

Human Capital and Economic Activity in U.S. Metro Areas

A Focus on New York State

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New York State Network for Economic Research Conference: A Focus on Human Capital

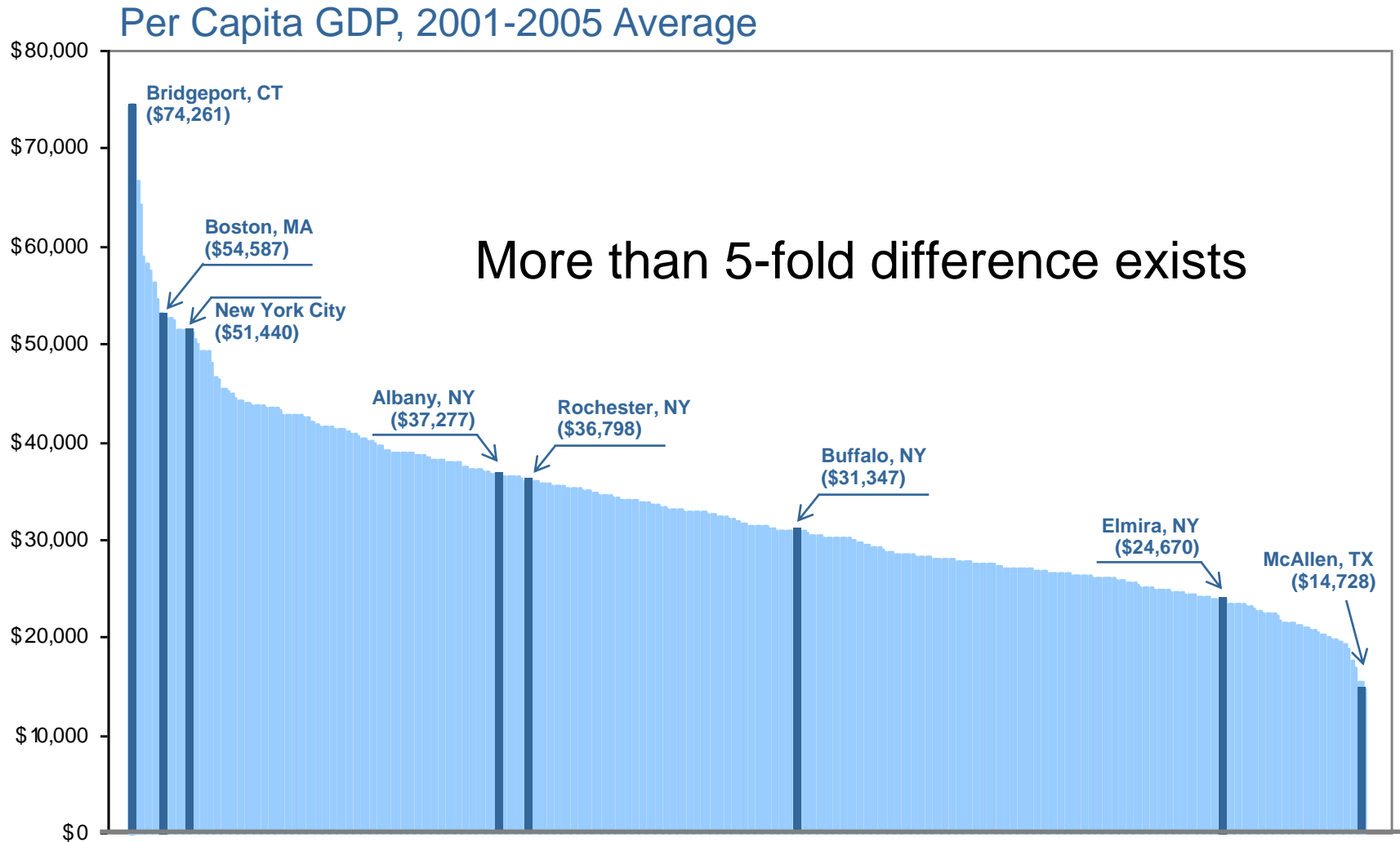
The Nelson A. Rockefeller Institute of Government

Albany, NY; September 14, 2009

Overview

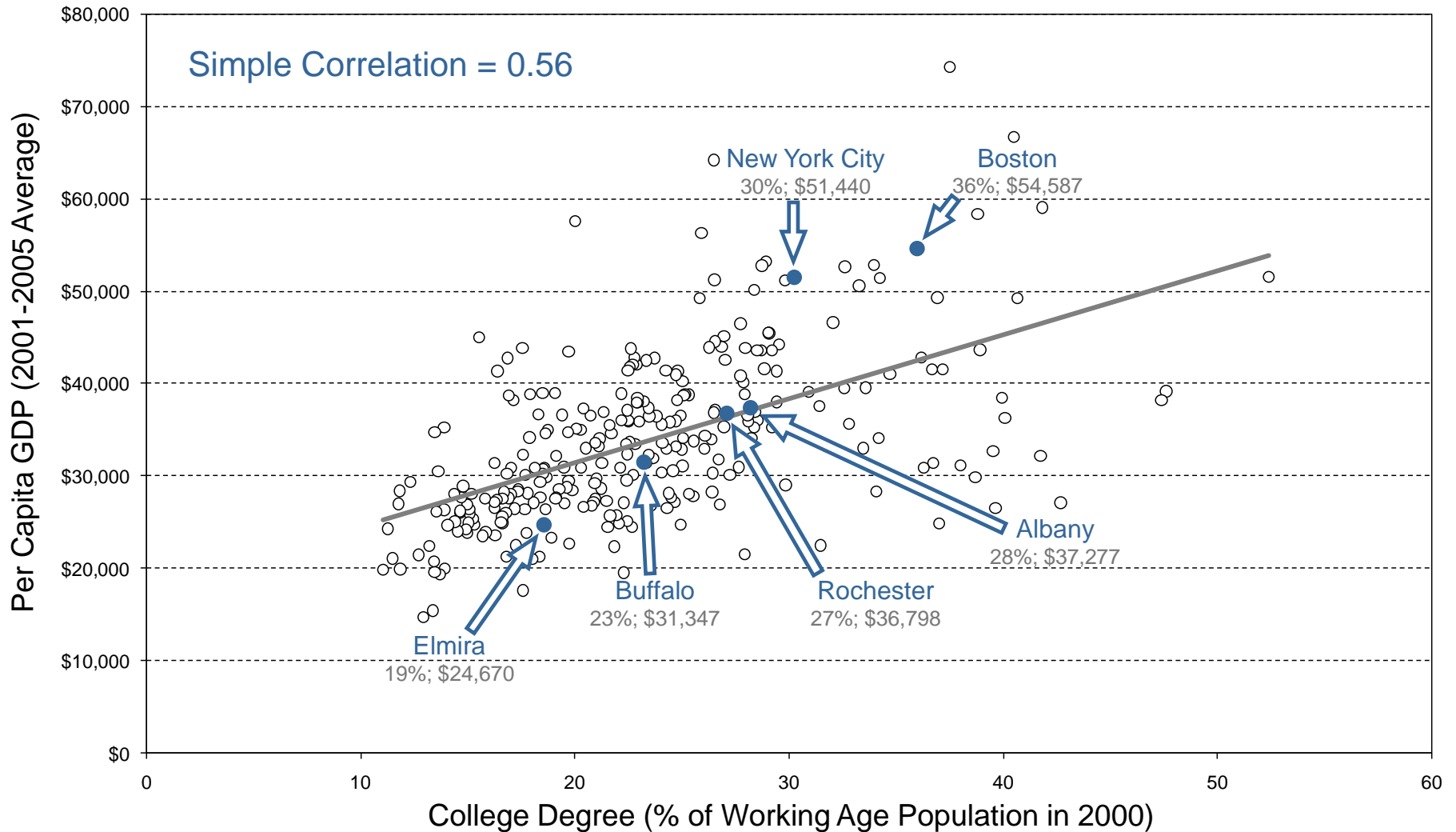
- What is the relationship between the stock of human capital and the level of economic activity in U.S. metropolitan areas?
 - Utilize new data on metropolitan area GDP to measure economic activity
 - Develop new knowledge-based measures of human capital to complement conventional measures
 - Describe the types of human capital in New York's metropolitan areas

Distribution of Economic Activity



Source: U.S. Bureau of Economic Analysis, U.S. Census

Education and Economic Activity



Economic Foundations

- Human capital increases the productivity of individuals
 - Skilled workers produce more goods and services
 - Skilled workers more likely to produce high value goods and services
- Human capital spillovers enhance productivity and fuel innovation
 - Workers gain knowledge and skills by learning from others
 - New ideas are created through formal and informal interactions
- Impact on economic activity may differ by type of human capital

Measuring Human Capital

Education	Occupations	Knowledge				
College Degree		Biology		Law	Math	Engineering
		Economics		Management		Physics
			Computers	Fine Arts		Sales
			Construction		English	
High School Diploma		Production	Mechanical			Security
No High School Diploma						

Types of Knowledge

- Administration and Management
- Biology
- Building and Construction
- Chemistry
 - Clerical
 - Communications and Media
 - Computers and Electronics
 - Customer and Personal Service
 - Design
- Economics and Accounting
 - Education and Training
- Engineering and Technology
 - English Language
- Fine Arts
 - Food Production
 - Foreign Language
 - Geography
- History and Archeology
- Law and Government
- Mathematics
- Mechanical
- Medicine and Dentistry
 - Personnel and Human Resources
 - Philosophy and Theology
 - Physics
- Production and Processing
 - Psychology
 - Public Safety and Security
- Sales and Marketing
 - Sociology and Anthropology
 - Telecommunications
 - Therapy and Counseling
 - Transportation

Source: O*NET, U.S. Department of Labor

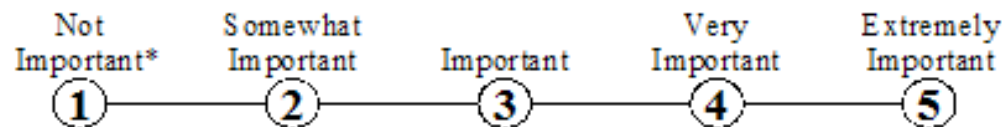
Measuring Knowledge

O*NET Questionnaire

14. Mathematics

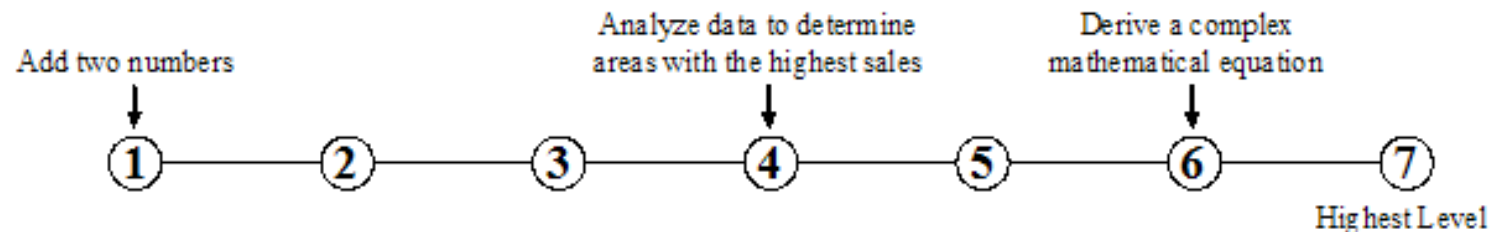
Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

A. How important is knowledge of MATHEMATICS to the performance of *your current job*?



* If you marked Not Important, skip LEVEL below and go on to the next knowledge area.

B. What level of knowledge of MATHEMATICS is needed to perform *your current job*?



Important Knowledge Types

- Types of knowledge associated with high levels of economic activity in metropolitan areas

- Administration and Management

- Economics and Accounting

- Mathematics

- Computers and Electronics

- Sales and Marketing

- Personnel and Human Resources

- Customer and Personal Service

- Clerical

- Telecommunications

- Law and Government

- Production and Processing

- Design

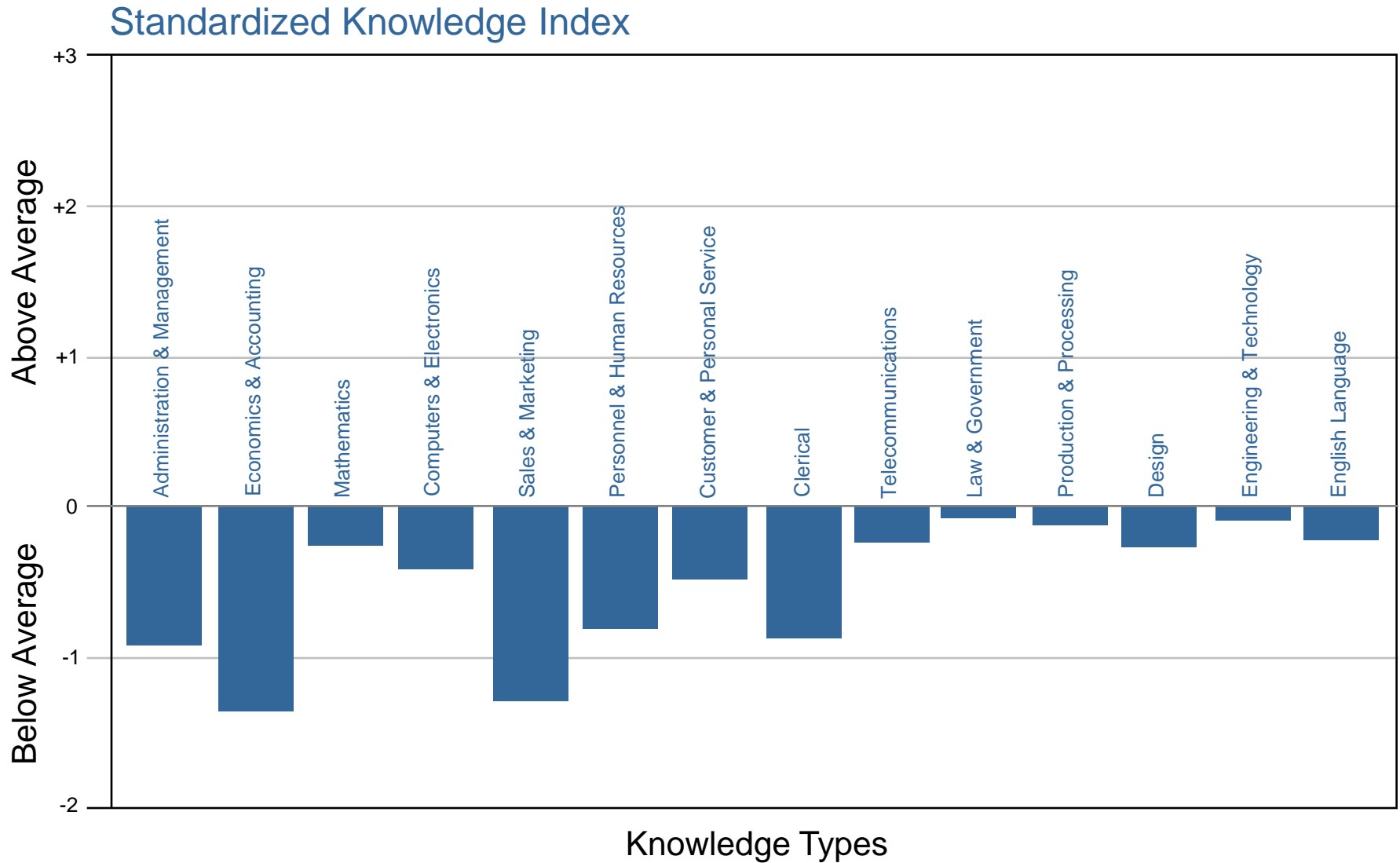
- Engineering and Technology

- English Language

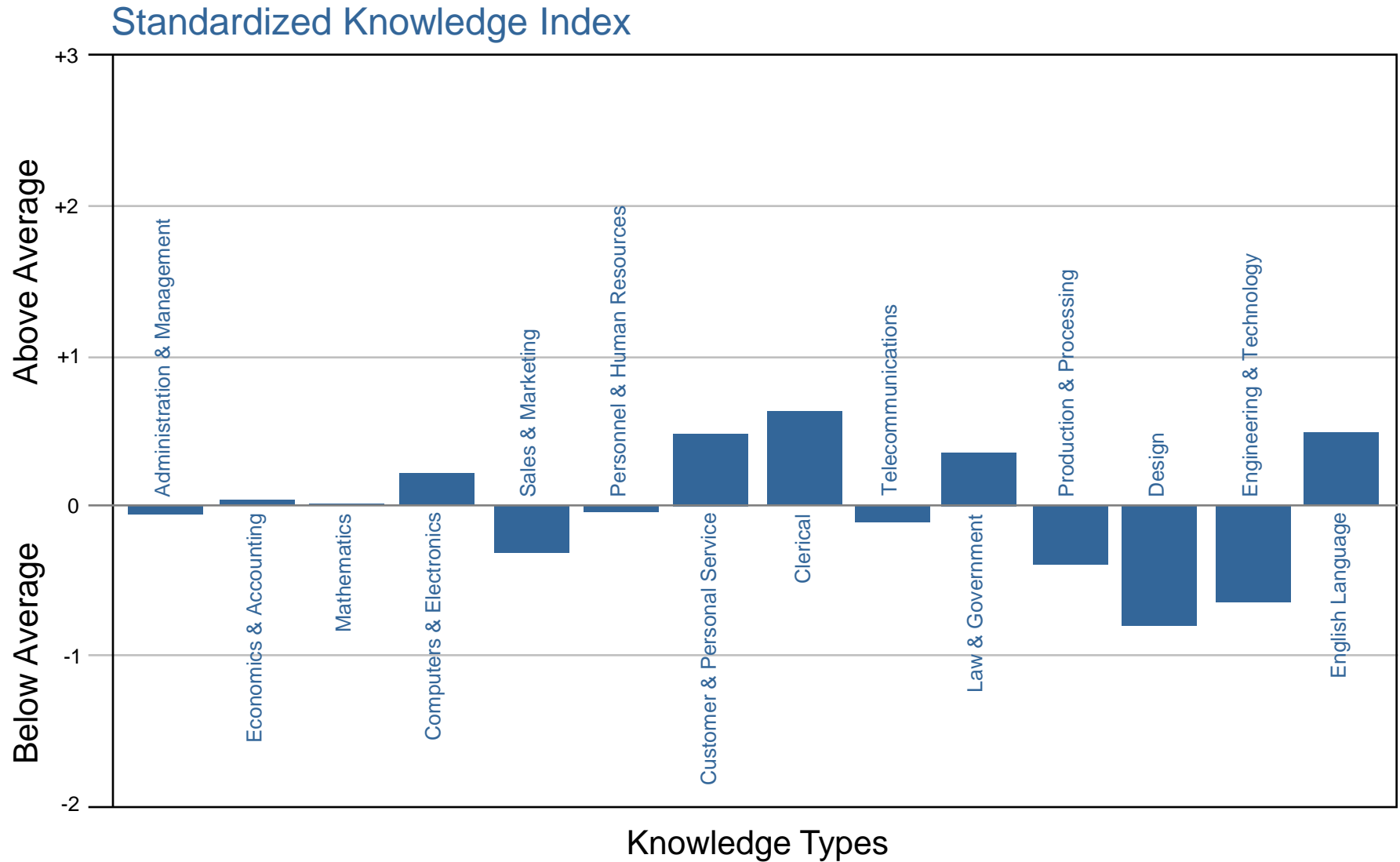
Producer Services

Information Technology

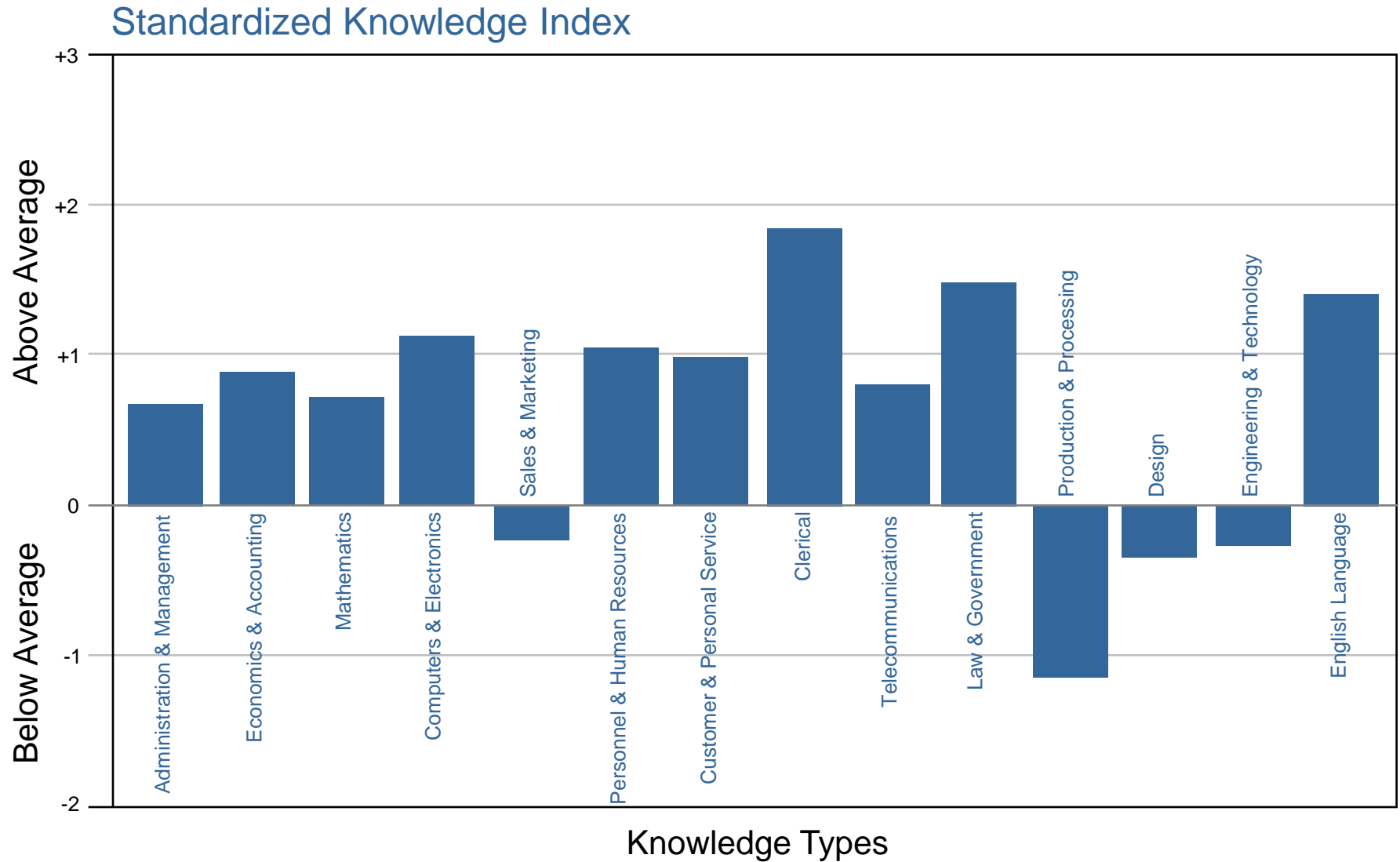
Knowledge Profile for Elmira, NY



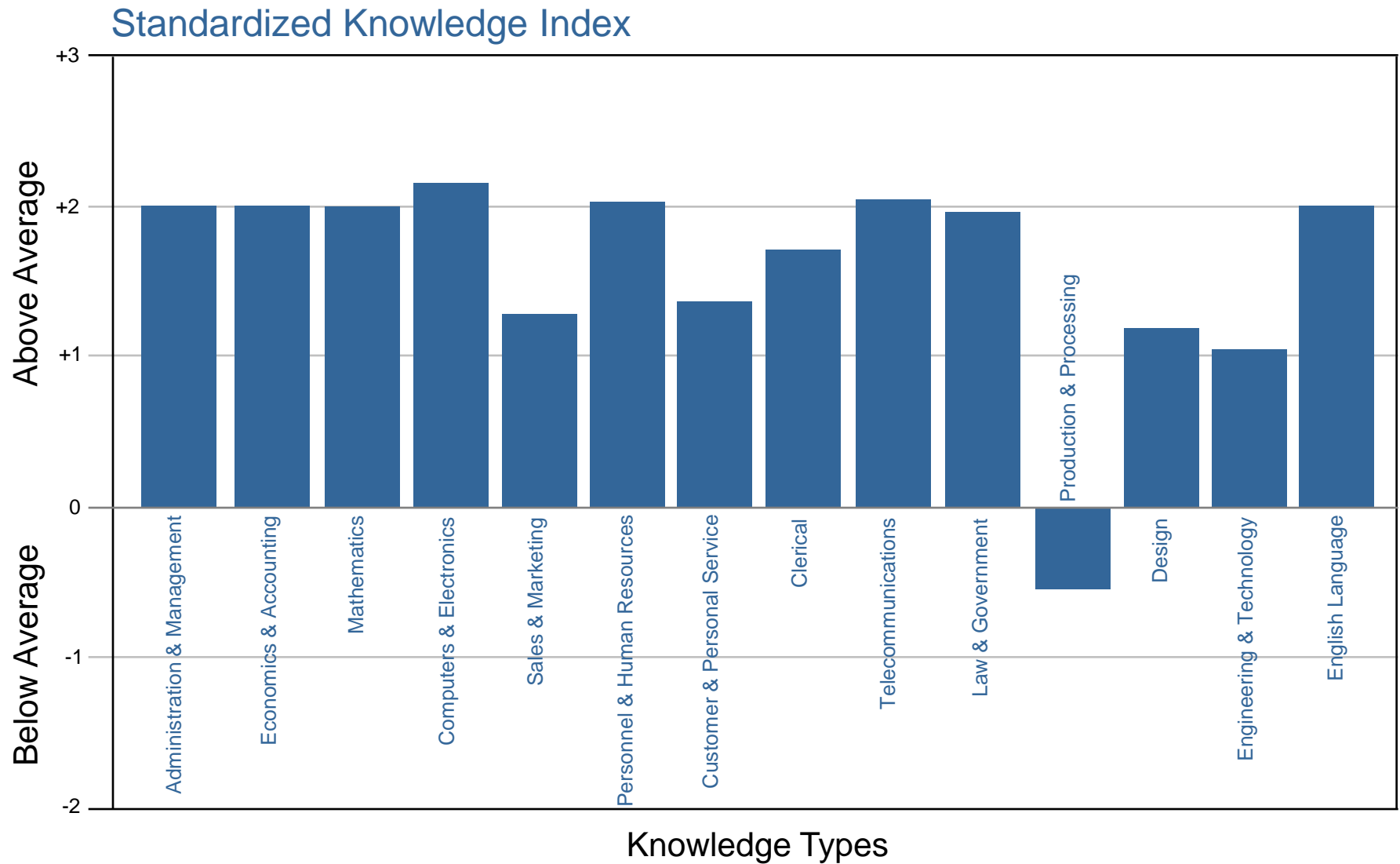
Knowledge Profile for Buffalo, NY



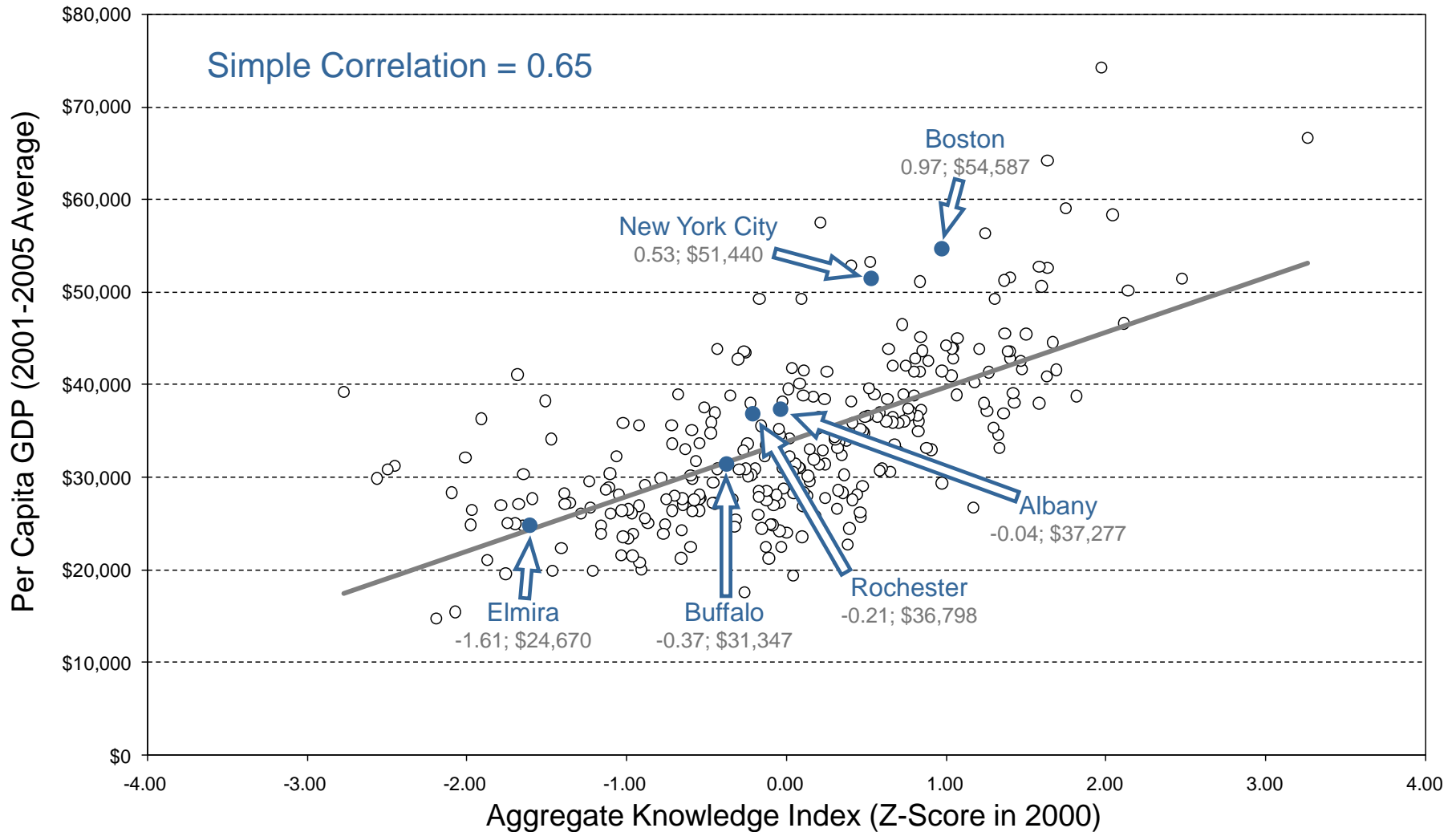
Knowledge Profile for Albany, NY



Knowledge Profile for Boston, MA



Knowledge and Economic Activity



Summary and Conclusions

- Amount of human capital in a region explains much of the observed difference in the *level* of economic activity across U.S. metropolitan areas
- *Type* of human capital also matters
 - Knowledge related to the provision of producer services and information technology boosts economic activity
- Many of New York's metros, particularly upstate, tend to have below average amounts of the types of human capital associated with high levels of economic activity

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