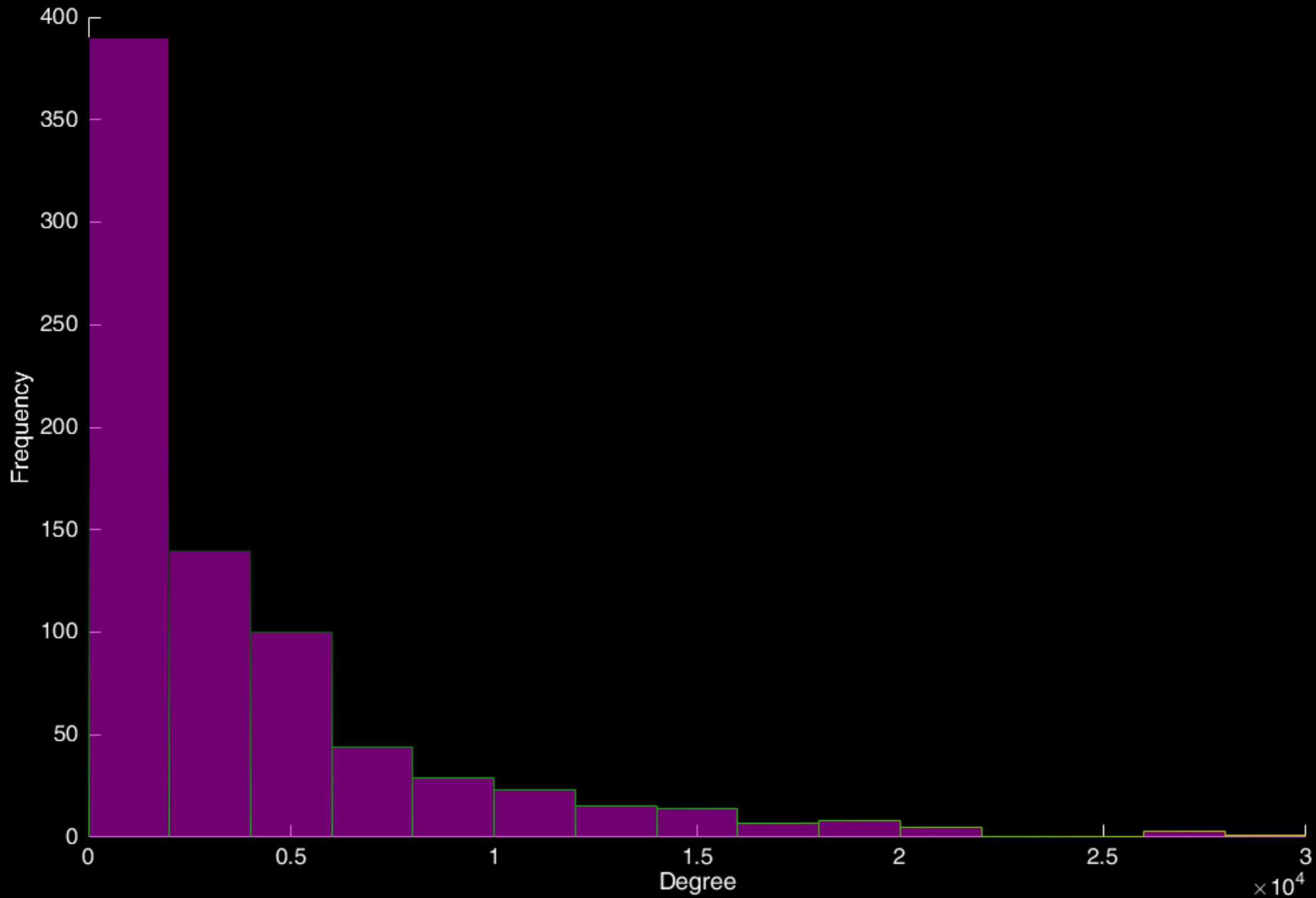
Papers: **439,395**

Nodes: **779**

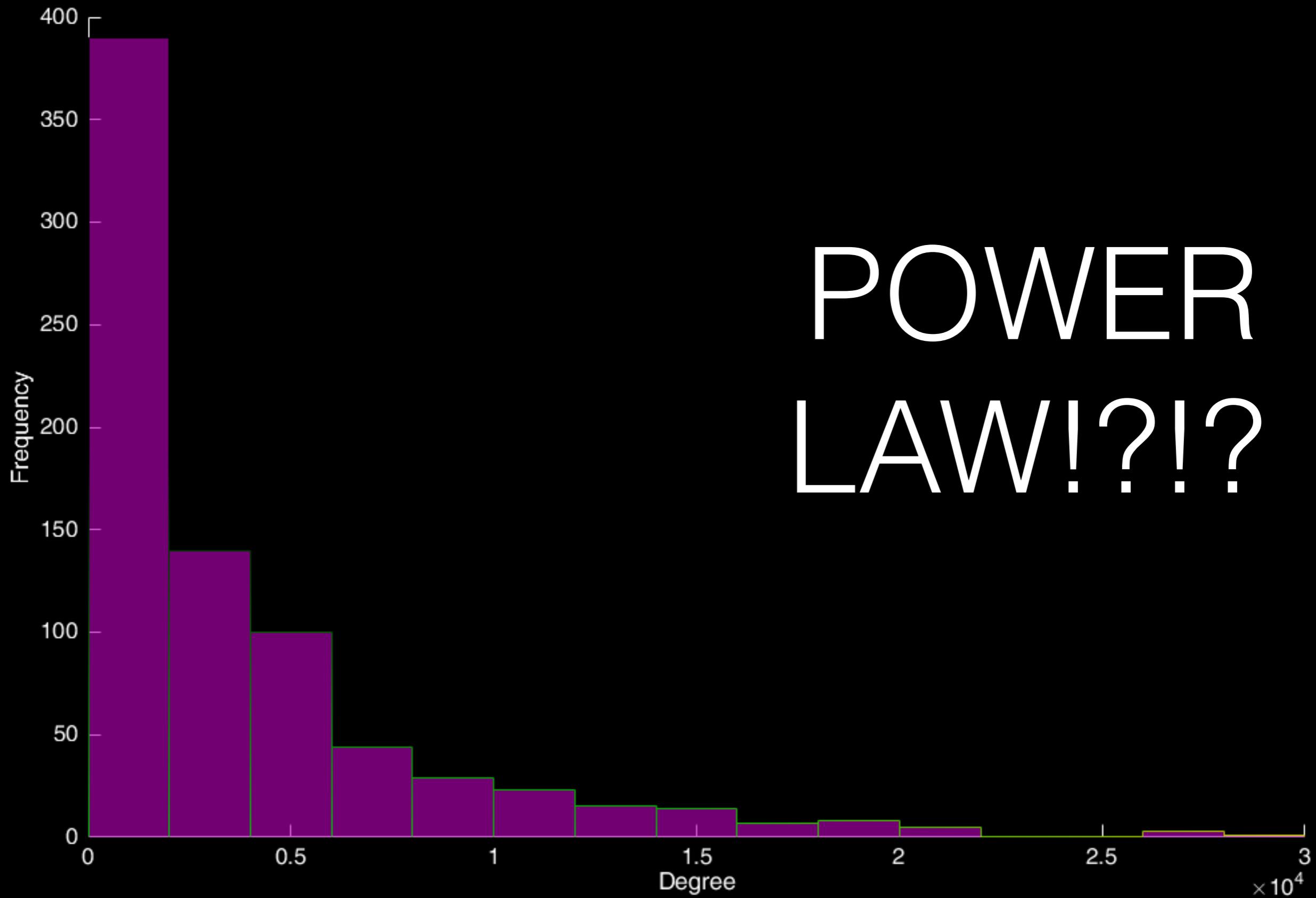
Edges: **122,311**

# Degree Distribution

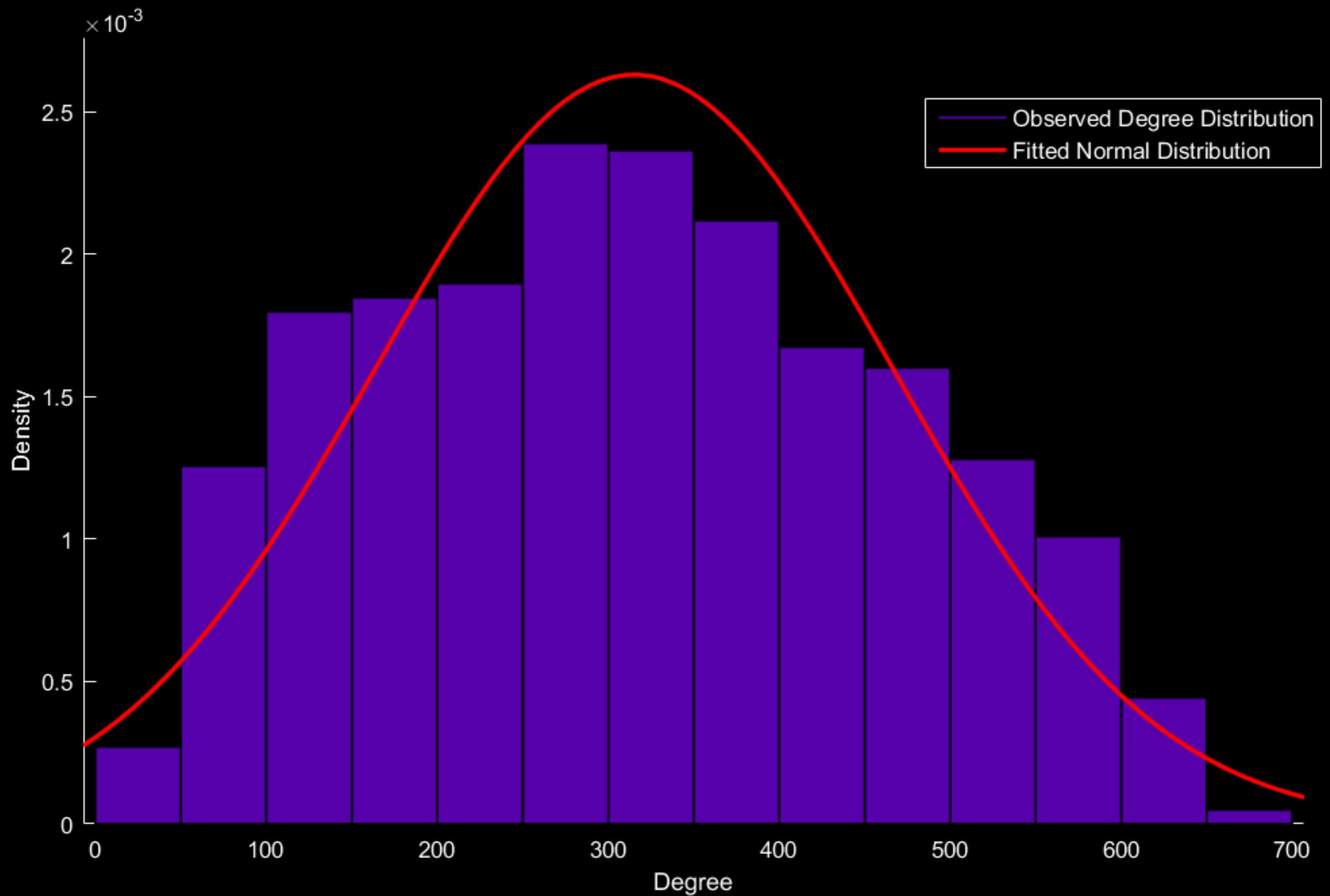
## Degree Distribution (Weighted)



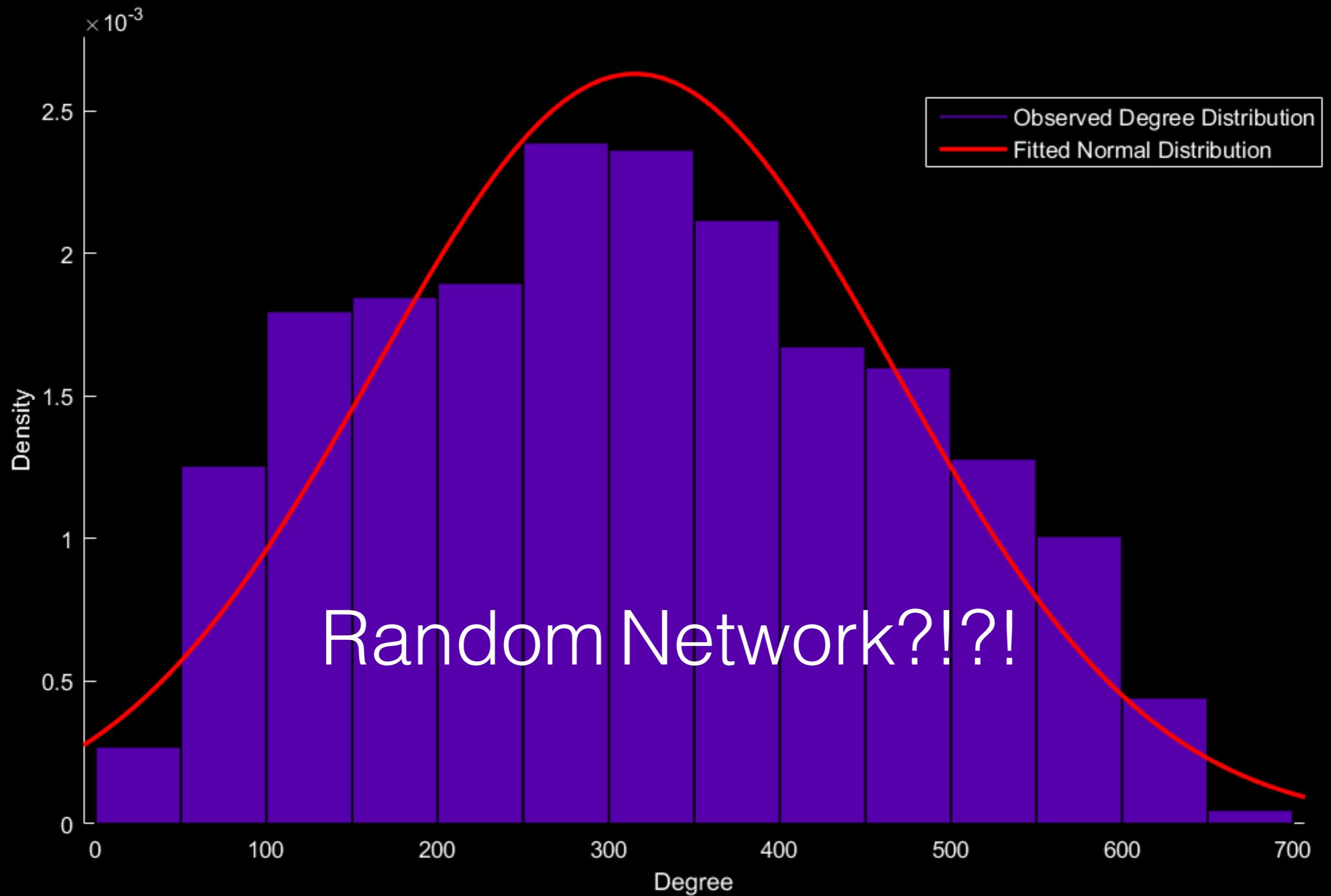
## Degree Distribution (Weighted)



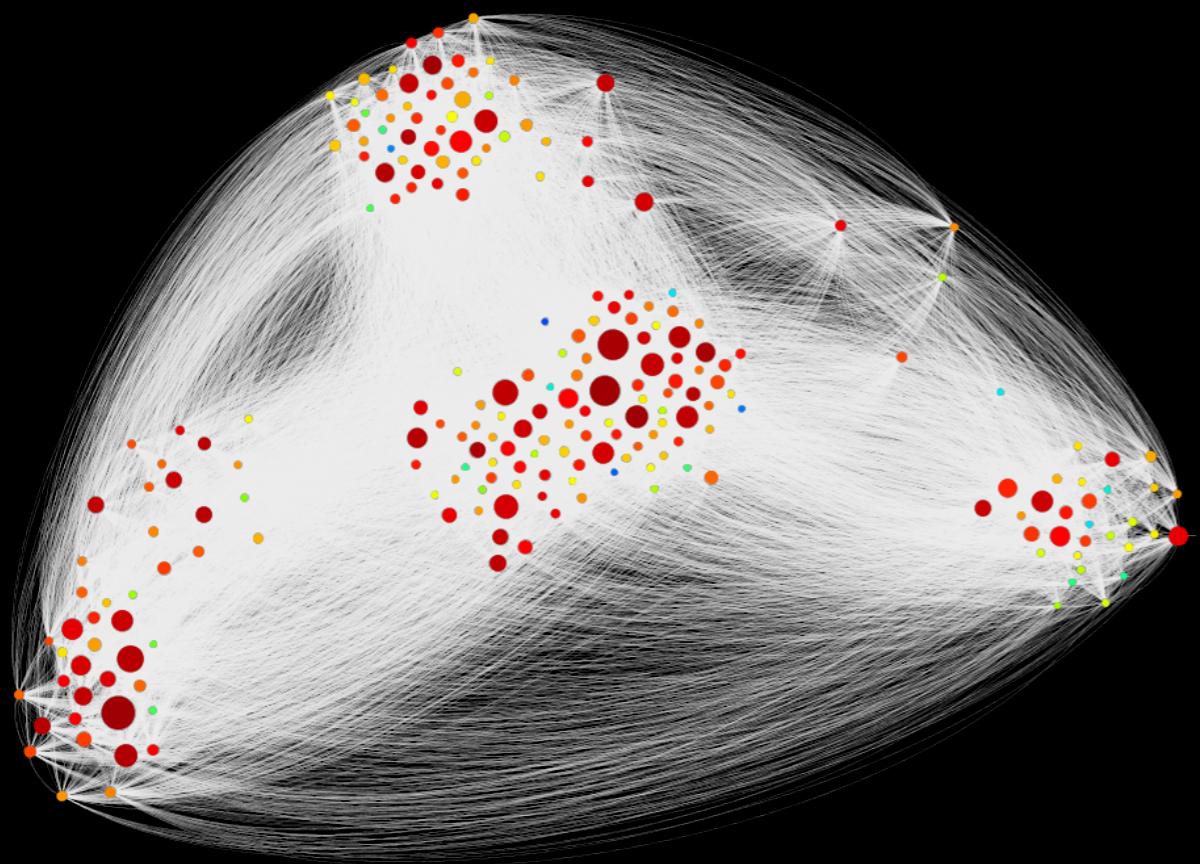
## Degree Distribution (Unweighted)



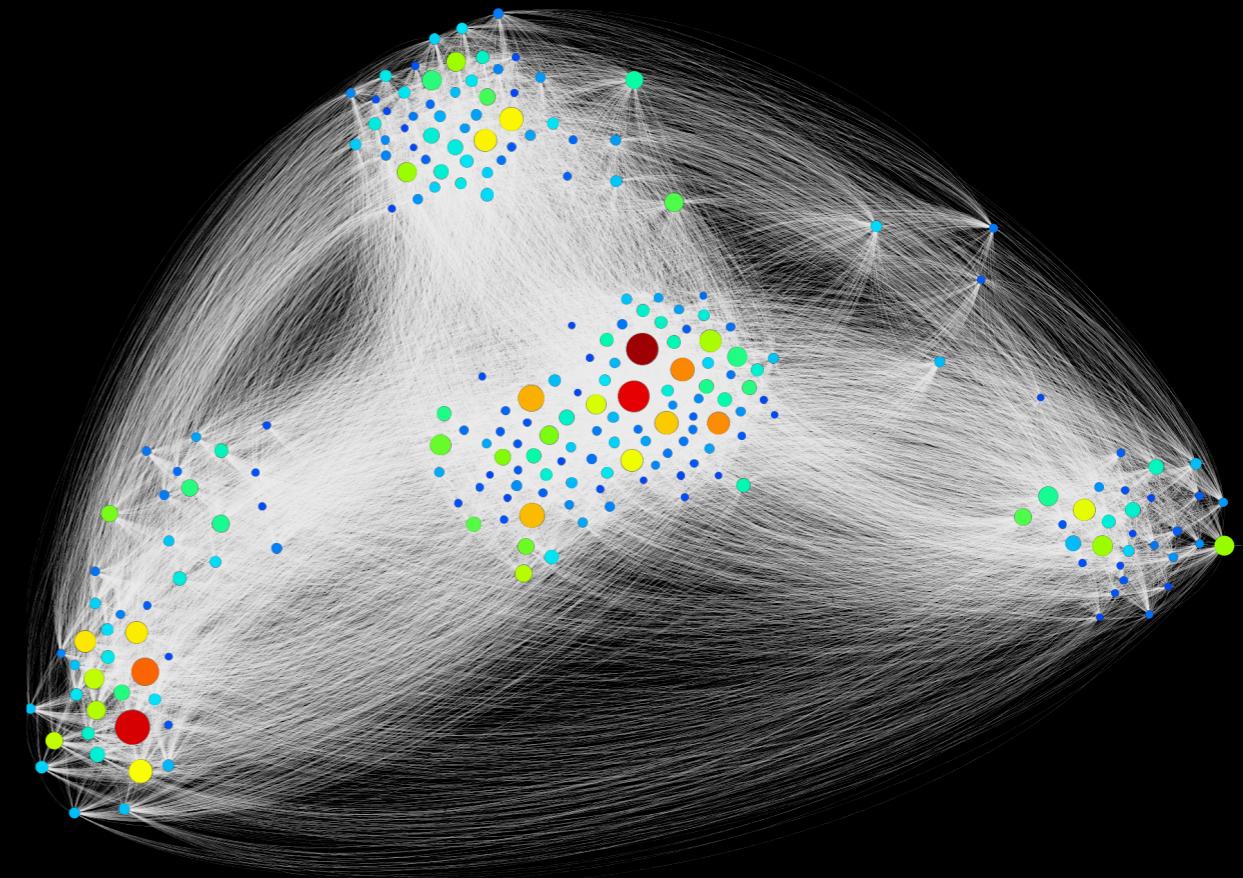
## Degree Distribution (Unweighted)



# Centrality Measures

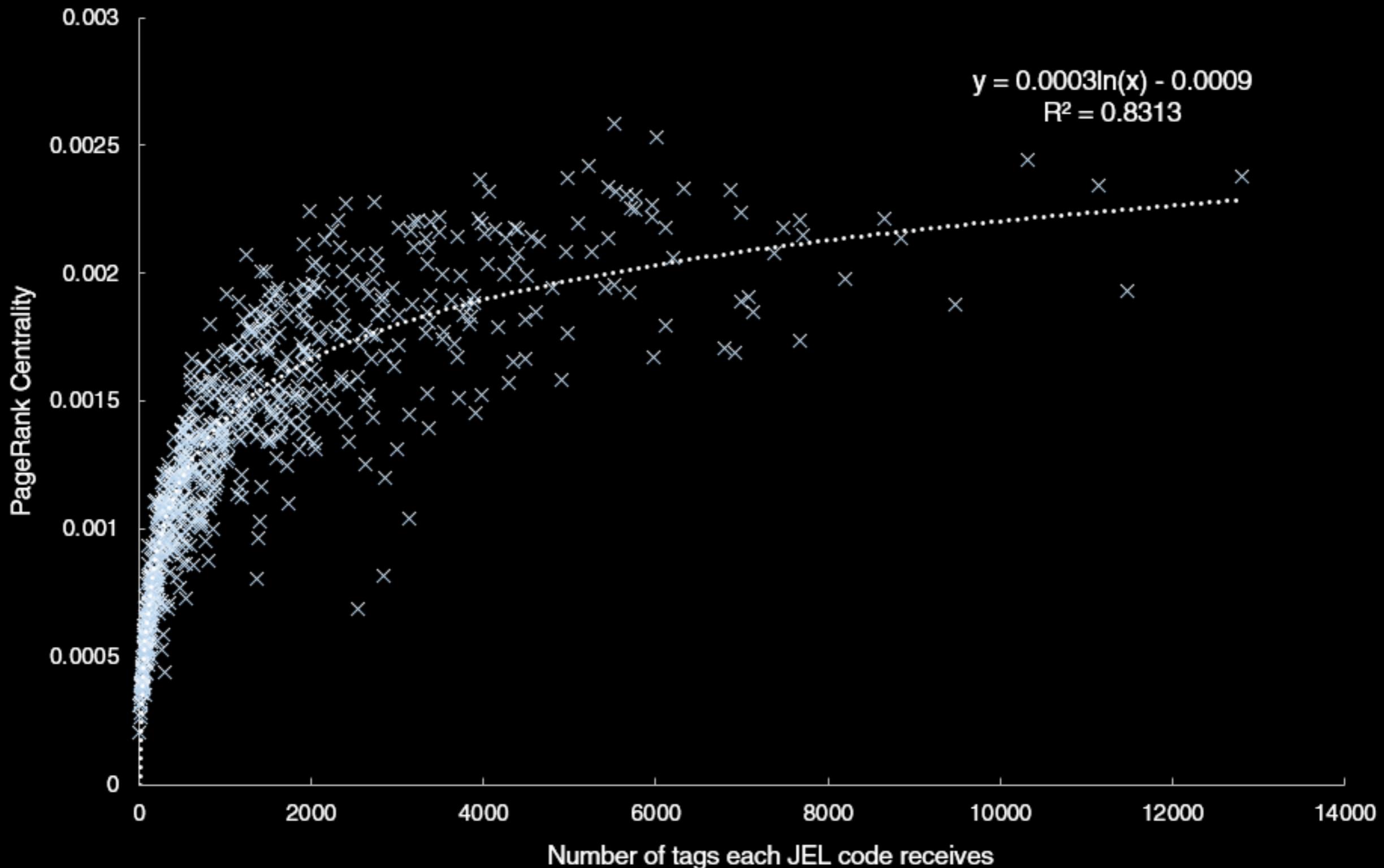


Eigenvector Centrality

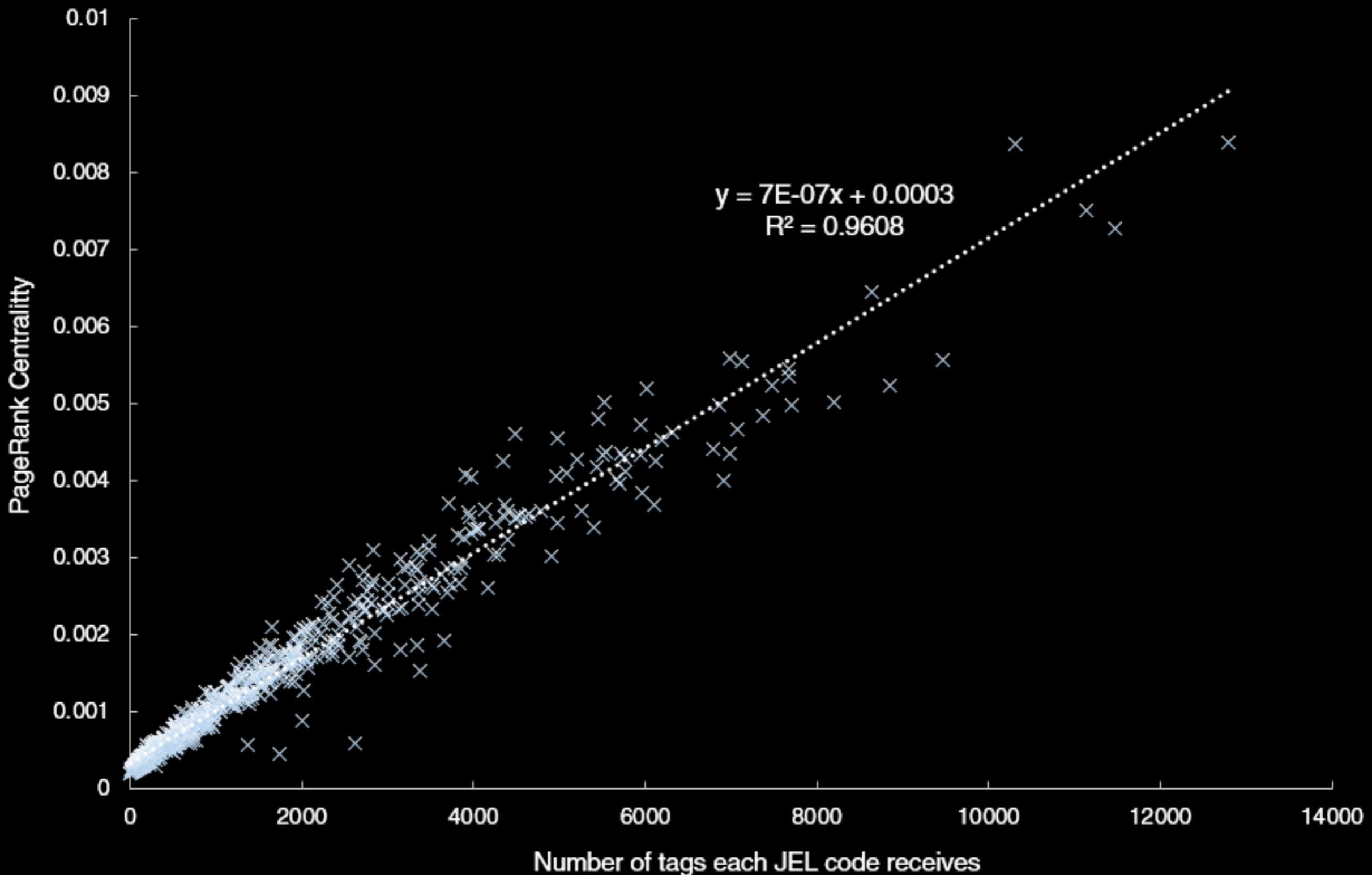


Pagerank Centrality

# (Unweighted) PageRank Centrality VS # of papers

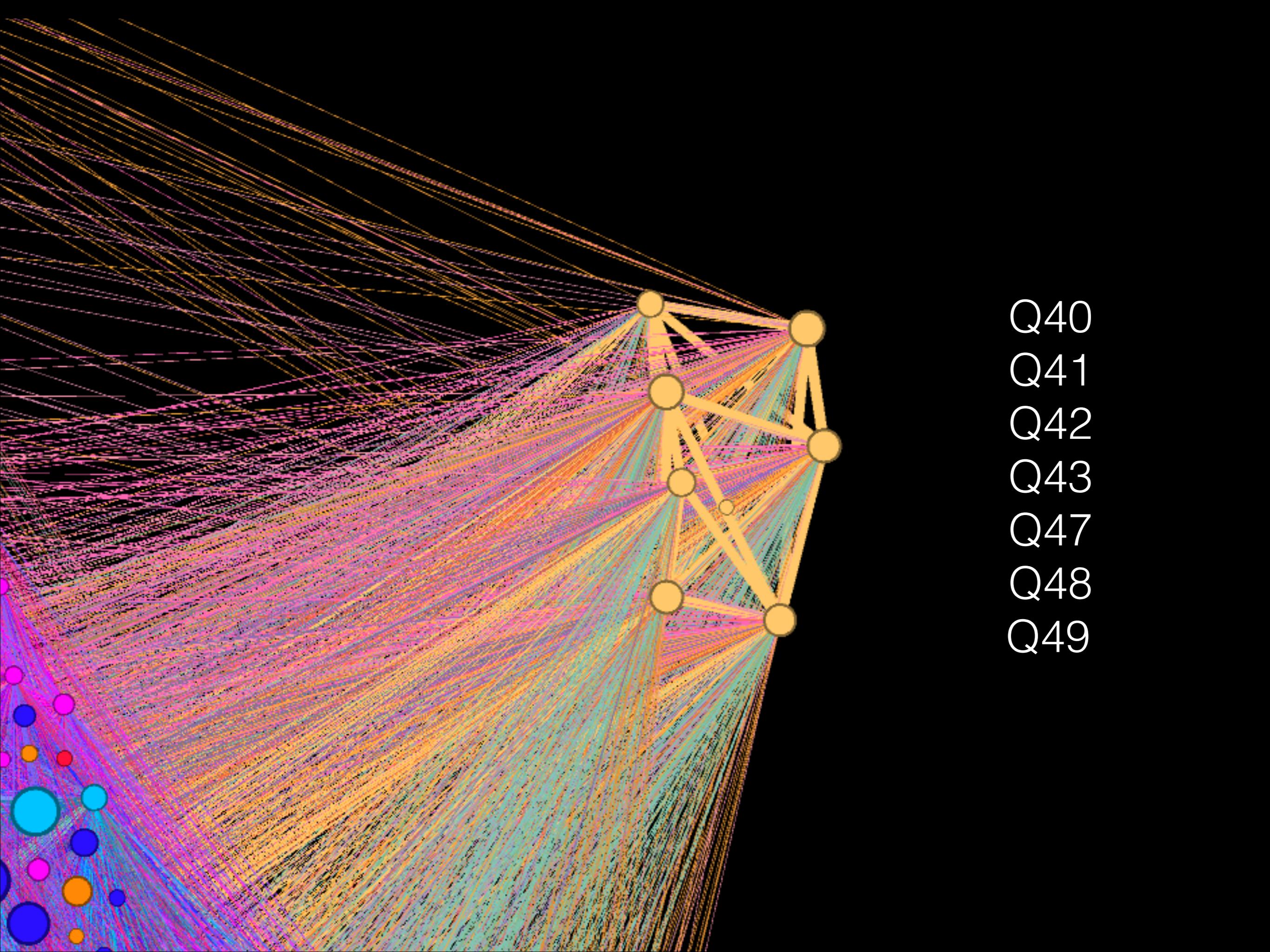


# (Weighted) PageRank Centrality VS # of papers



# Eigenvector Centrality Ranking

1. **Q48-** Q: Environmental and Ecological economics  
4: Energy  
8: Government Policy (Energy Economics)  
(0.392796)
  
2. **Q41-** Q: (same)  
4: (same)  
1: Demand and Supply  
(0.382637)
  
3. **Q42-** Q: (same)  
4: (same)  
2: Alternative Energy Sources  
(0.381114)



Q40  
Q41  
Q42  
Q43  
Q47  
Q48  
Q49

# Pagerank Centrality Ranking

1. **G21**- G: Financial Economics

2: Financial Institutions & Services

1: Banks; Mortgages  
(0.008389)

2. **J24**- J: Labor & Demographic Economics

2: Human Capital, Skills, Occupational Choice,  
Labor Productivity

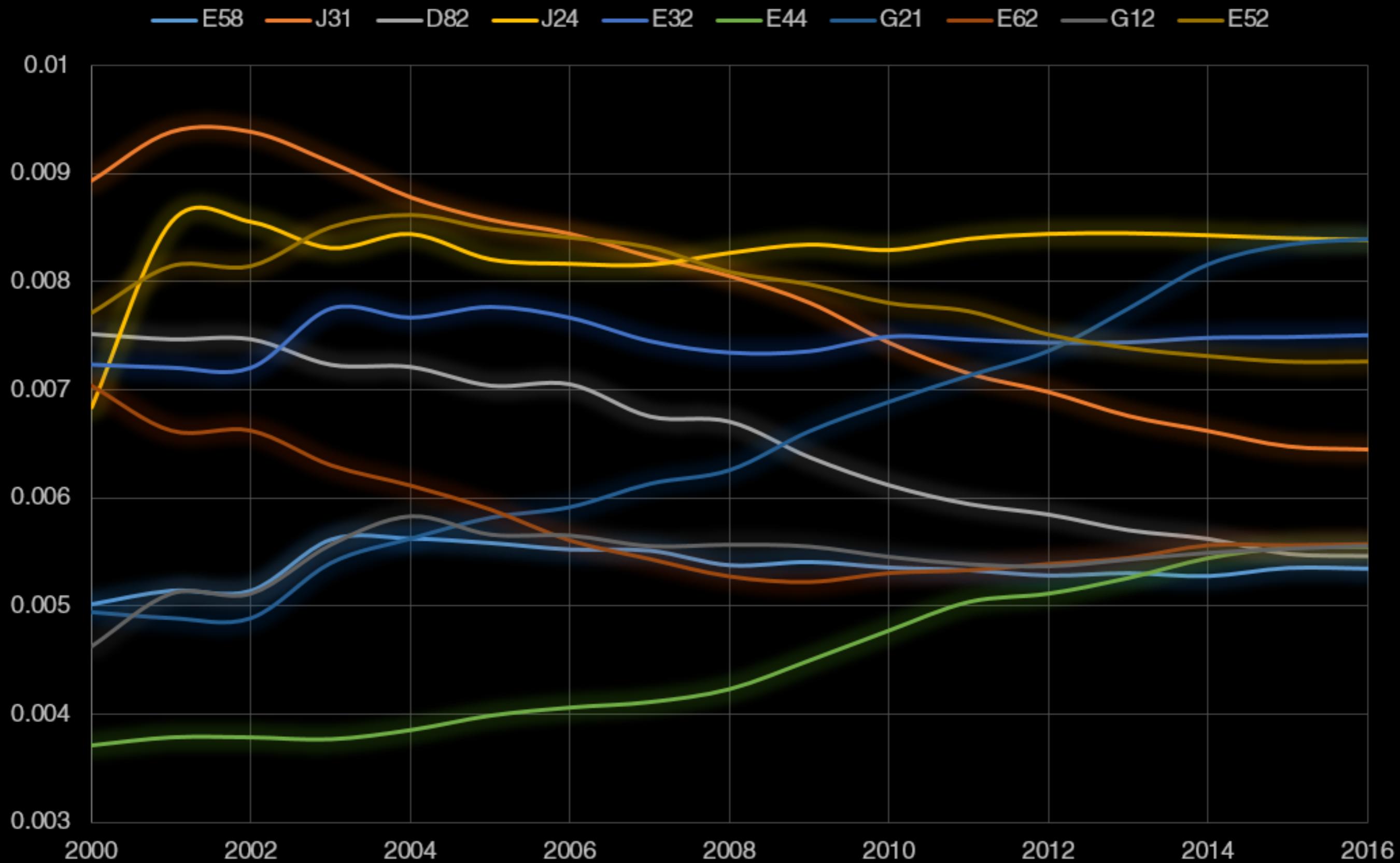
1: Human Capital, Skills, Labor Productivity  
(0.008383)

3. **E32**- E: Macroeconomics

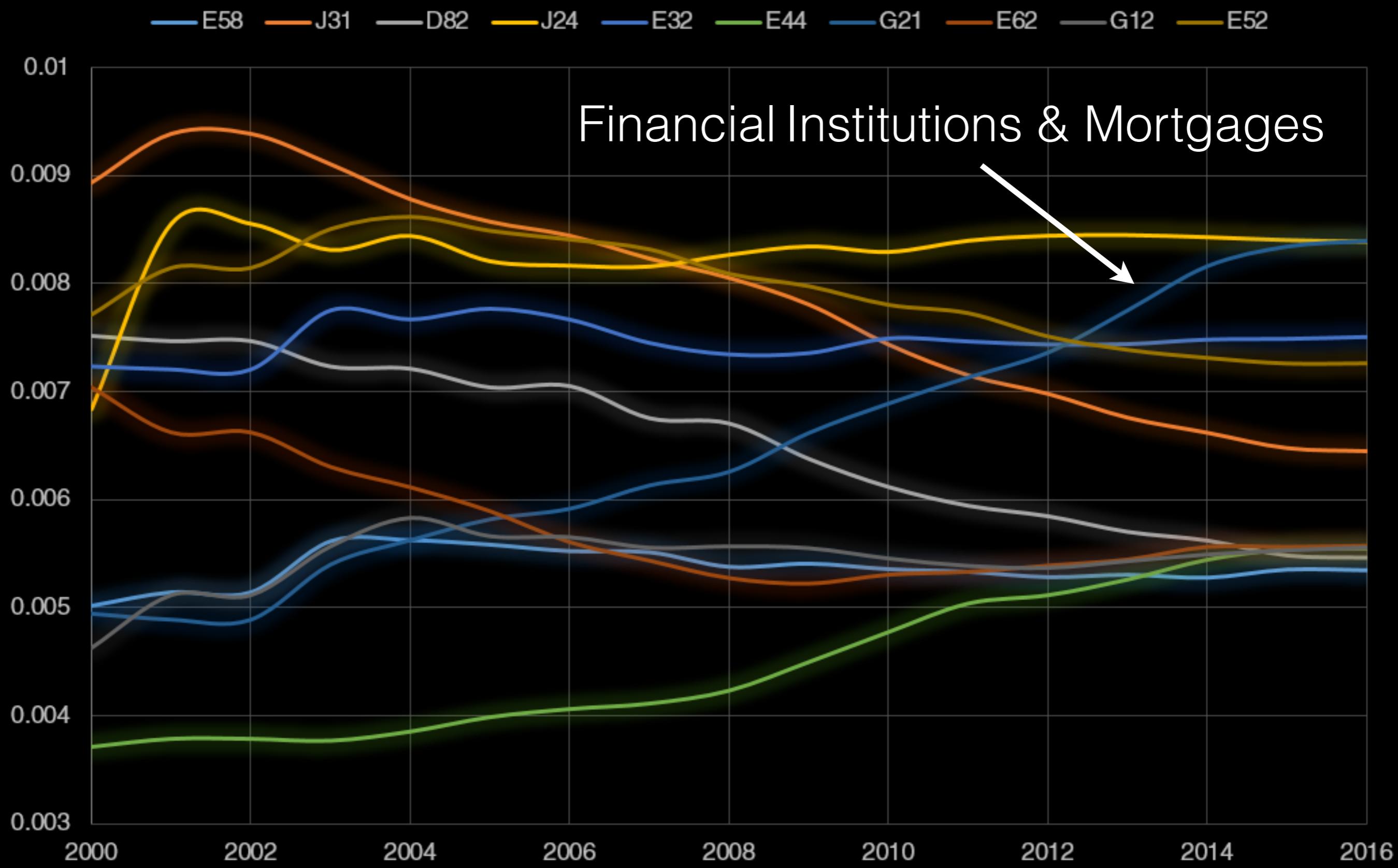
3: Prices, Business Fluctuations, and Cycles

2: Business Fluctuations; Cycles  
(0.007503)

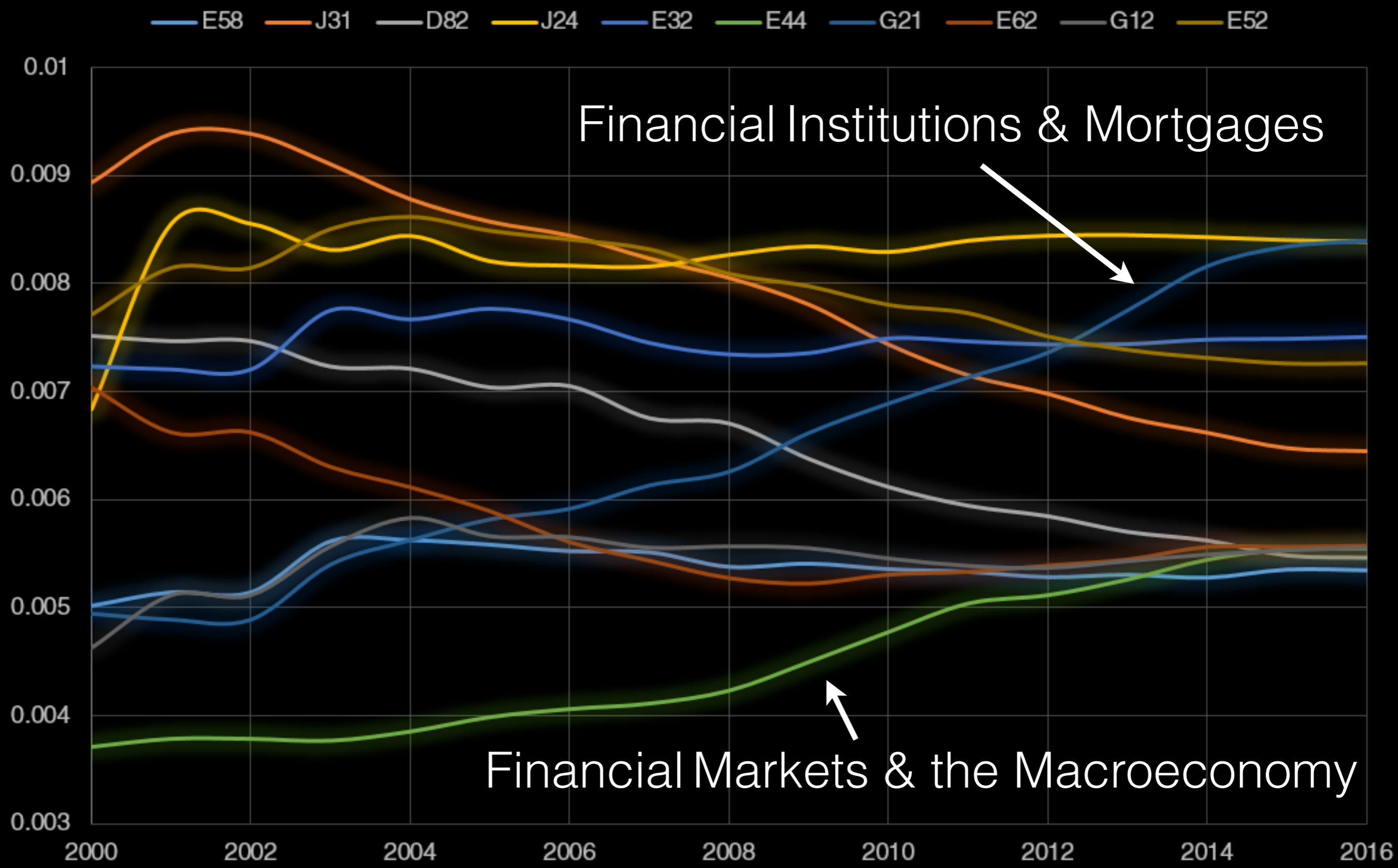
# PageRank Centrality Over the Years



# PageRank Centrality Over the Years



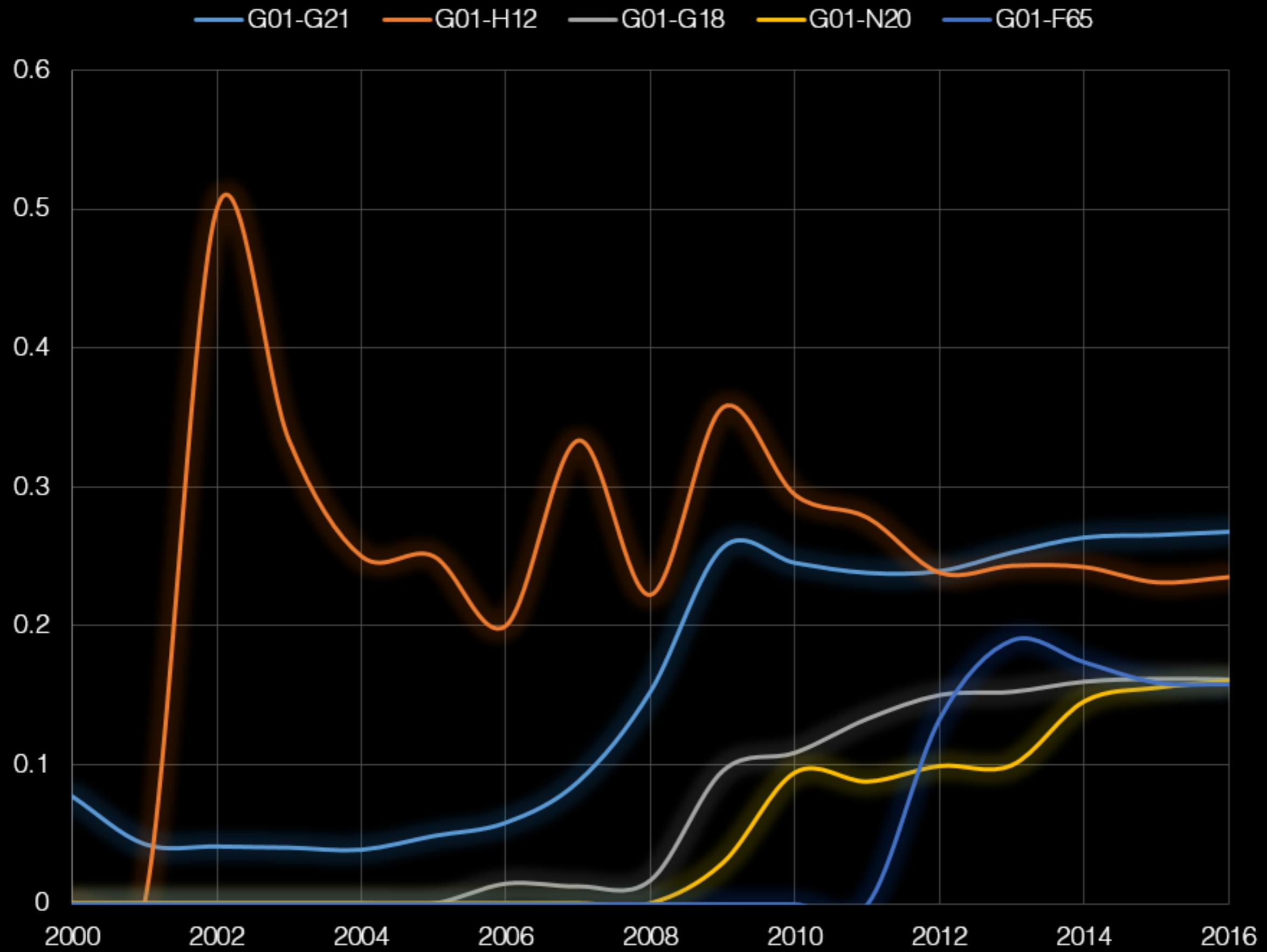
# PageRank Centrality Over the Years



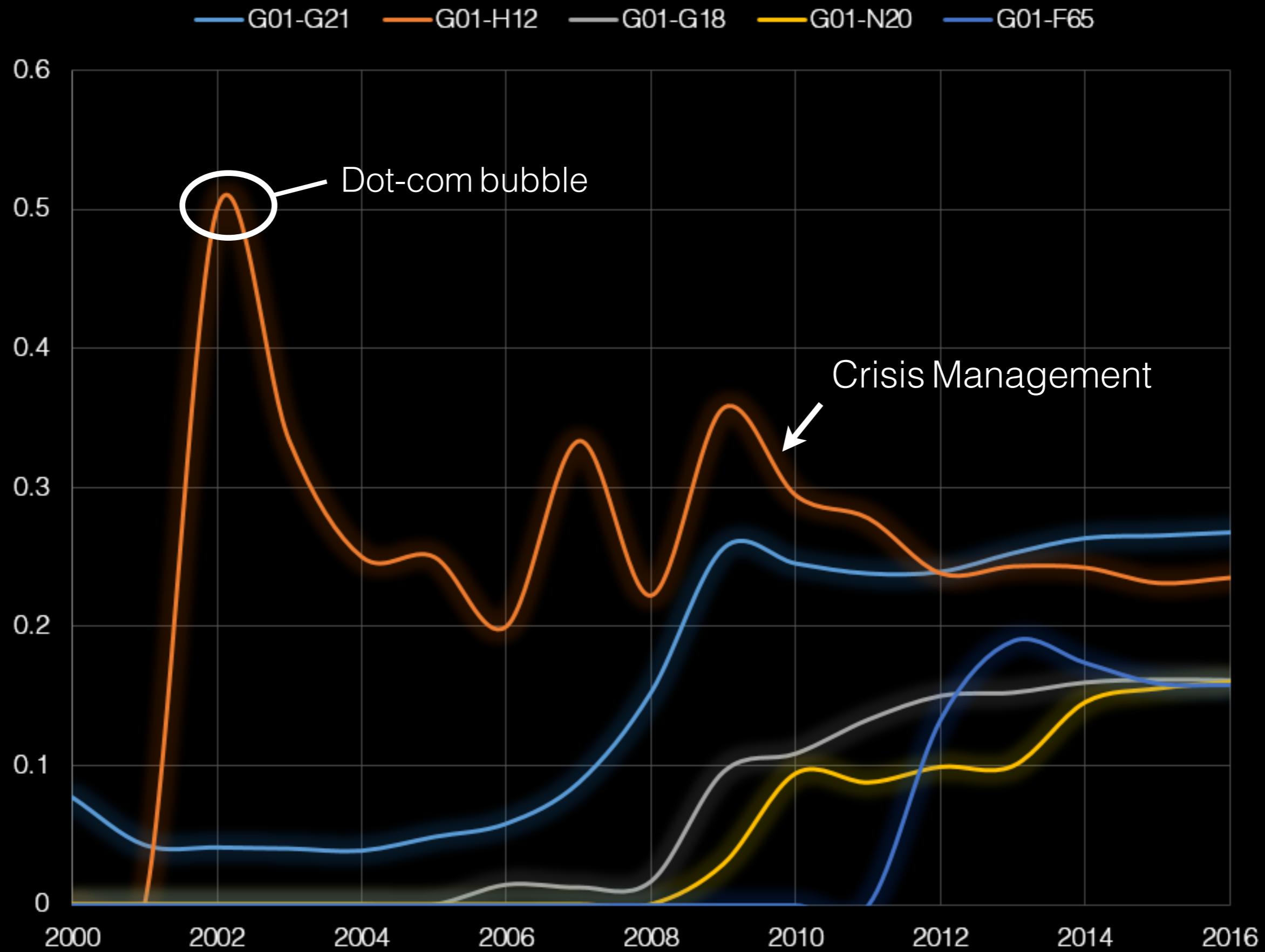
# Edges Over the Years

$$\text{Normalised edge weight} = \frac{W_{a,b}}{\min\{N_a, N_b\}}$$

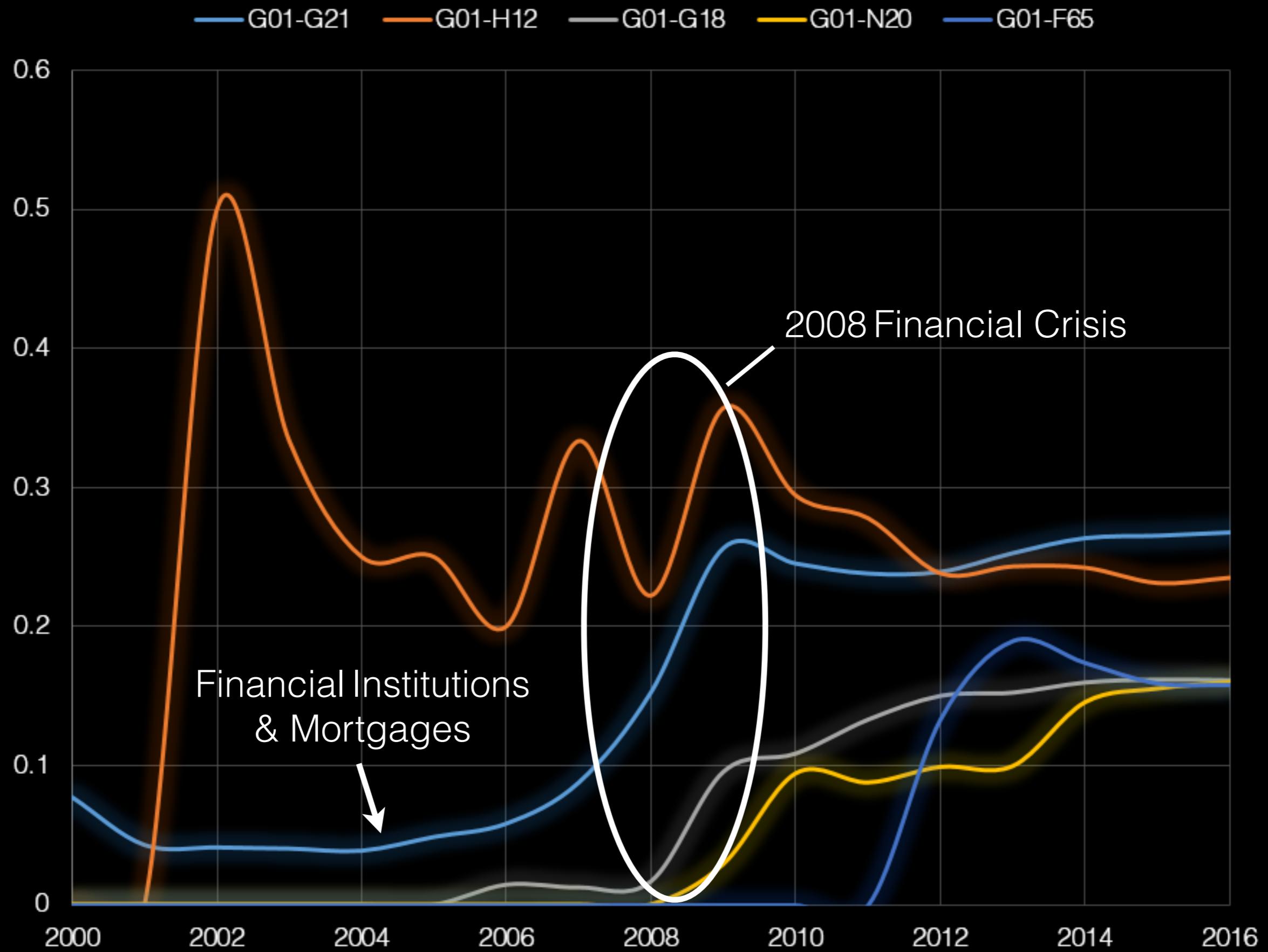
# G01 - Financial Crises



# G01 - Financial Crises



# G01 - Financial Crises



Thank You