



Federal Reserve
Bank of Dallas

Turning Vision into Action: All Systems Go!

International Symposium for Personal
and Commercial Spaceflight (ISPCS)
Las Cruces, NM

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AVP and Senior Economist
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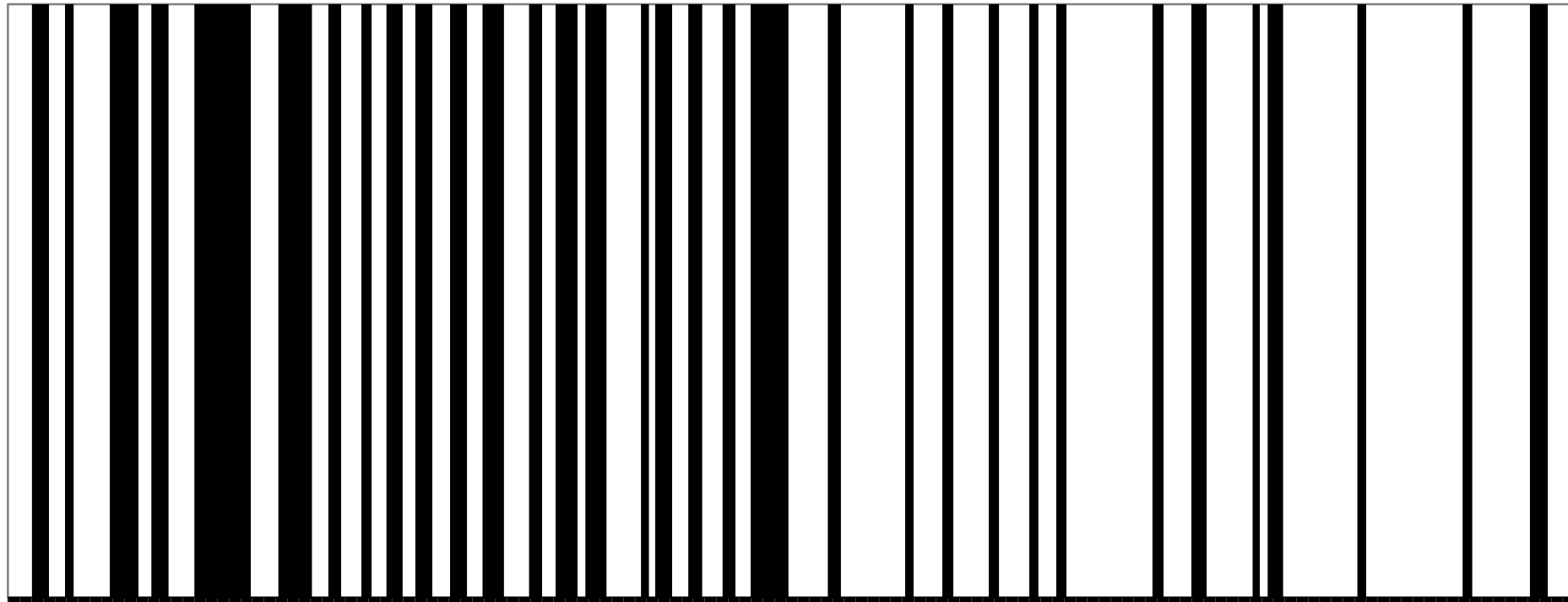
Launch Checklist

- Gravitas**
- Opportunitus**
- Porposer**

Launch Checklist

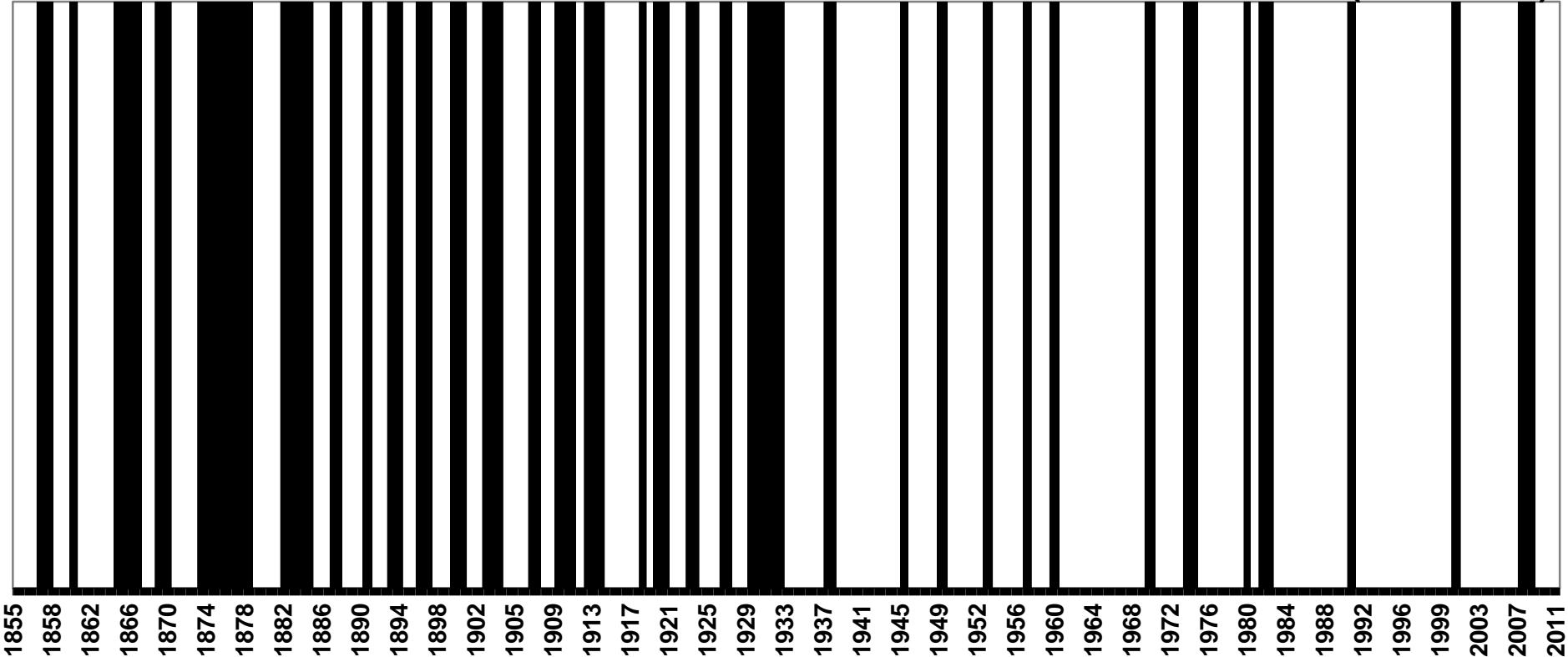
Gravitas

What does this mean?

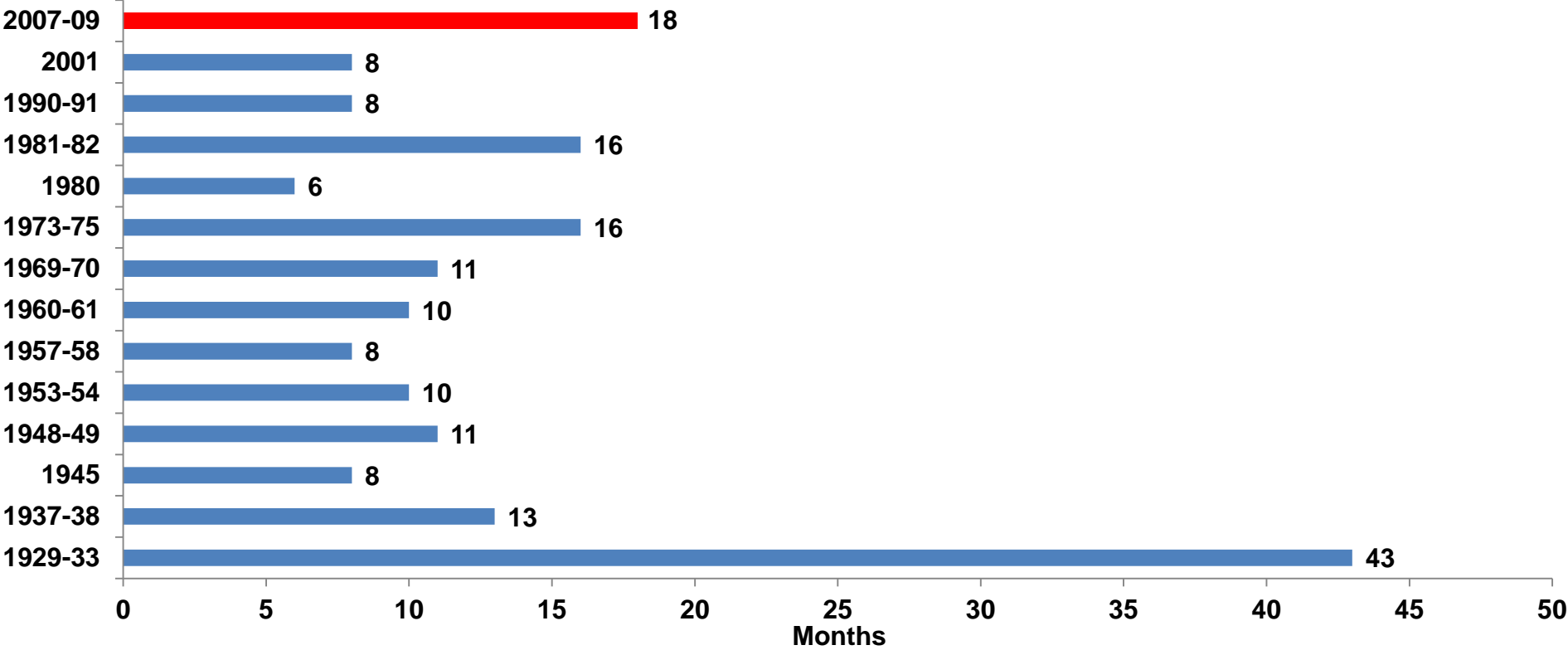


The U.S. Business Cycle (1855 – 2017)

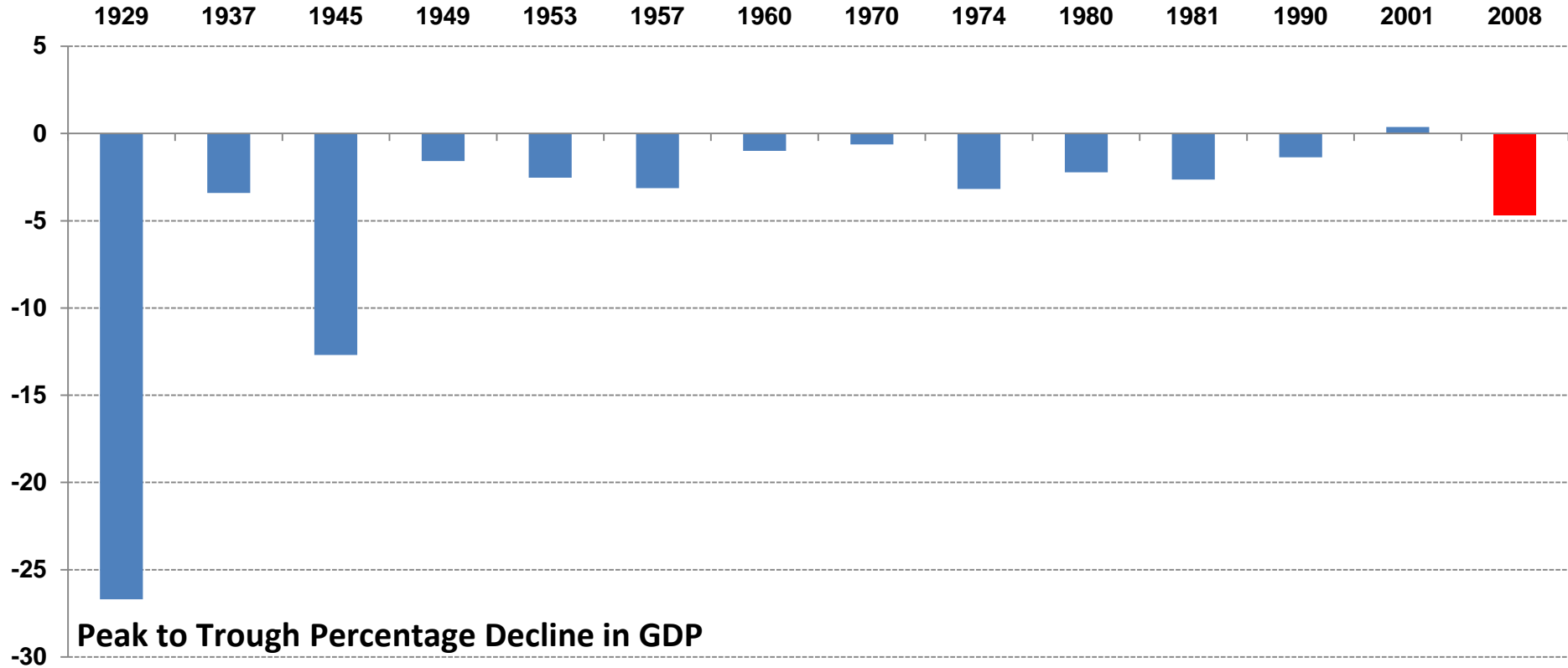
Black = Months in Contraction (Recession)



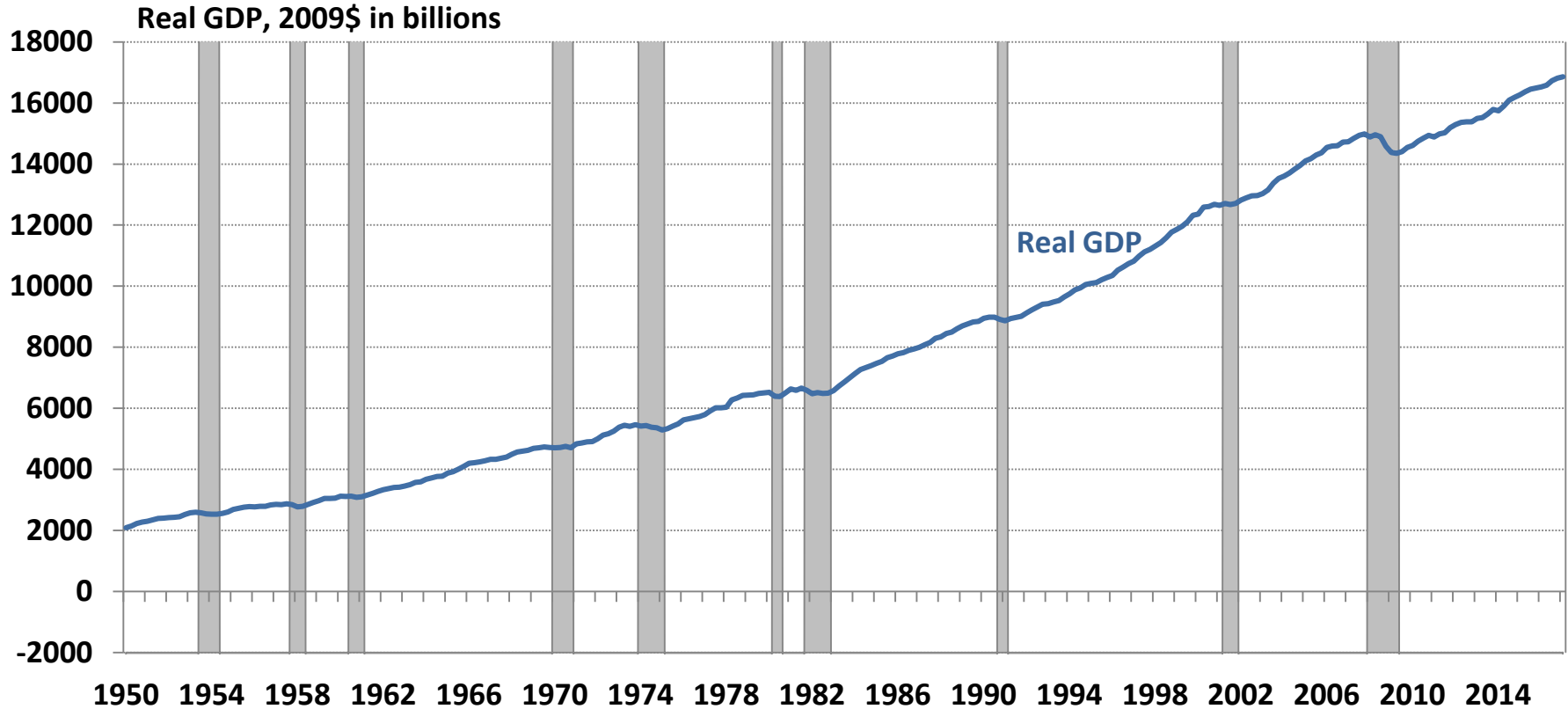
The Great Recession's Length



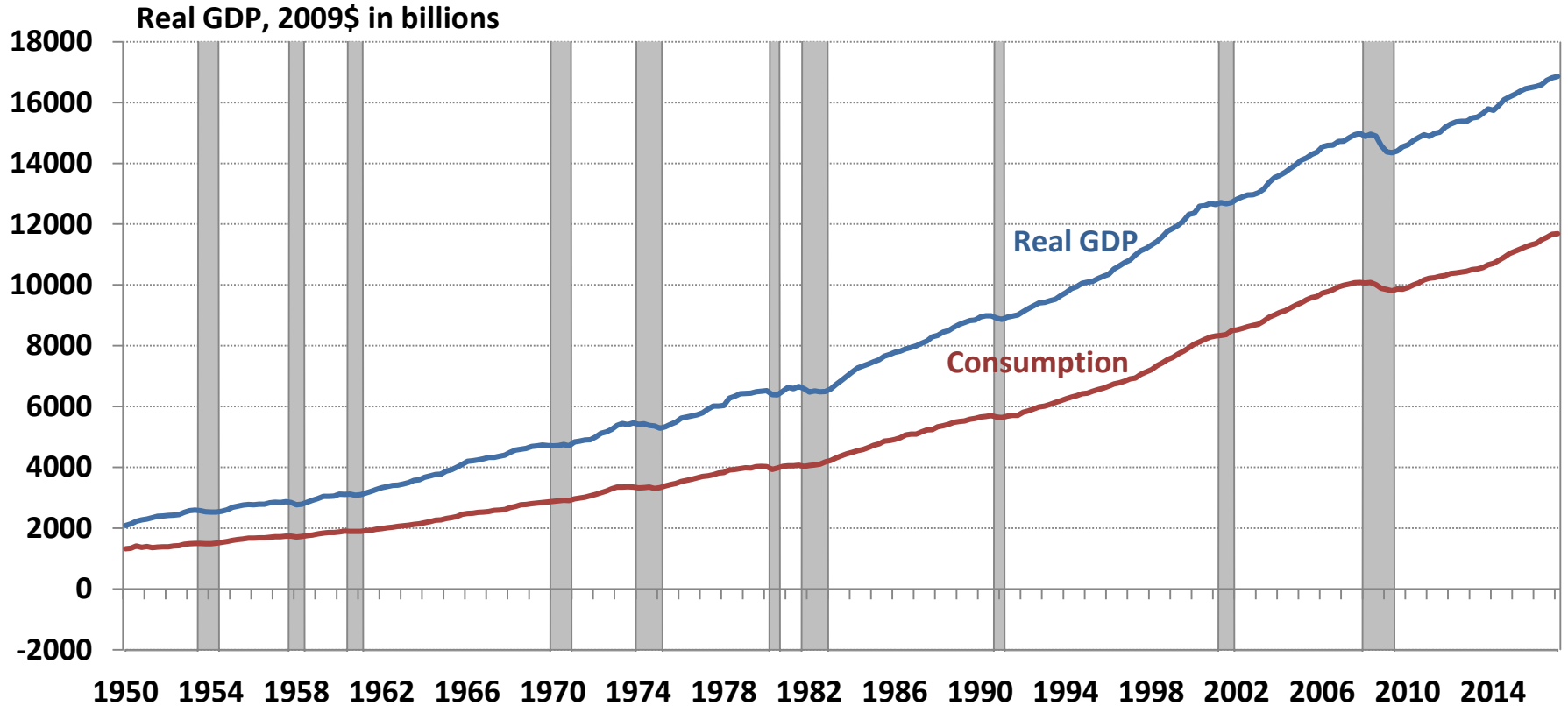
The Great Recession's Depth



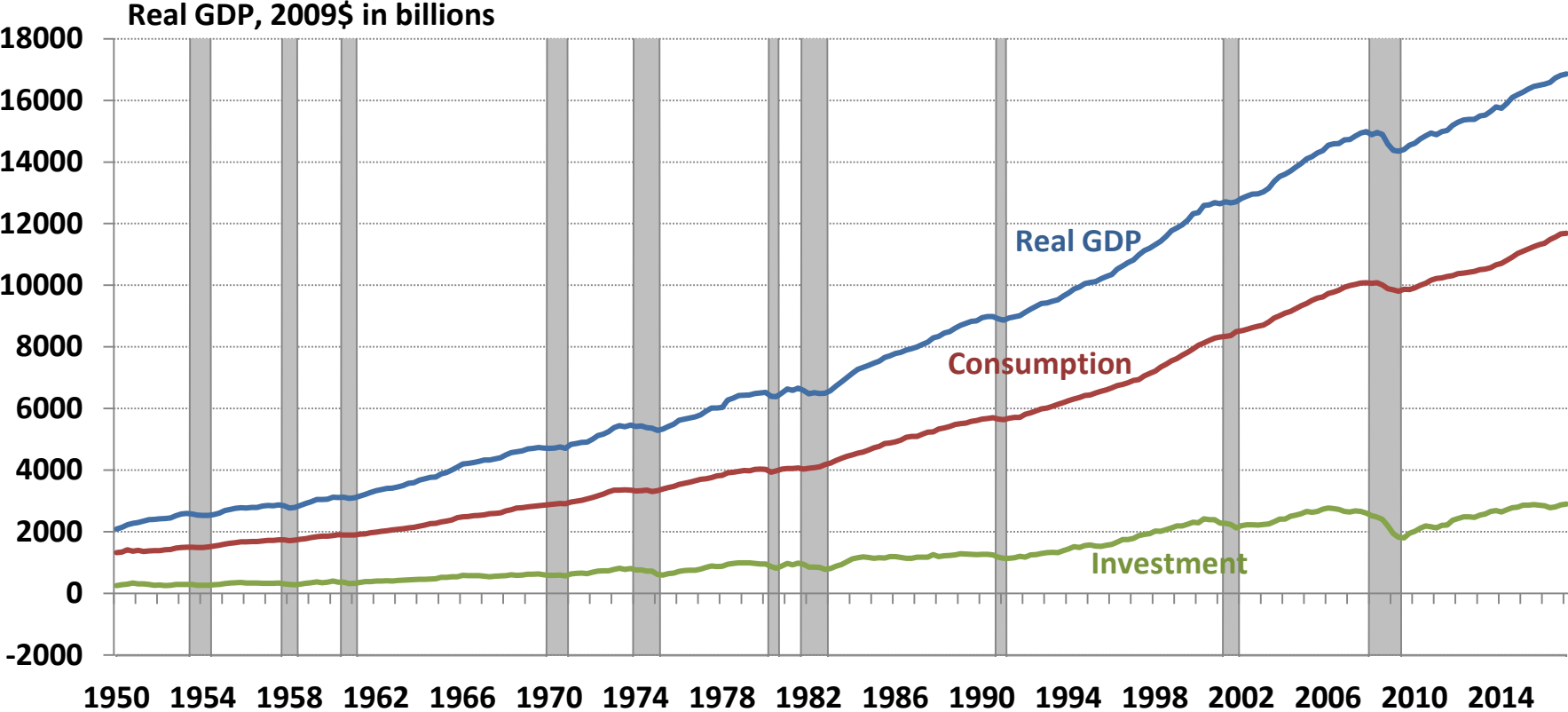
$$\text{GDP} = C + I + G + (X - M)$$



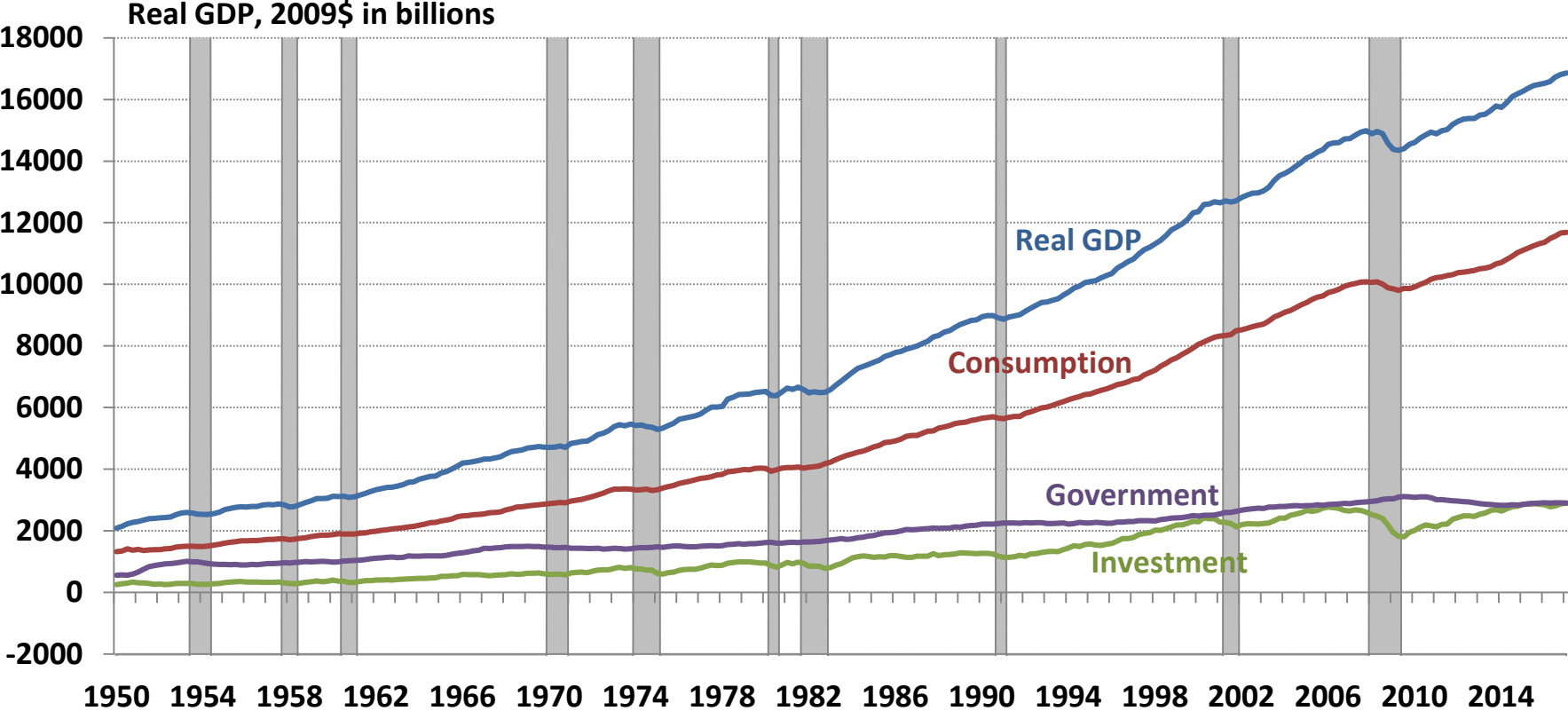
$$\text{GDP} = \text{C} + \text{I} + \text{G} + (\text{X} - \text{M})$$



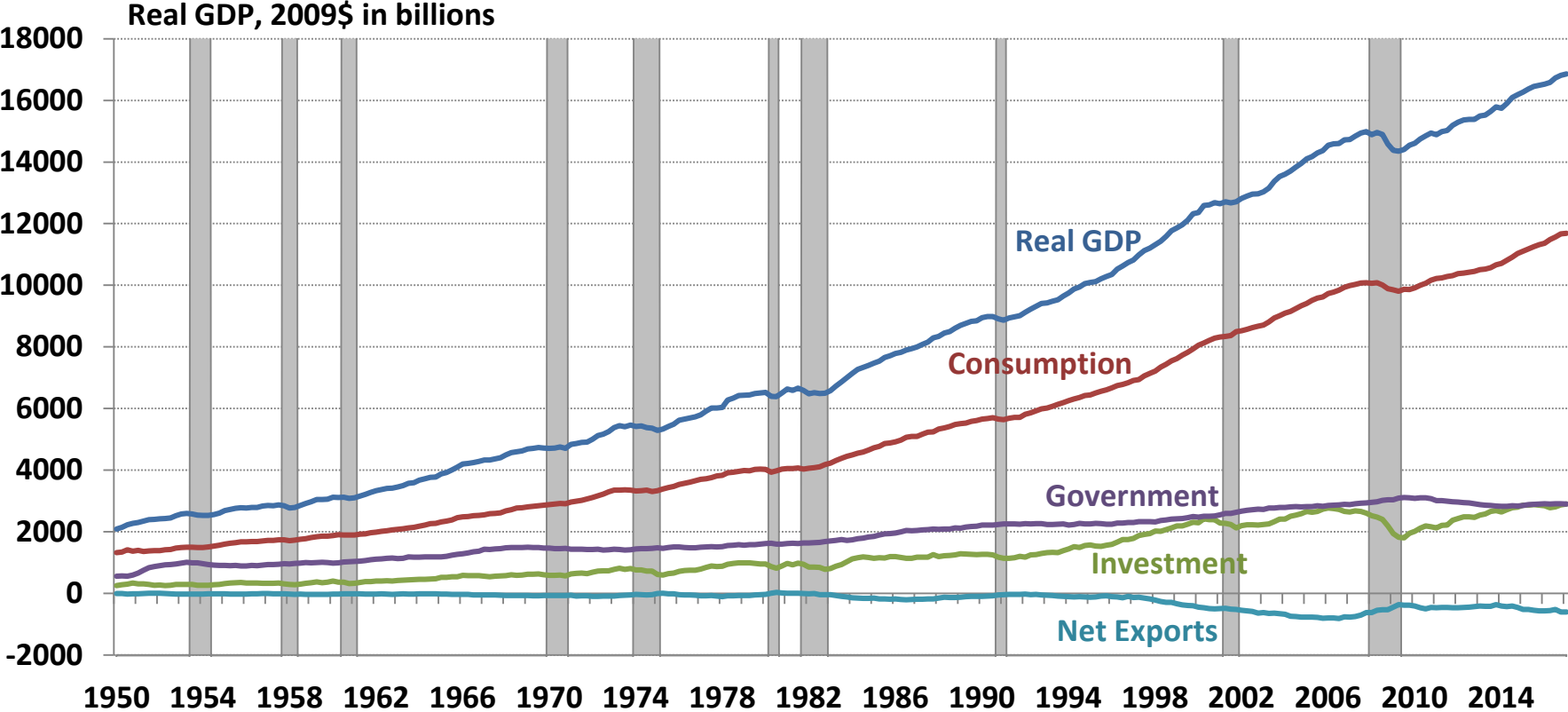
$GDP = C + I + G + (X - M)$



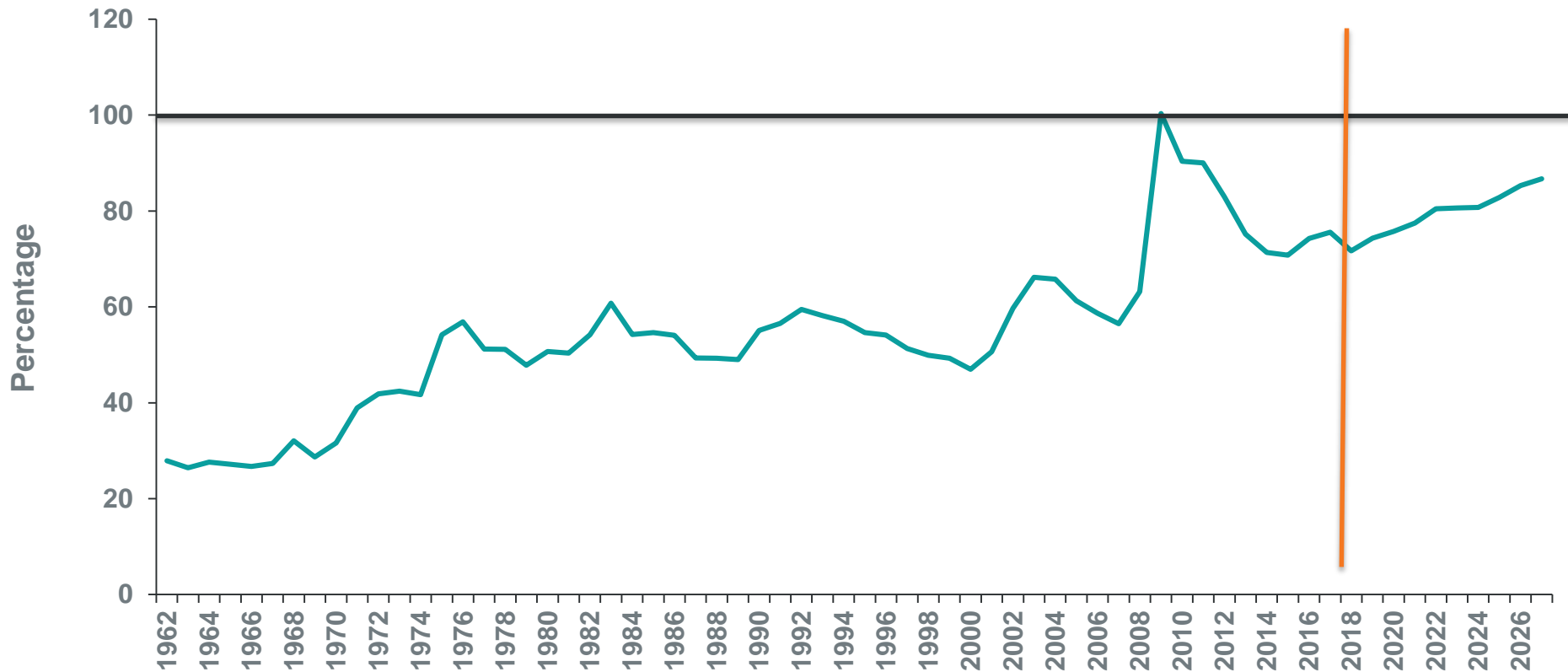
$GDP = C + I + G + (X - M)$



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Mandatory Spending as Percent of Government Revenue



The Fed's Dual Mandate

The Fed's Dual Mandate

Price Stability

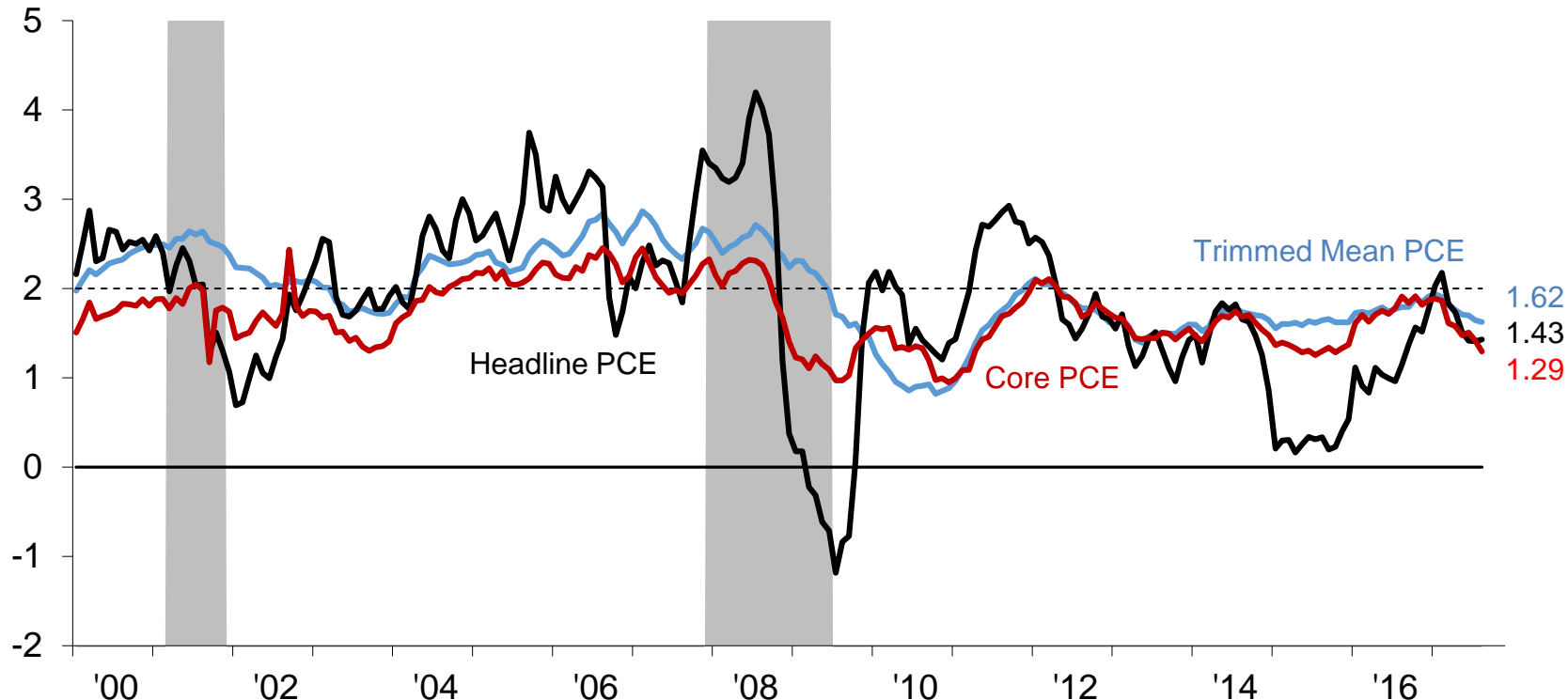
The Fed's Dual Mandate

Price Stability

Full Employment

Core and Trimmed Mean Inflation Heading for 2 Percent

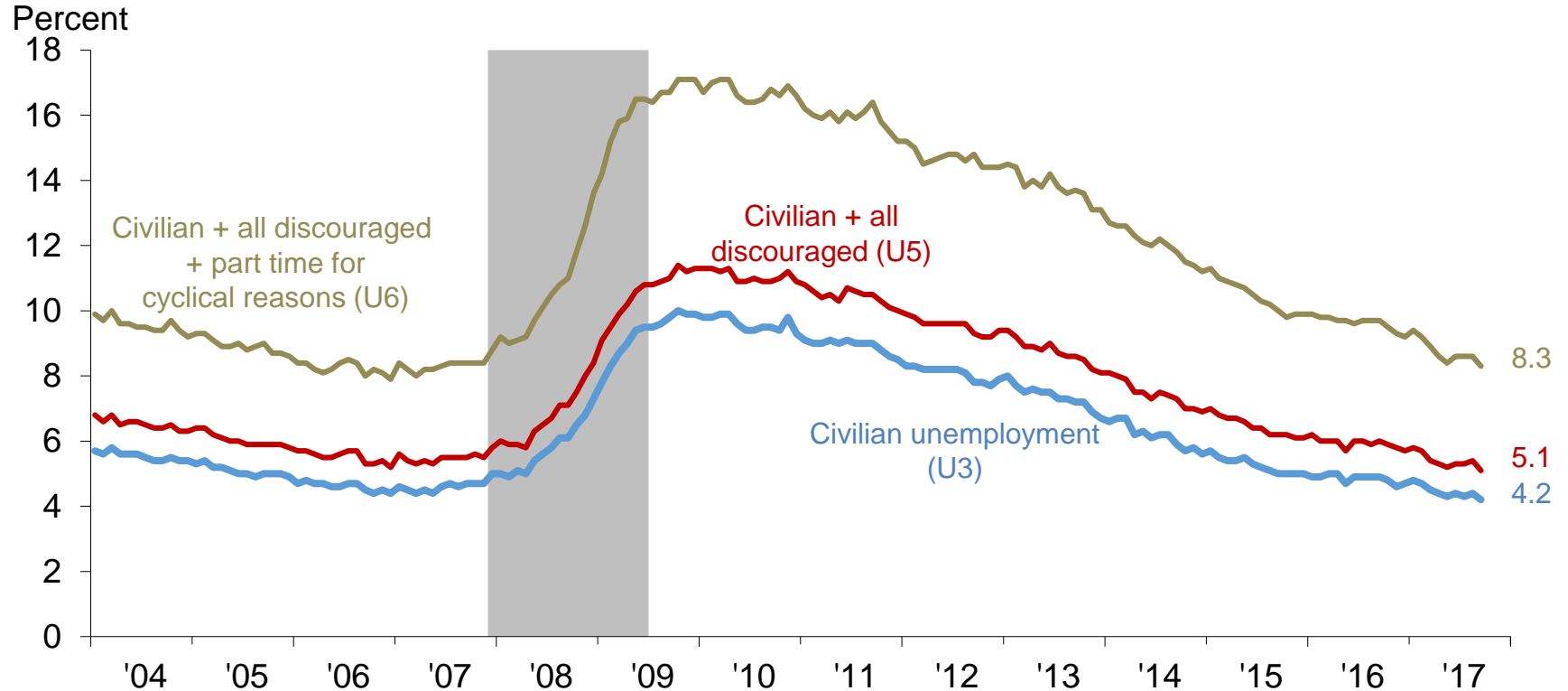
Percent change, year/year



NOTES: Shaded areas indicate recessions. The dotted line represents the Federal Reserve's inflation target.

SOURCES: Bureau of Labor Statistics; Bureau of Economic Analysis; Federal Reserve Bank of Dallas.

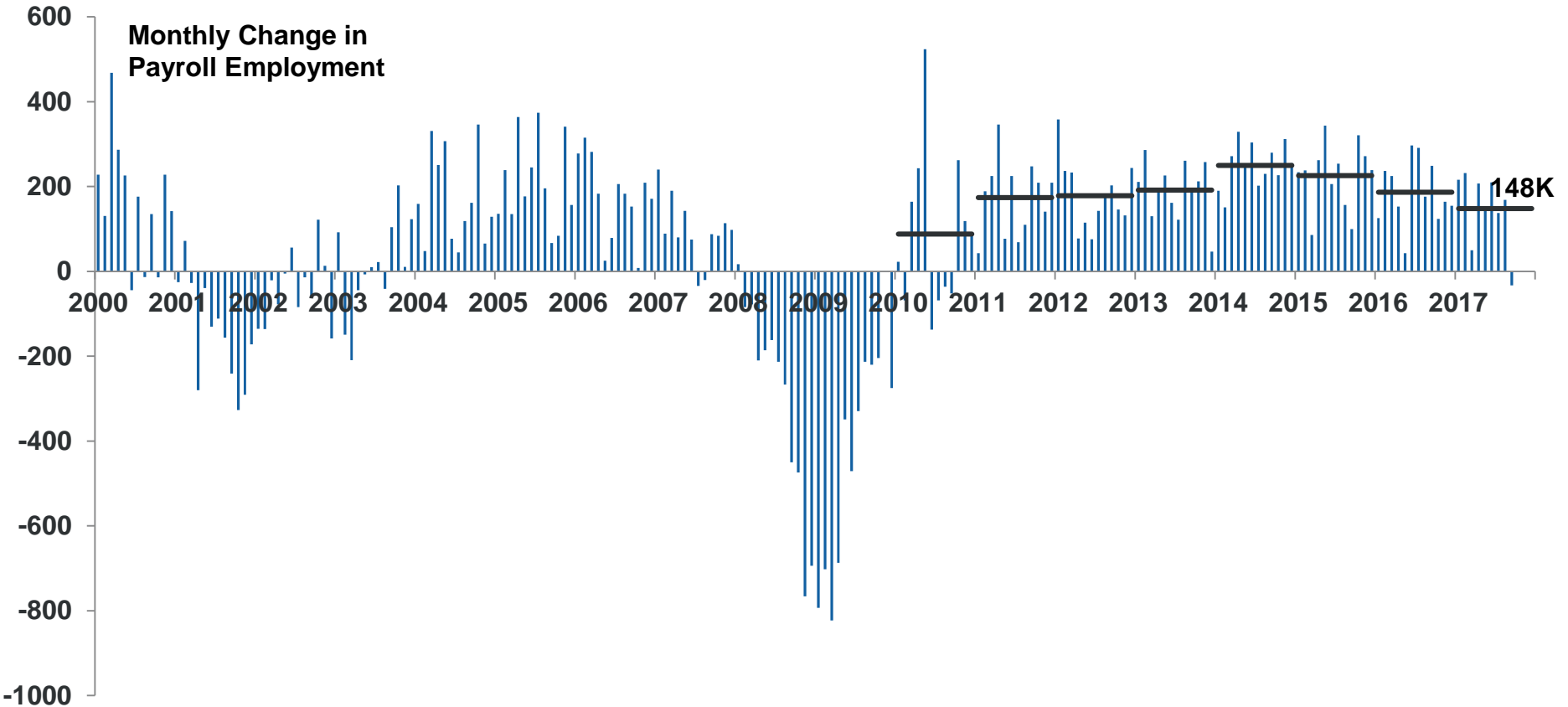
Labor Markets Continue to Improve



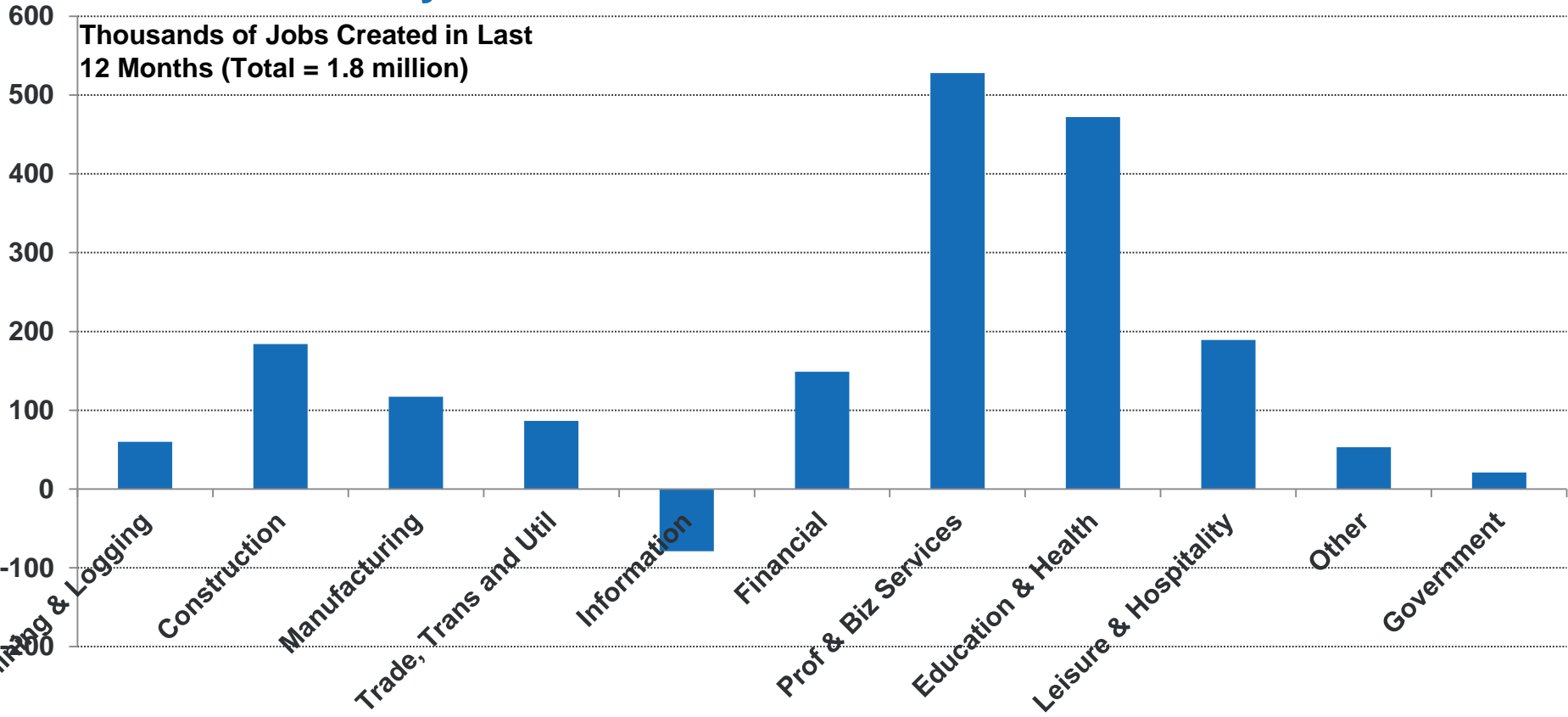
NOTE: The shaded area indicates recession.

SOURCES: Bureau of Labor Statistics; National Bureau of Economic Research.

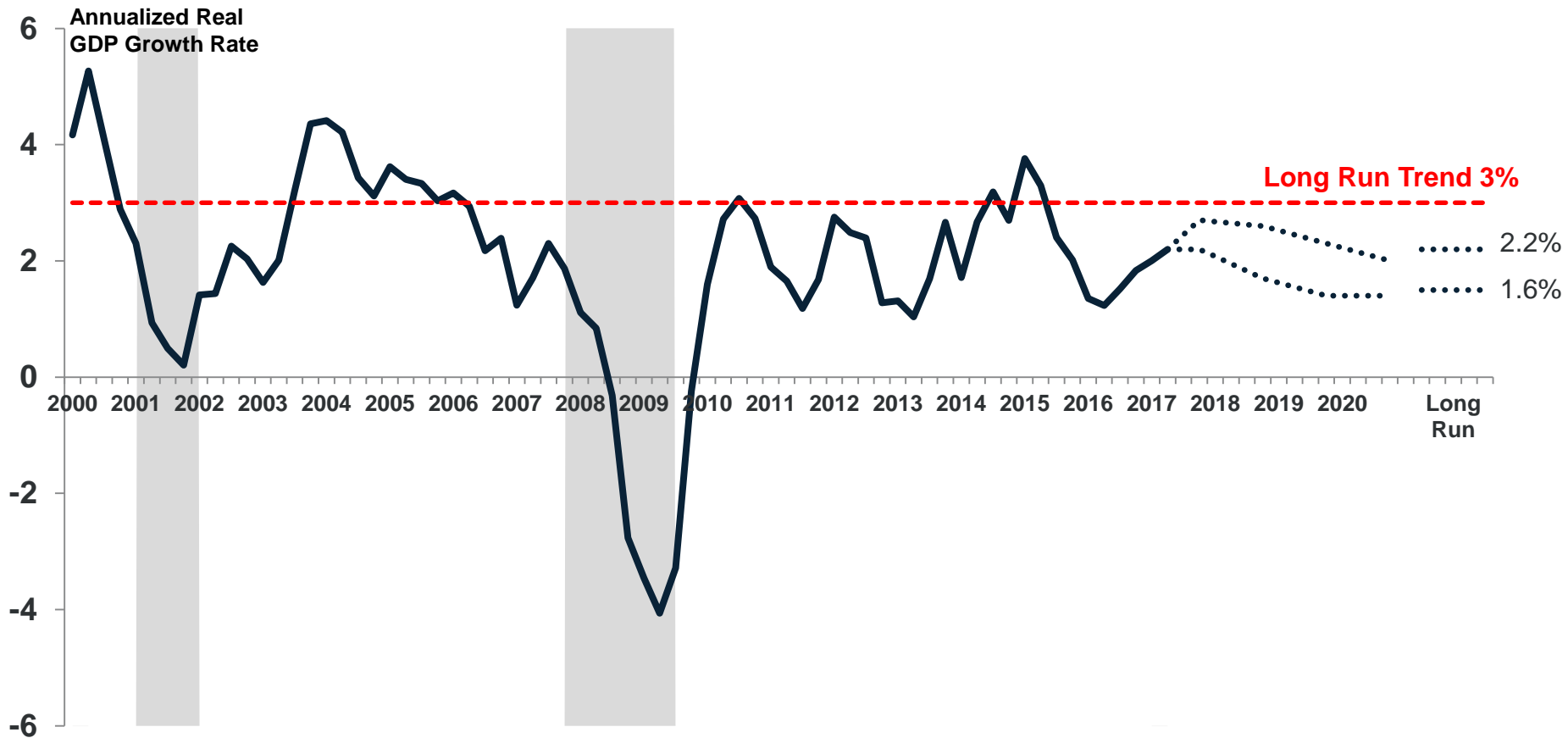
Labor Markets Continue to Improve



U.S. Job Growth By Sector



Economic Growth Has Been Weaker Than Historically



Slower GDP Growth: Some Possible Explanations

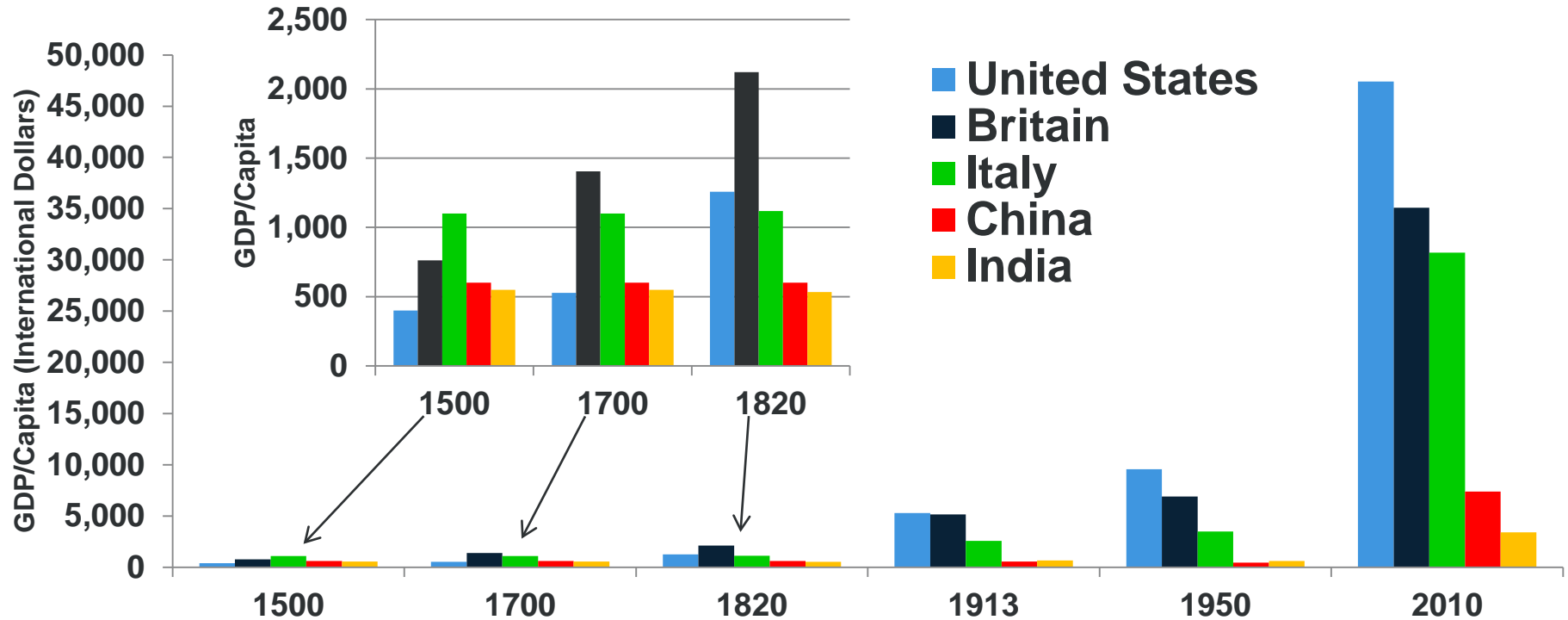
- Slower Overall Productivity Growth
- Aging Workforce/Demographics
- Technology-Enabled Disruption
- The Changing Nature of Work
- Increased Globalization
- Higher Federal Debt/GDP
- Economic and Political Uncertainty

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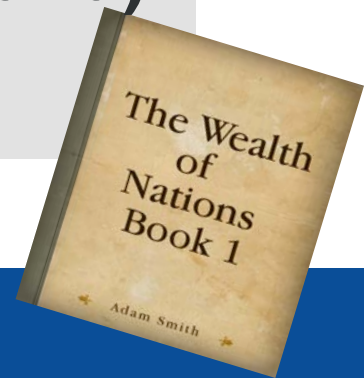
A 5000 Year Leap

The U.S. as a Case Study



Adam Smith (1776)

- The **division of labor** (specialization)
- The **role of money** (efficient)
- The **ability to exchange** (cooperation)
- The **nature of markets** (invisible hand)



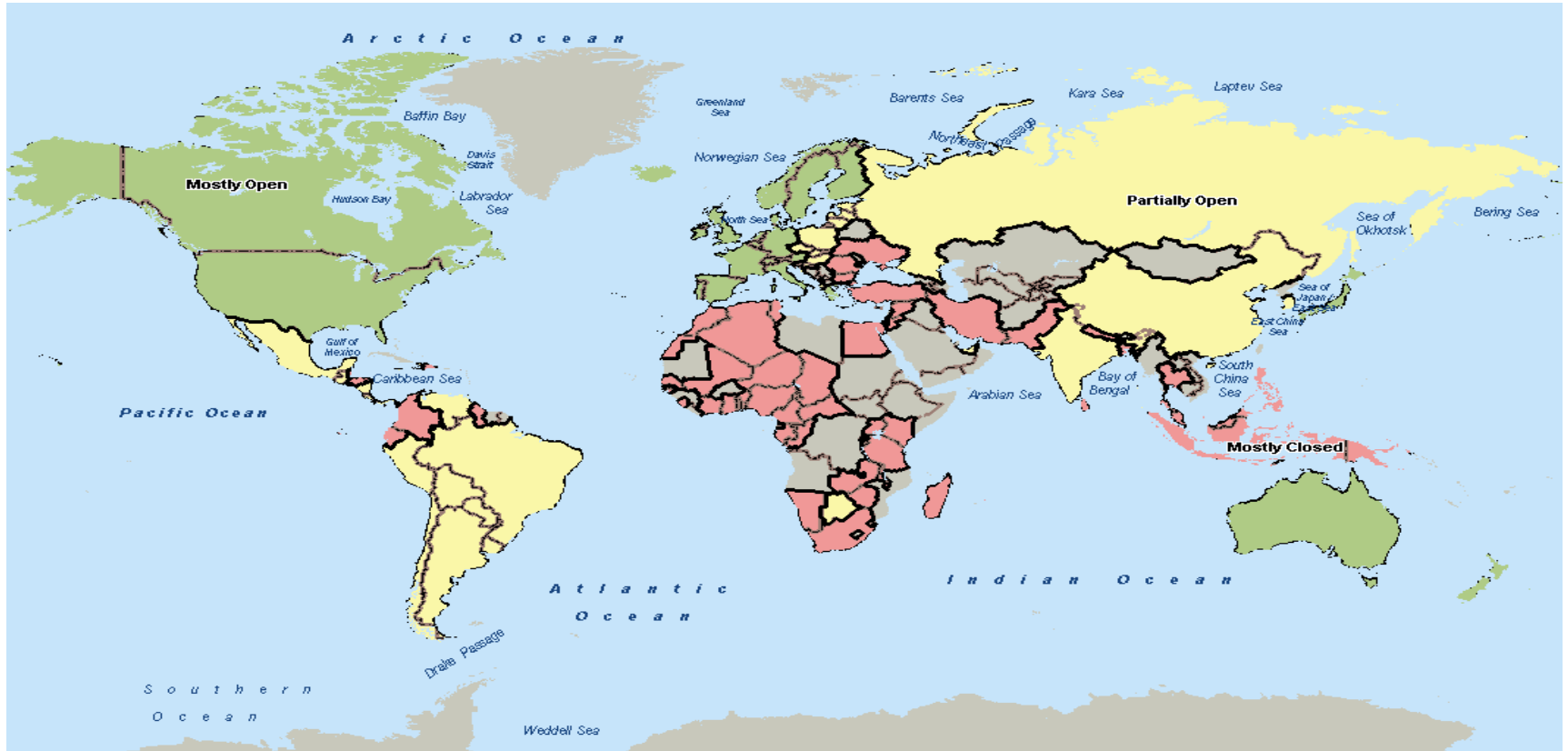
What Drives Economic Growth?

- Proficiencies?
- Practices?
- Policies?
- Providence?

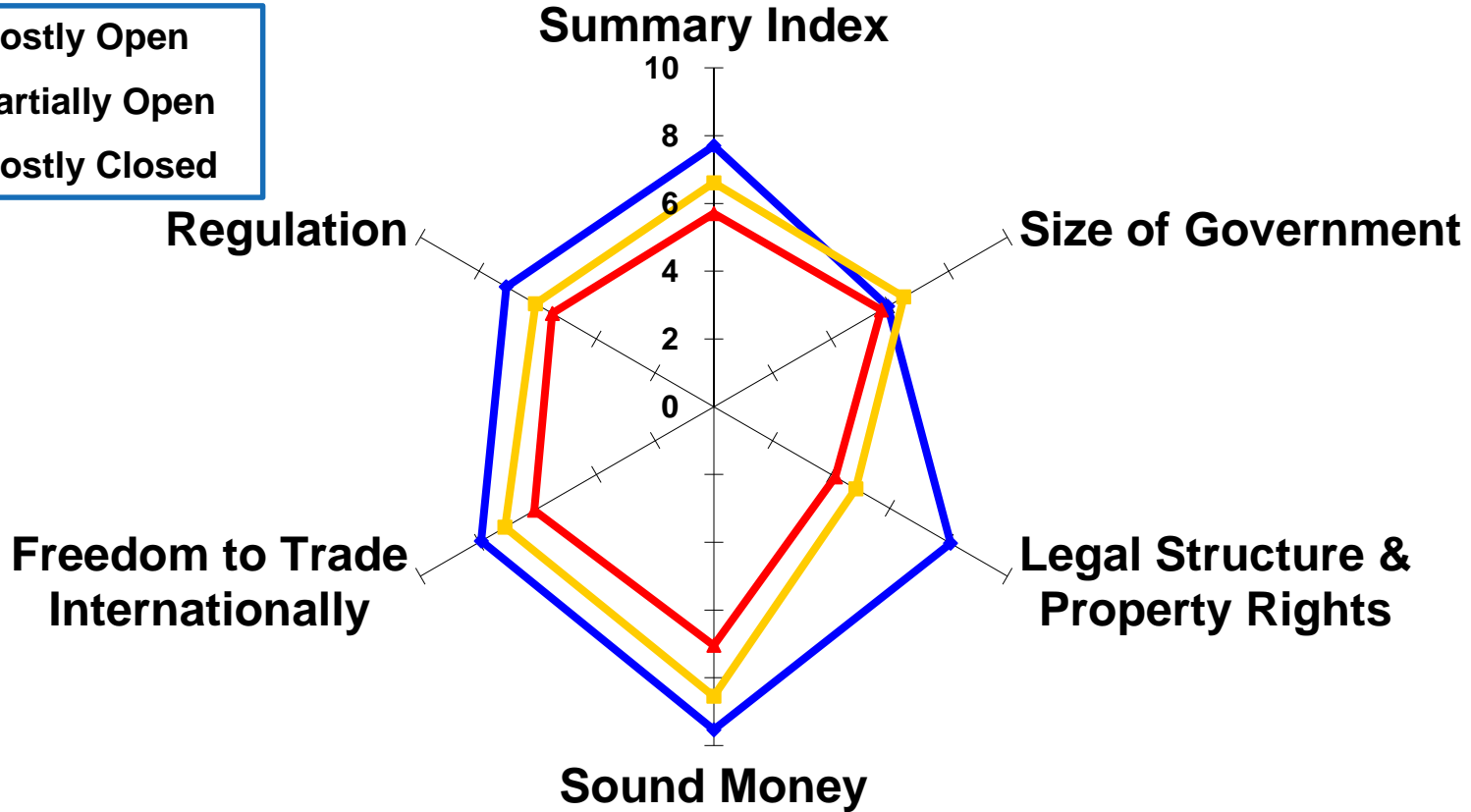
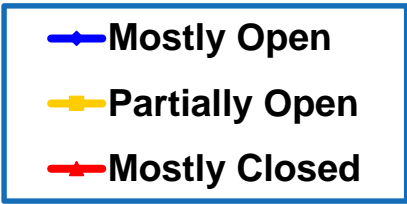
Neural Network Cluster Analysis

- Objective: Cluster nations into 3 groups
 - Mostly-open
 - Partially-open
 - Mostly-closed
- Methodology: Artificial Neural Network Model
- Data: 119 nations
- Variables: To proxy globalization (openness)
 - 5 “Freedom to Trade Internationally” measures
 - 2 Economic Size and Wealth measures

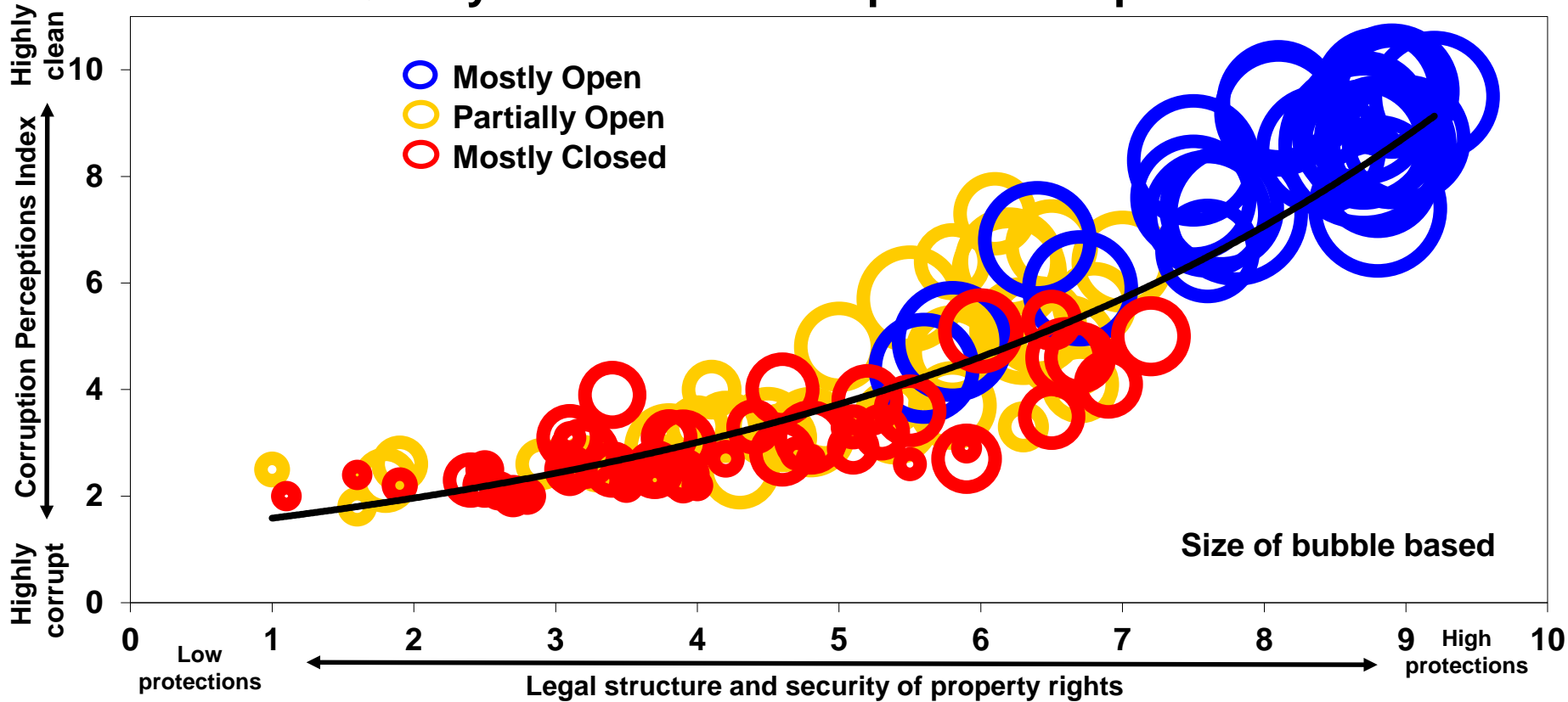
Neural Network Cluster Analysis



Openness and Freedom Go Together



Openness and Wealth are Related to Better Institutional Quality and Lower Corruption Perceptions



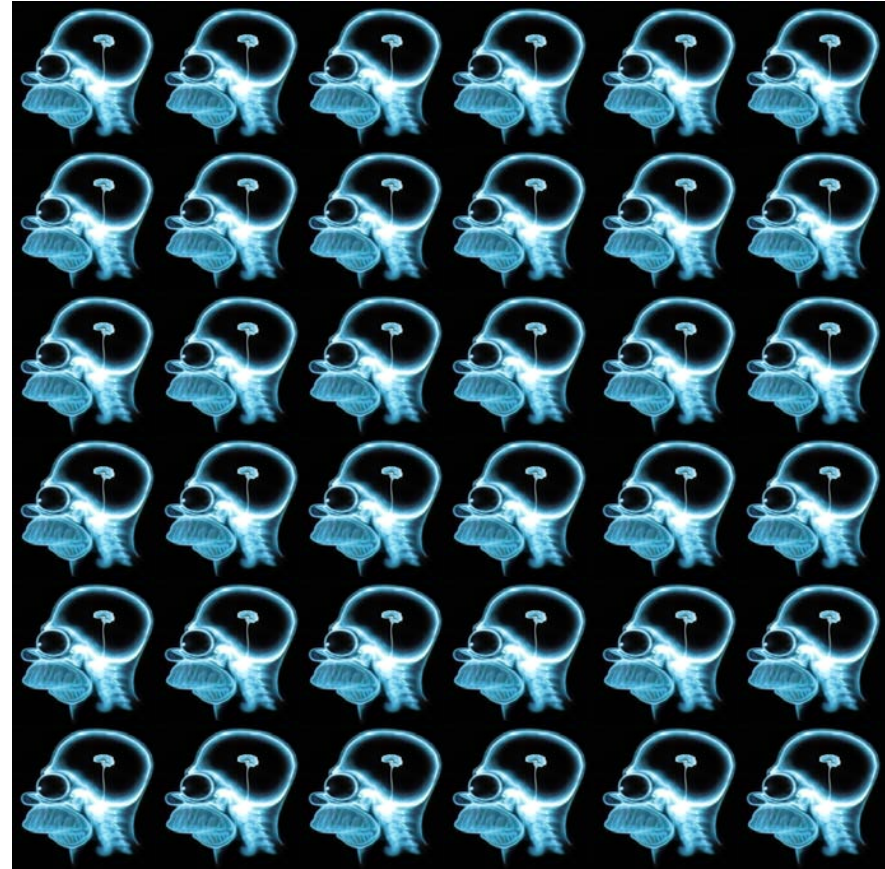


BRAIN STORE

Engineer Brain = \$3/ounce

Physician Brain = \$4/ounce

Lawyer Brain = \$1,000/ounce



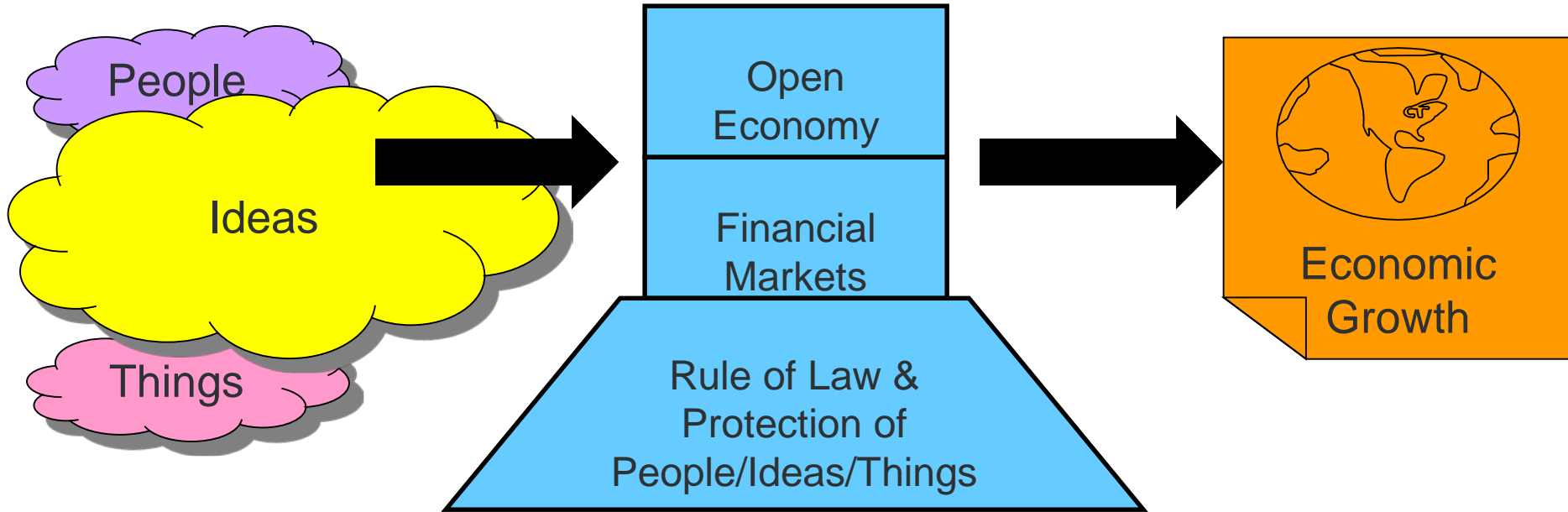
What Drives Economic Growth?

- Innovative Ideas/Entrepreneurship
- Strong Legal Protections and the Rule of Law
- Trustworthy Financial Markets
- Openness (Globalization)
- Creative Human Capital
- Technological Adeptness



Source: TEDxSMU Talk, “The Wealth of Innovations” by Thomas F. Siems, April 2015

Economic Growth Model



Notable U.S. Outcomes...

- **World's largest economy: >\$19 trillion**
- **Eight of the top 10 universities in the world (and 16 of the top 20)**
- **Most Nobel prizes awarded (372 vs. 127 for runner-up United Kingdom)**
- **Most new businesses created**
- **More patents and innovation**
- **Greatest concentration of financial assets (40% of world share)**

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The Importance of Vision and Purpose

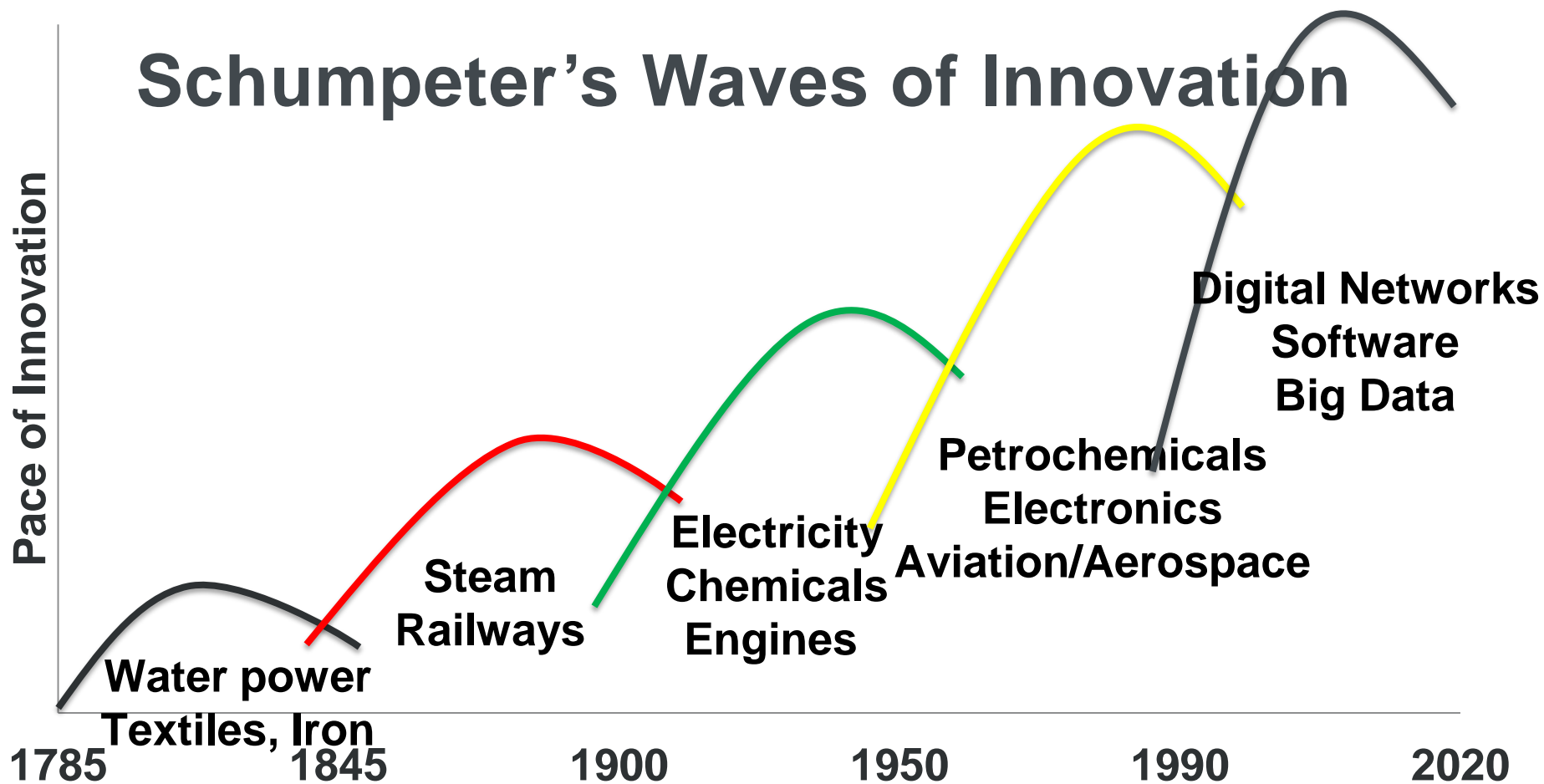
- **Vision and Purpose are your most powerful driving forces**
 - **Strategic**
 - **Inspiring**
 - **Exciting**
 - **Challenging**

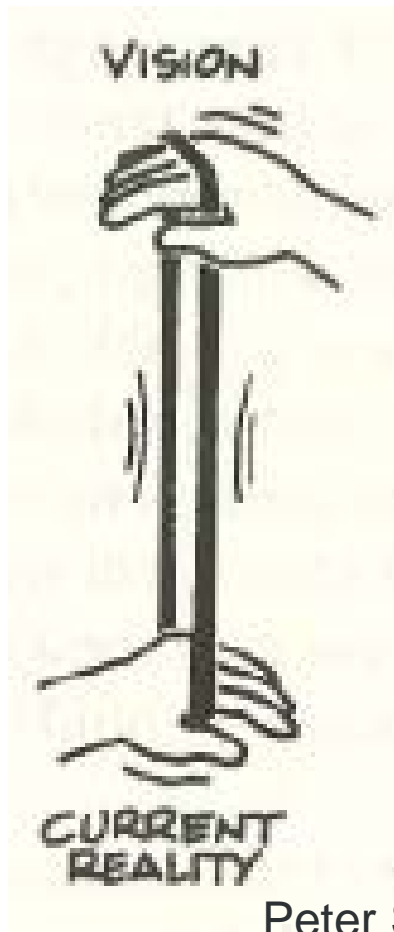
**“Whatever the mind can
conceive and believe,
it can achieve”
- Napoleon Hill (1937)**



Schumpeter's Waves of Innovation

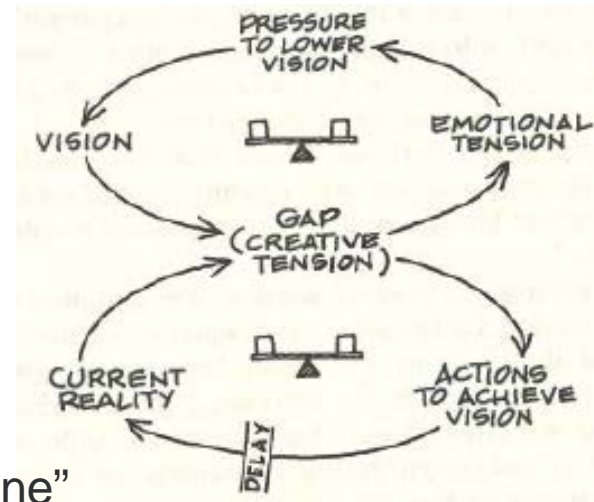
Pace of Innovation





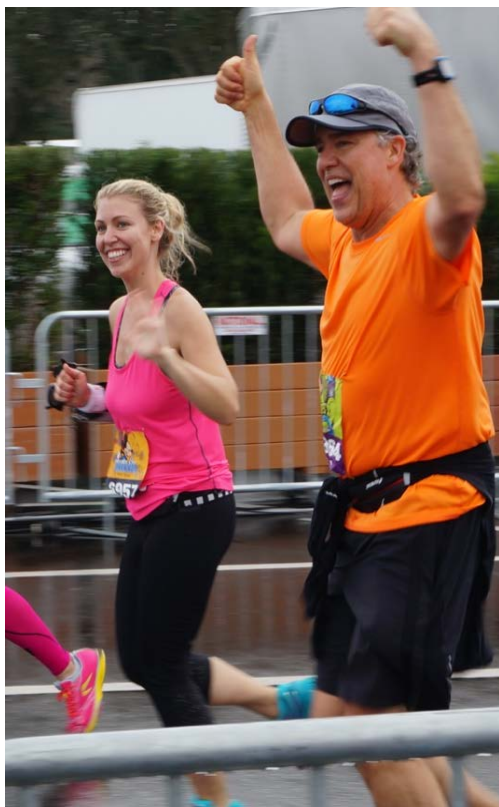
Use the **GAP** between Vision and Current Reality as a source of **CREATIVE ENERGY**

Don't confuse "negative" emotions with this **CREATIVE TENSION**



Peter Senge, "The Fifth Discipline"

Marathon Man!



- Don't lower your vision
- Learn from your mistakes
- Create your own funding sources
- Enjoy the journey
- Inspire others
- Take your game to the next level

Launch Checklist

Gravitas

Opportunitas

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Go For Launch!