

**PRESENTATION**  
BIG DATA ANALYTICS

# **ANALYZING JOB MARKET TRENDS AND INDUSTRY GROWTH IN THE UNITED STATES**

Prepared by Ibrahim Abu Saiid

---





# BACKGROUND

---

The job market landscape in the United States has witnessed dynamic shifts over the past years, evolving hand in hand with industry growth. Understanding these trends and their interdependencies is crucial for comprehending the changing dynamics of the American workforce. This analysis aims to delve into the intricate relationship between job market trends, including industry growth, industry migration, skill migration, and skill demand, to unravel the underlying factors shaping the U.S. job market. By uncovering these insights, organizations and policymakers can make informed decisions about workforce planning, skill development strategies, and industry investment, fostering a more adaptive and competitive job market landscape.



# OBJECTIVE

---

The primary objective of this analysis is to understand the interconnected dynamics of the U.S. job market, including industry growth, industry and skill-related migration, and skill demand to gain insights on the US job market trends :

## 1 UNDERSTAND INDUSTRY GROWTH

Explore growth rate distributions across U.S. states from 2015 to 2019 for different industry sectors.

## 2 EVALUATE SKILL & INDUSTRY MIGRATION IMPACT

Examine the link between skill/industry migration and industry growth.

## 3 ASSESS SKILL TRENDS

Analyze the skill ranks and trends within the most thriving industry.

## 4 CORRELATE SKILL MIGRATION WITH PENETRATION RATES

Examine how skill migration has impacted the penetration rates of skill groups within the highest growing industry.

# DATA SCIENCE QUESTIONS

---

- How does the distribution of industry sector growth rates vary across the United States between 2015 and 2019?
- Is there a relationship between skill migration and the rapid growth of the Mining and quarrying industry from 2016 to 2017?
- What are the growth rates of industries within the highest-growing industry section in the United States between 2015 and 2019?
- What are the skill ranks for the highest-growing industry(venture capital and private equity) within the financial and insurance activities industry sector in the United States between 2015 and 2019?
- What are the skill trends for the highest-growing industry(venture capital and private equity) within the financial and insurance activities sector in the United States between 2015 and 2019?
- How has skill migration influenced the penetration rates of skill groups from venture capital & private equity industry between 2015 and 2019?
- What were the top industry migration gain and loss across various industries in the United States from 2015 to 2019?
- How does this industry migration effect the industry growth of the computer software industry in US?

# METODOLOGY

## **DATA COLLECTION:**

- 1 Utilizing the provided datasets encompassing information on industry growth, skill migration, skill ranks, penetration rates, and industry migration from 2015 to 2019.

## **DATA CLEANING AND PREPARATION:**

- 2 Scrutinizing datasets, handling missing values, and formatting data for seamless analysis.

## **EXPLORATORY DATA ANALYSIS (EDA):**

- 3 Employing statistical tools and visualizations to comprehend industry growth rates, skill trends, and migration patterns.

## **INTERPRETATION AND CONCLUSION:**

- 4 Drawing meaningful insights and conclusions based on the analyses conducted, highlighting key findings and their implications for the job market trends and industry growth in the United States.



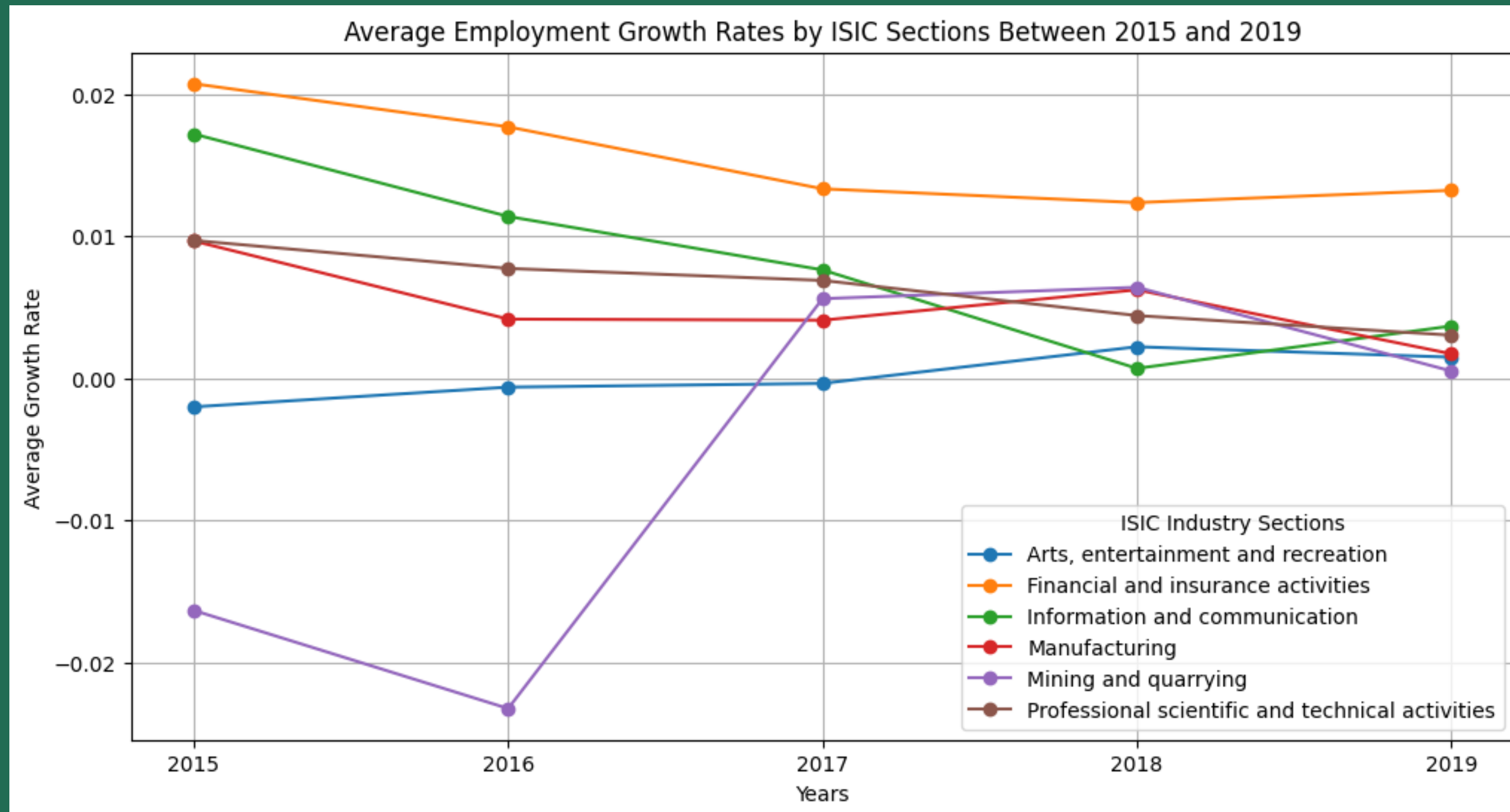
# RESULTS & VISUALIZATION



# EXAMINING INDUSTRY GROWTH FOR DIFFERENT INDUSTRY SECTORS FROM 2015 TO 2019

1

How does the distribution of industry sector growth rates vary across the United States between 2015 and 2019?



**Consistent Leader - Financial and Insurance Activities:** Consistently held the highest growth rates, indicating resilience despite a gradual decrease. This stability could indicate the continuous expansion of this particular industry within the U.S. economy.

**Mining and Quarrying:** Initial decline followed by a rapid growth by 2017, but failed to sustain momentum. This volatile behavior suggests potential fluctuations or instabilities within this sector, impacting its overall growth pattern.

**Stable Position of Information and Communication and Professional Scientific Sectors:** Initially high growth rates but experienced continuous decline. This trend indicates a relative slowing down of growth potentially signaling market saturation.

**Manufacturing:** Showed a notable decline in growth rates, indicating possible challenges or transformations within the sector.

**Arts, Entertainment, and Recreation:** Despite initial negative growth, steadily improved, signifying resilience or adaptive strategies within the industry, resulting in a positive growth trajectory.

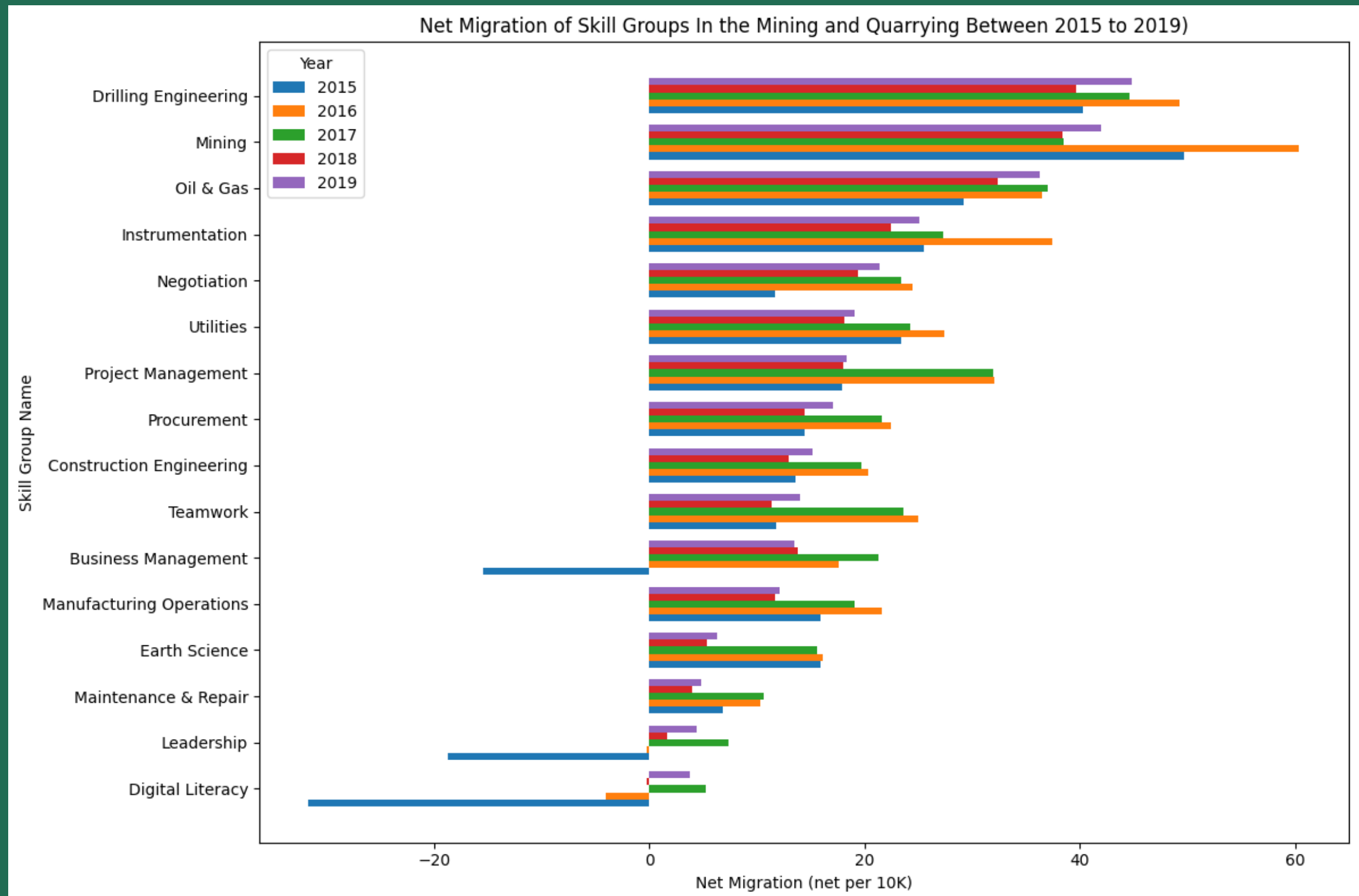


# EVALUATING THE IMPACT OF SKILL MIGRATION ON INDUSTRY GROWTH

2 Is there a relationship between skill migration and the rapid growth of the Mining and quarrying industry from 2016 to 2017?

The significant increase in net migration across 14 out of 16 skill groups during 2016 and 2017 appears to align with the observed rapid employment growth in this sector. This suggests a **probable correlation** between skill migration and the industry's substantial expansion during this period.

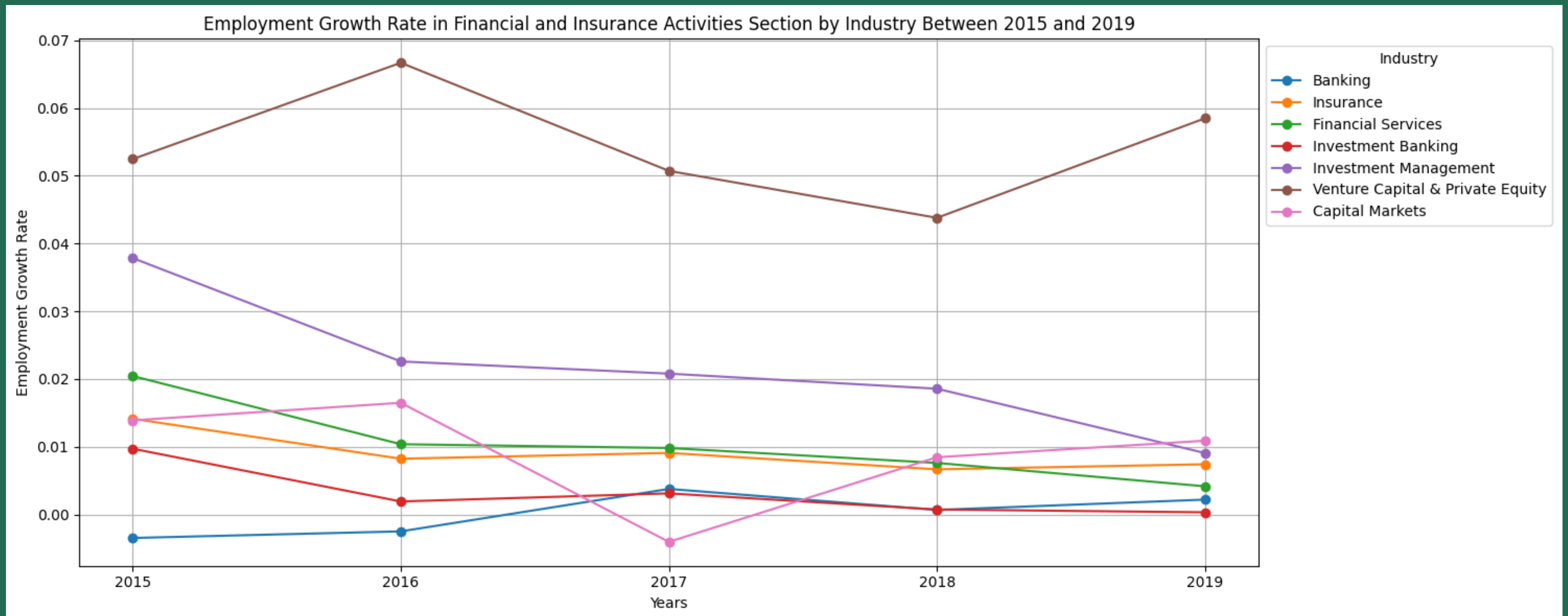
The subsequent slight decrease in migration in 2018 could indicate a slowdown in industry growth following those migration patterns.



# EXAMINING INDUSTRY GROWTH FOR DIFFERENT INDUSTRIES WITHIN THE HIGHEST-GROWING INDUSTRY SECTION

3

What are the growth rates of industries within the highest-growing industry section in the United States between 2015 and 2019?



- The Venture Capital & Private Equity industry stood out as the highest-growing segment within the Financial and Insurance Activities sector from 2015 to 2019. Its consistent growth, despite fluctuations, reflects its resilience, adaptability, and unwavering pursuit of innovation-driven high-growth opportunities.
- **Financial Services, Insurance, and Investment Banking:** These industries showed a gradual decline in growth rates, suggesting potential market saturation or changing consumer demands impacting these industries negatively.
- **Market Volatility:** Capital Markets experienced fluctuations due to market uncertainties, showing sharp declines followed by recoveries. The volatile nature of financial markets during this period contributed to these fluctuations.
- **Regulatory Changes:** Shifts in regulations, particularly in banking and investment industries, impacted growth rates. Stricter regulations often led to slower growth as companies adjusted strategies to comply with new rules.
- **Industry Maturity:** Mature industries like Banking exhibited slower growth rates compared to emerging or high-risk sectors. Market saturation and established competition often lead to stable but slower growth in mature industries.
- **Market Saturation:** Industries like Financial Services and Insurance experienced saturation, leading to slower growth rates due to intensified competition and limited opportunities for substantial growth.

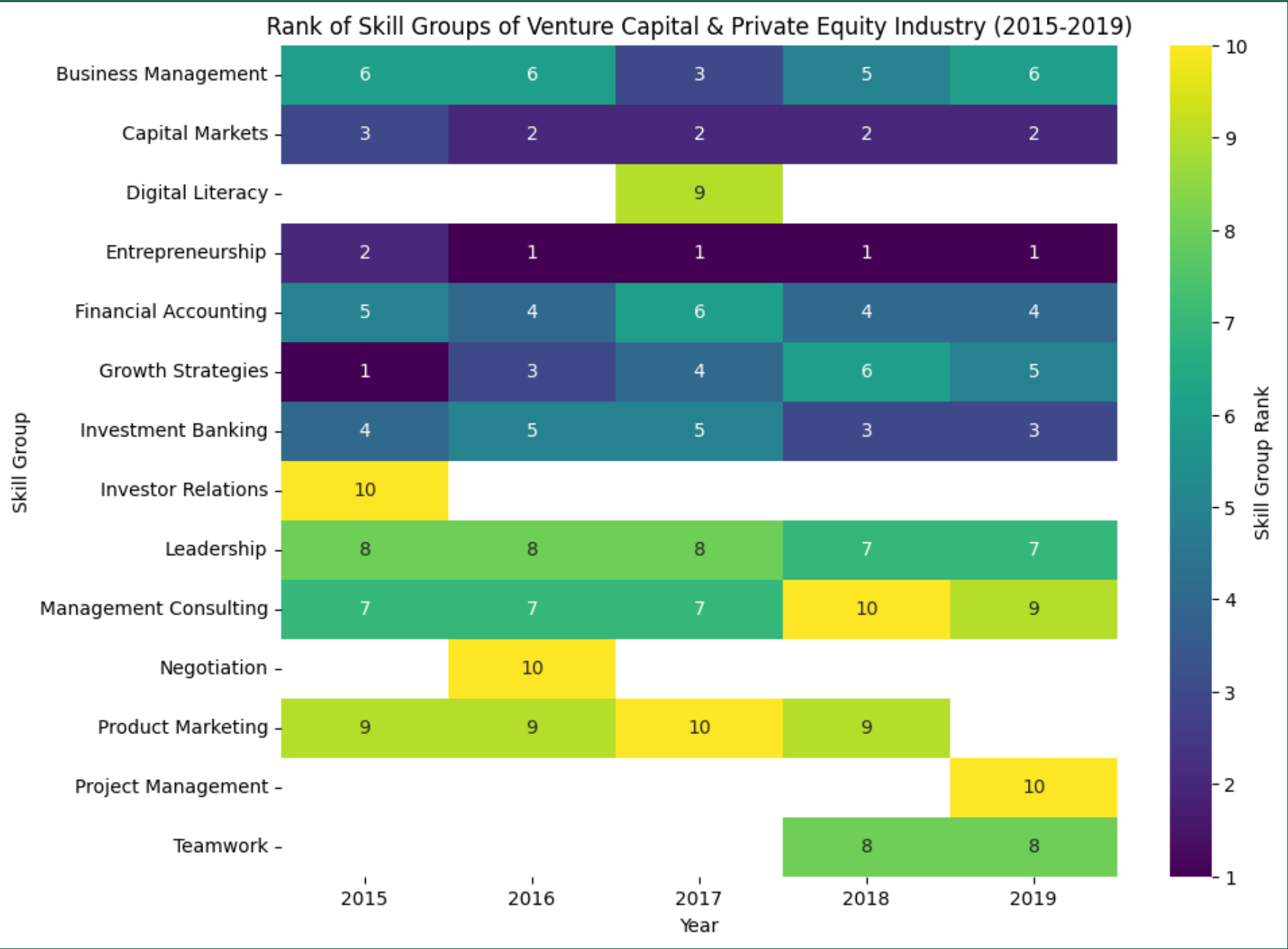
# ANALYZING THE SKILL RANKS WITHIN THE MOST THRIVING INDUSTRY

4

What are the skill ranks for the highest-growing industry(venture capital and private equity) within the financial and insurance activities industry sector in the United States between 2015 and 2019?

**Consistent Core Skills:** Entrepreneurship and Capital Market skills remained consistently high-ranked, indicating their fundamental importance in the industry. This stability implies their sustained and critical demand.

**Shifting Skill Dynamics:** Growth Strategies declined from rank 1 to 6, signaling reduced industry emphasis on these specific strategies. Conversely, Financial Accounting skills rose in rank, reflecting a growing need for financial expertise during this period.



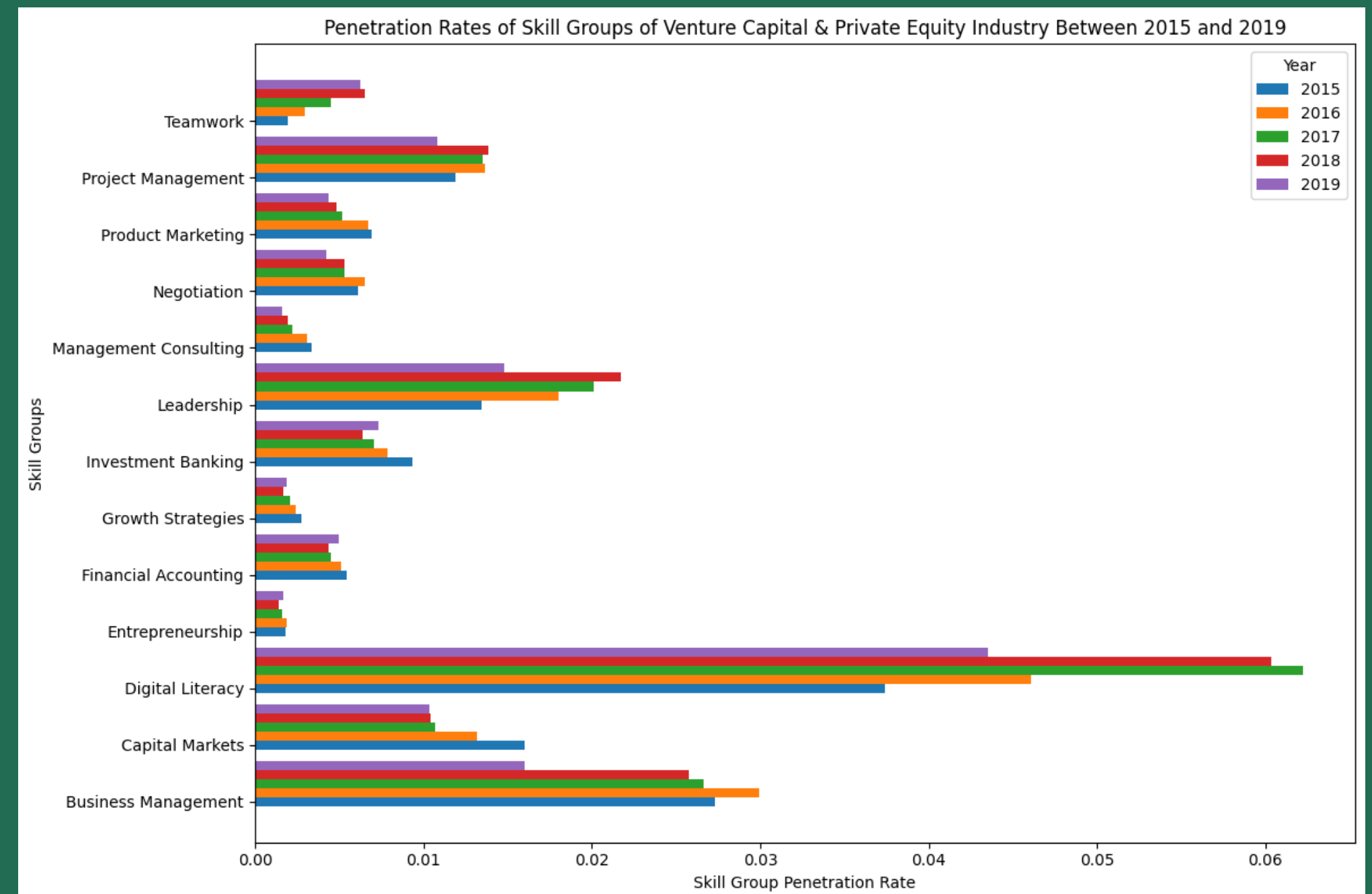


# ANALYZING THE SKILL TREND WITHIN THE MOST THRIVING INDUSTRY

5

What are the skill trends for the highest-growing industry(venture capital and private equity) within the financial and insurance activities sector in the United States between 2015 and 2019?

- The rise in digital literacy penetration indicates the increasing importance of technological proficiency within these sectors.
- The growing emphasis on teamwork signifies a shift toward collaborative environments within venture capital and private equity.

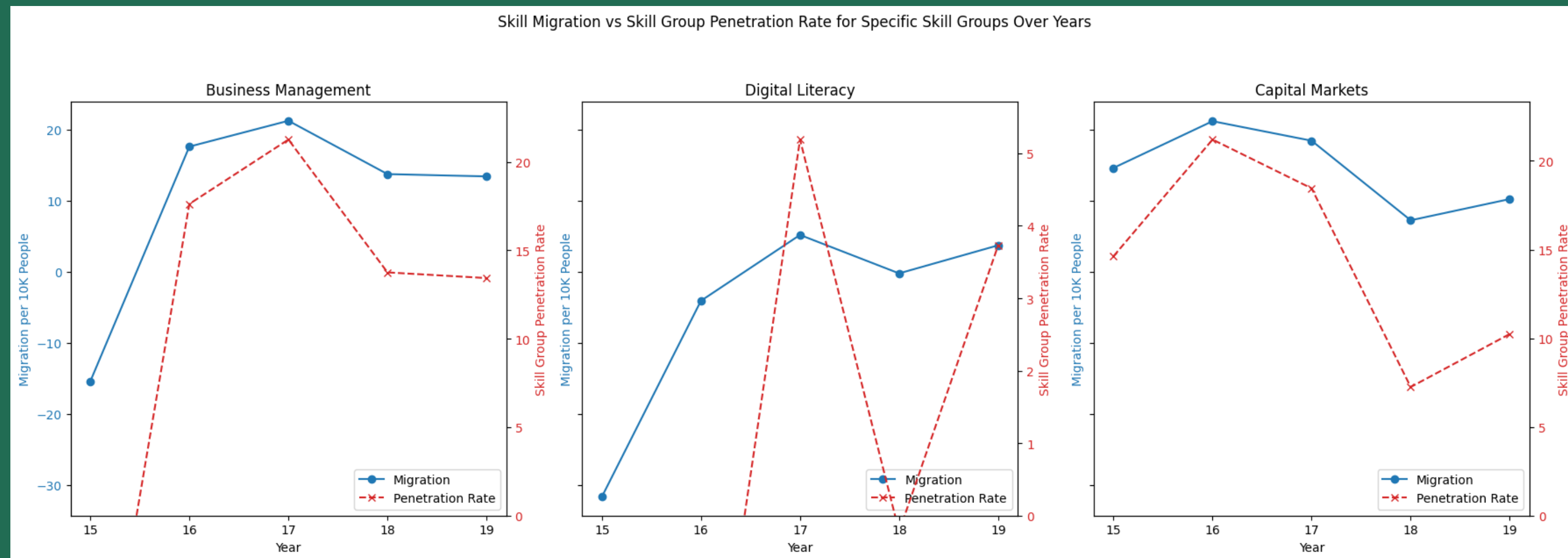


# CORRELATING SKILL MIGRATION WITH PENETRATION RATES

6

How has skill migration influenced the penetration rates of skill groups from venture capital & private equity industry between 2015 and 2019?

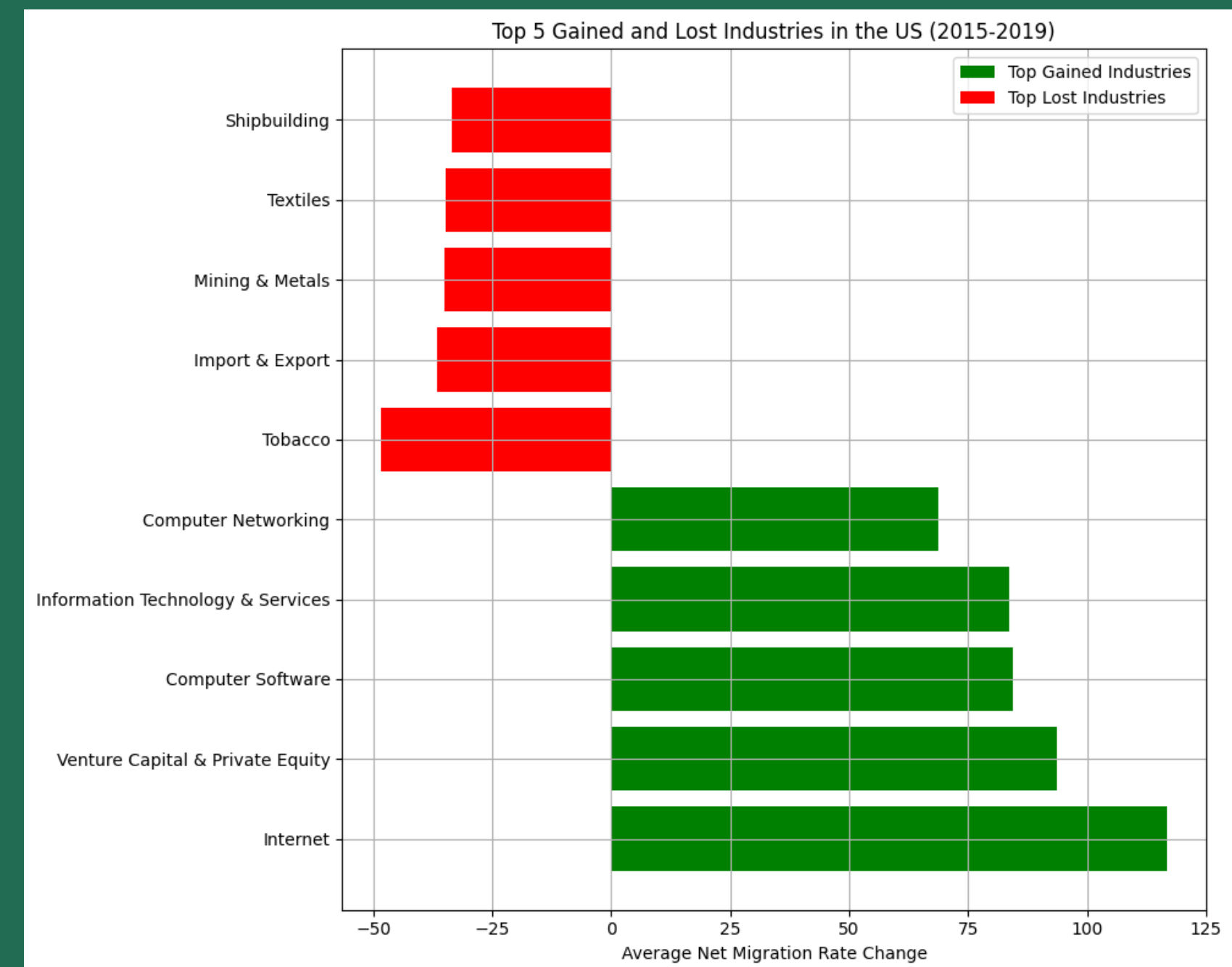
Across these skill groups, as migration (movement of skills) increases, penetration rates also rise concurrently. The correlation suggests a mutually beneficial relationship: as more professionals bring specific skills into venture capital & private equity, those skills become more prevalent and adopted within the industry.



# UNDERSTANDING INDUSTRY GROWTH TRENDS FROM INDUSTRY MIGRATION

**7** What were the top industry migration gain and loss across various industries in the United States from 2015 to 2019?

- **Emergence of Tech-Related industries:** Industries associated with technology, such as internet-related fields and computer software, demonstrated notable gains, signifying a shift toward tech-centric occupations.
- **Decline in Traditional Industries:** Traditional sectors like tobacco, mining, and textiles experienced substantial losses, indicating a shift away from these industries, potentially due to changing market demands or global economic shifts.

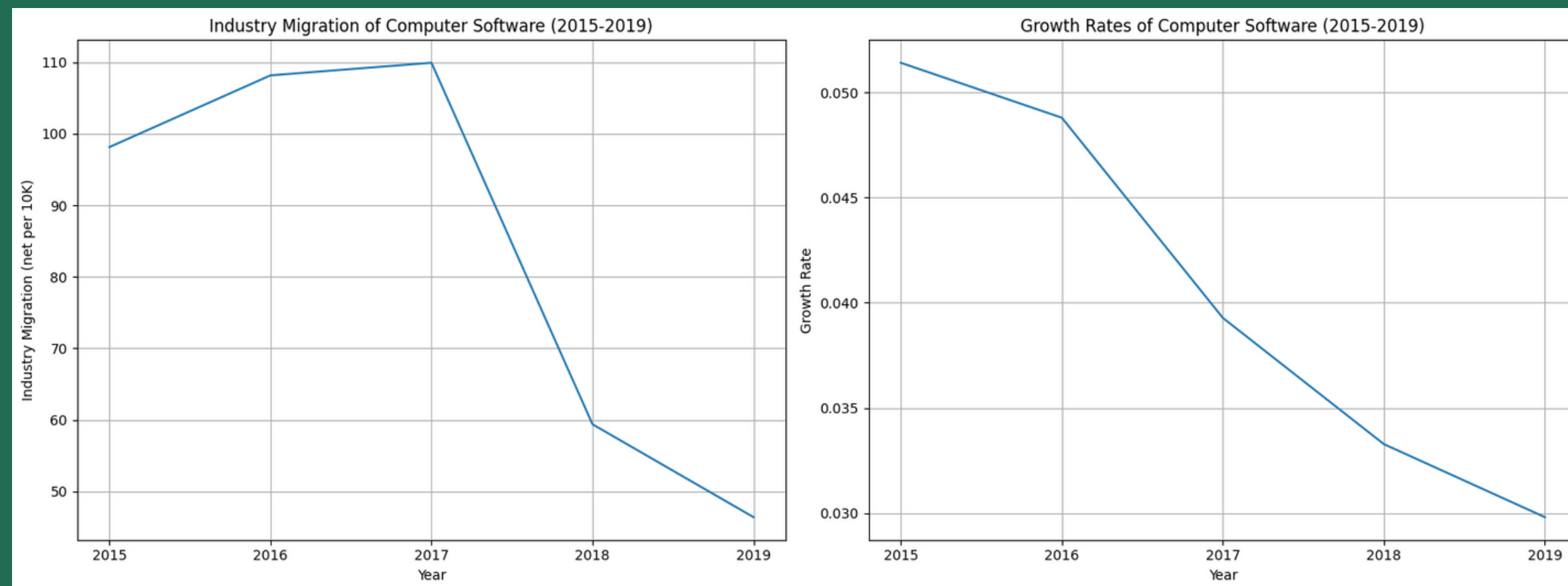


# EVALUATING THE IMPACT INDUSTRY MIGRATION ON INDUSTRY GROWTH

8

How does this industry migration effect the industry growth of the computer software industry in US?

- **Correlated Dynamics:** The relationship between industry migration and employment growth in the computer software sector from 2015 to 2019 shows a moderate correlation as they are moderately proportional. The observed relationship suggests that as industry migration rates decline, there was a corresponding drop in employment growth within the computer software industry.
- **Potential Influence:** This correlation hints at the possibility that migration, potentially bringing in skilled professionals, could contribute to the industry's growth by bolstering its workforce.





# CONCLUSION

The analysis of U.S. job market trends reveals a landscape shaped by dynamic shifts and interdependencies between industry growth, skill migration, and employment patterns. Across various industry sectors, distinct growth trajectories emerged, showcasing resilience, volatility, and market saturation. Notably, the Financial and Insurance Activities sector exhibited consistent growth, whereas sectors like Mining and Quarrying displayed fluctuating patterns, possibly influenced by skill migration spikes. Within this landscape, the Venture Capital & Private Equity segment stood out for its robust and innovative growth, while other industries within the same sector faced challenges due to market volatility, regulatory shifts, and maturity. Skill trends mirrored industry shifts, emphasizing the rising significance of digital literacy and collaborative teamwork. Skill migration appeared to play a pivotal role, correlating with the adoption and prevalence of specific skills within industries. Tech-related industries gained momentum, while traditional sectors experienced declines, reflecting evolving market demands. Additionally, a moderate correlation was observed between industry migration and employment growth in the computer software sector, hinting at the potential impact of skilled migration on industry expansion. Understanding these intricate relationships is paramount for informed decision-making in workforce planning, skill development, and industry investment strategies, fostering adaptability and competitiveness in the ever-evolving U.S. job market landscape.