



DS 116: Data Visualization

Instructor: Dr.Madoyan

FOREIGN INVESTMENTS AND TAXPAYER INSTITUTIONS GROWTH RELATIONSHIP IN ARMENIA

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Introduction

Focus: Relationship between Foreign Direct Investments (FDI) and new taxpayer institution growth in Armenia.

Why This Topic Matters:

- ***Policy Insights:*** Helps policymakers understand how investments influence business development.
- ***Sectoral Impact:*** Identifies which industries benefit most from FDI in Armenia.
- ***Investor Guidance:*** Provides data-driven insights for strategic investment decisions.



Objective

→ ***Analyze FDI Trends:***

- Identify patterns, spikes, or declines in investment activity over time.

→ ***Study Taxpayer Institution Growth:***

- Investigate the growth trajectory of taxpayer institutions, including new business registrations and expansions.

→ ***Correlate FDI and Taxpayer Growth:***

- Identify possible relationships between FDI inflows and the establishment or growth of taxpayer institutions.

→ ***Validate the Hypothesis:***

- Conclude with evidence-backed findings.



Hypothesis of the Project

→ ***There is a positive correlation between foreign investments in an economic sector and the development of that sector. (Measured by the number of new companies created annually in Armenia)***

Literature Review

FDI's Impact:

01.

Boosts productivity (Javorcik, 2004) and reduces barriers to entry (Meyer & Sinani, 2009).

02.

Drives economic growth in key sectors like manufacturing (Scholer-Jordanashvili, 2021).

03.

Enhances industrial growth in Armenia but faces institutional challenges (Hakhnyan, 2013).

Key Insight: FDI creates conditions for entrepreneurship and new company formation, especially with improved institutional quality.

Data Preparation

1. Taxpayer classification

2 columns : Code, Description

Source: ARMSTAT

2. All Armenian taxpayers until today

Columns • 'ՀՎՀՀ'
• 'Անվանում'
• 'Կազմակերպա-իրավական տեսակ'
• 'Իրավաբանական հասցե',
765510 observations

Source: can't be identified

3. Foreign investments

4 columns : Year, Type, Type of activity,
Investment , Country

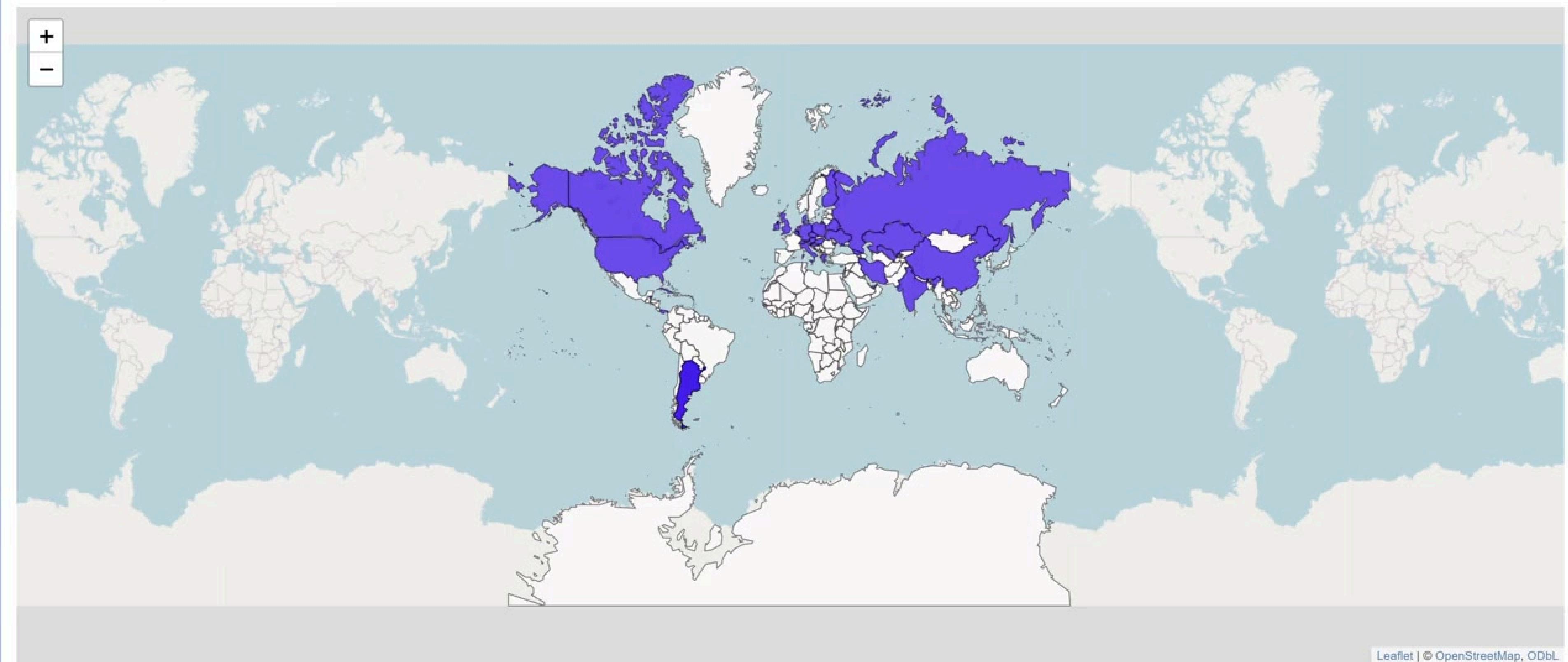
All Armenian Taxpayers Dataset:

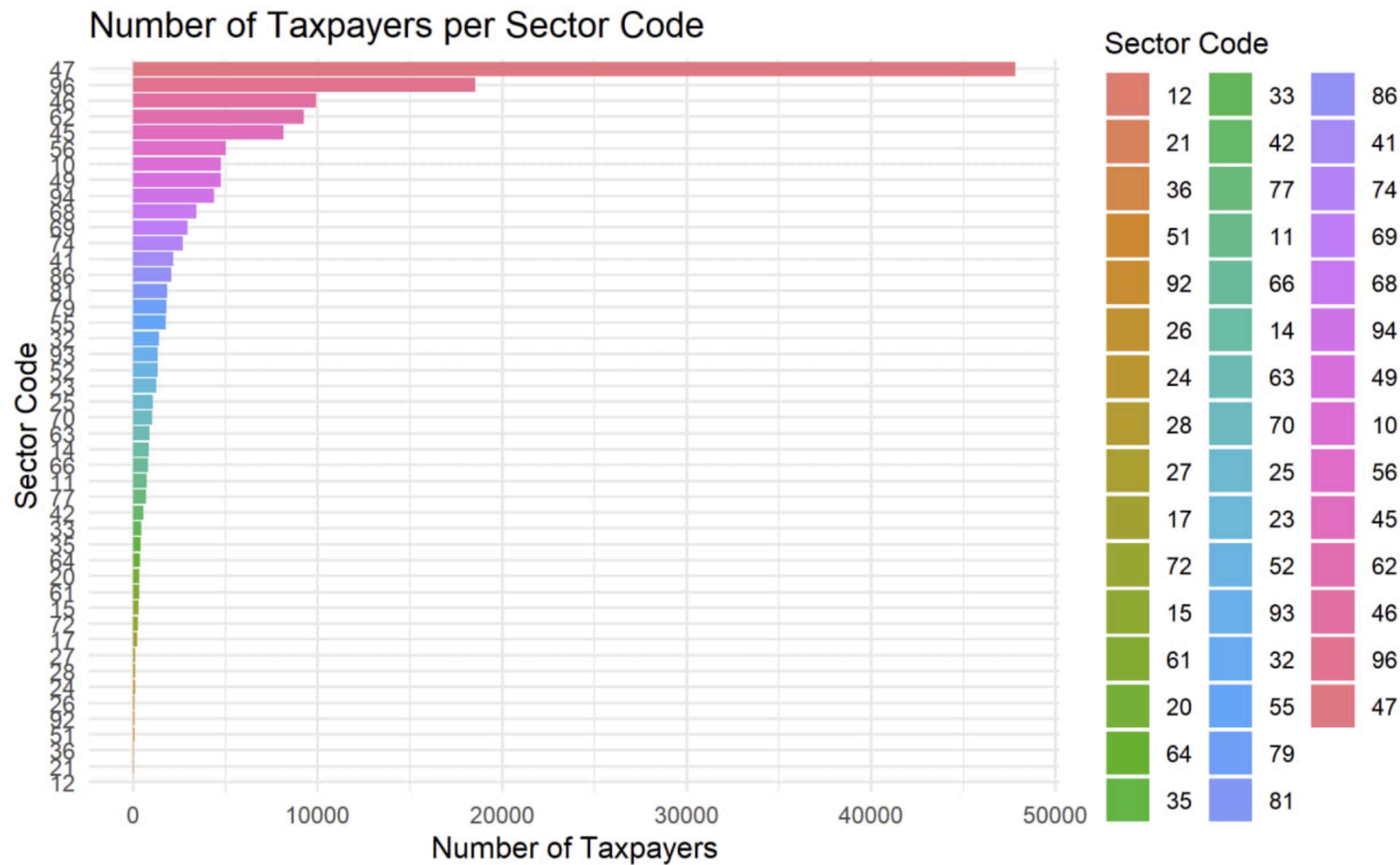
- Cleaned with Python (standardized columns, filtered active taxpayers, removed irrelevant data).

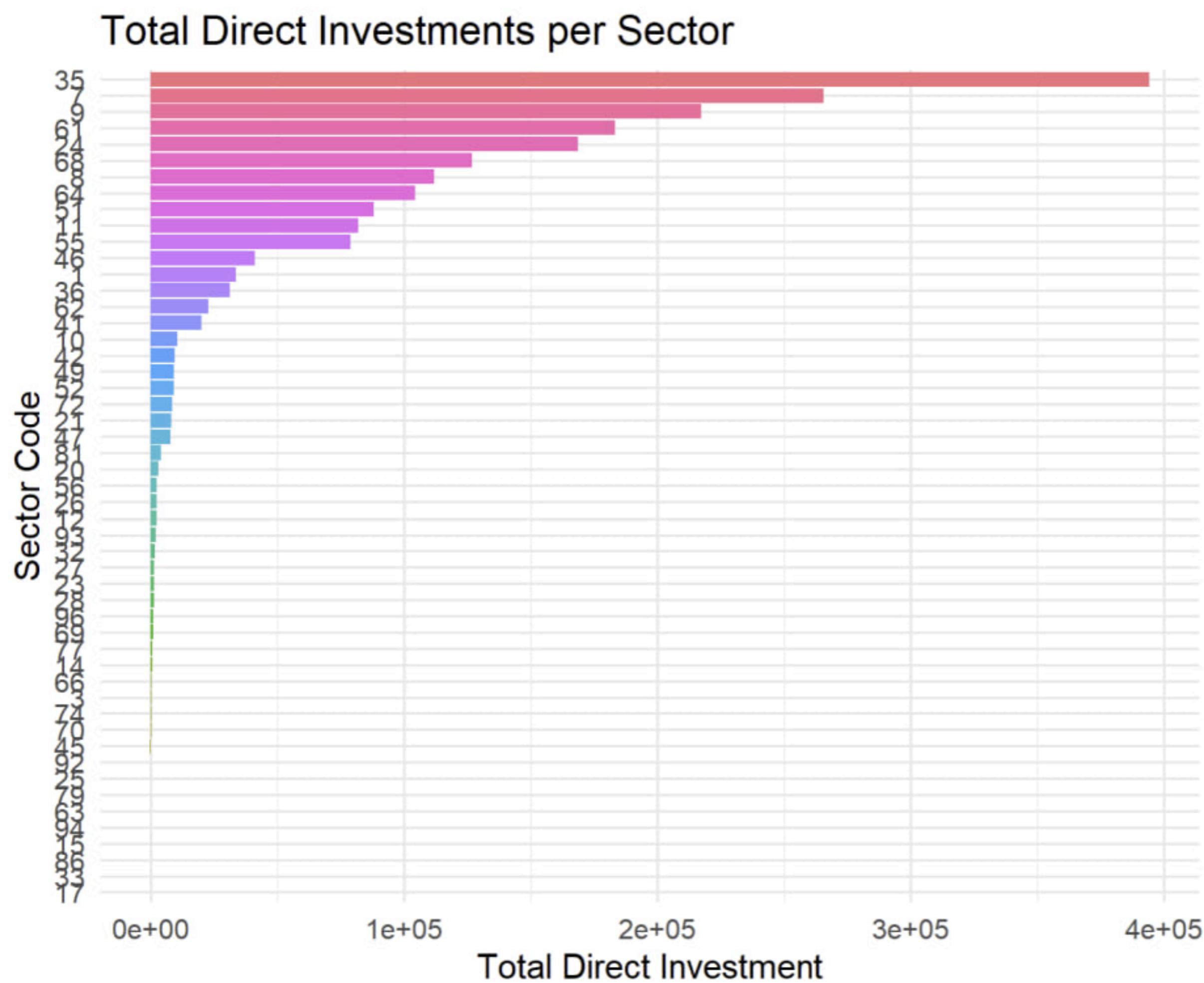
Foreign Investments Dataset:

- Retained essential columns (year, type of investment, activity, investment amounts).

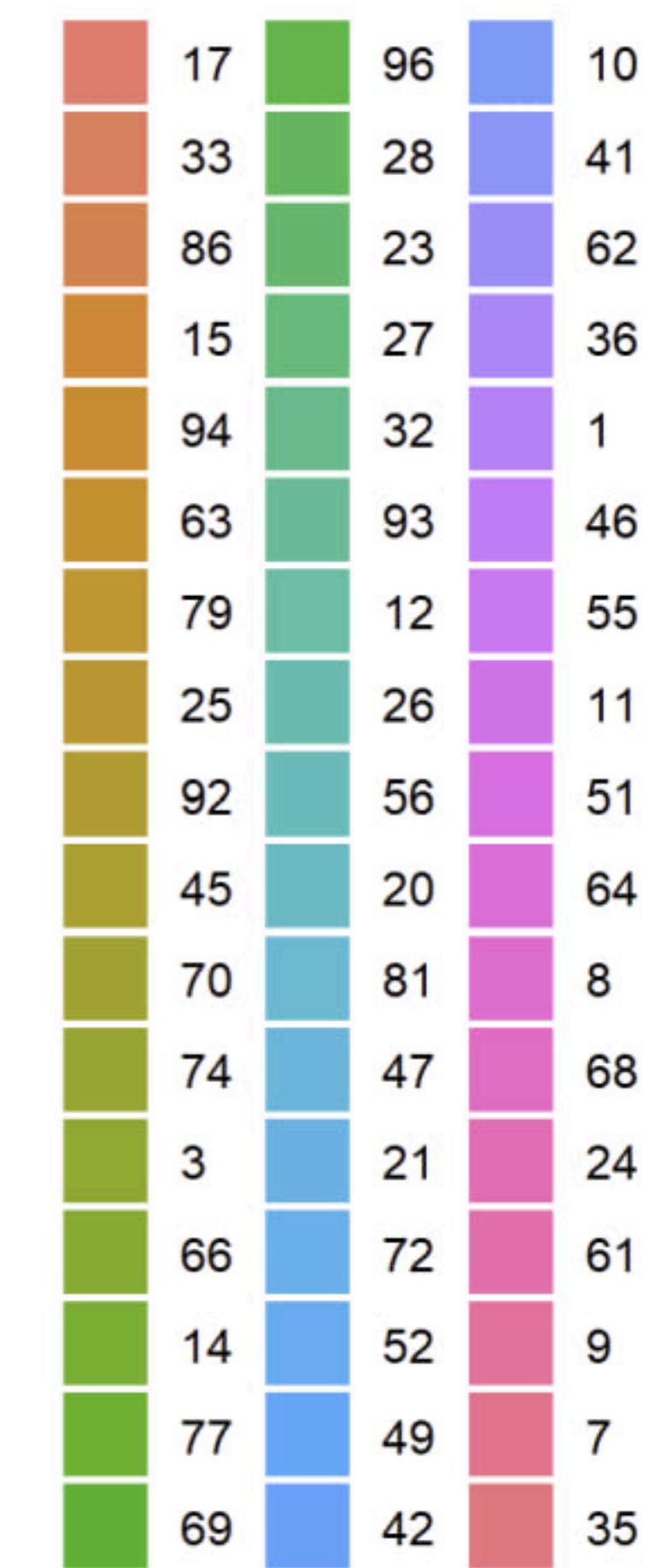
World Map with Direct Amounts

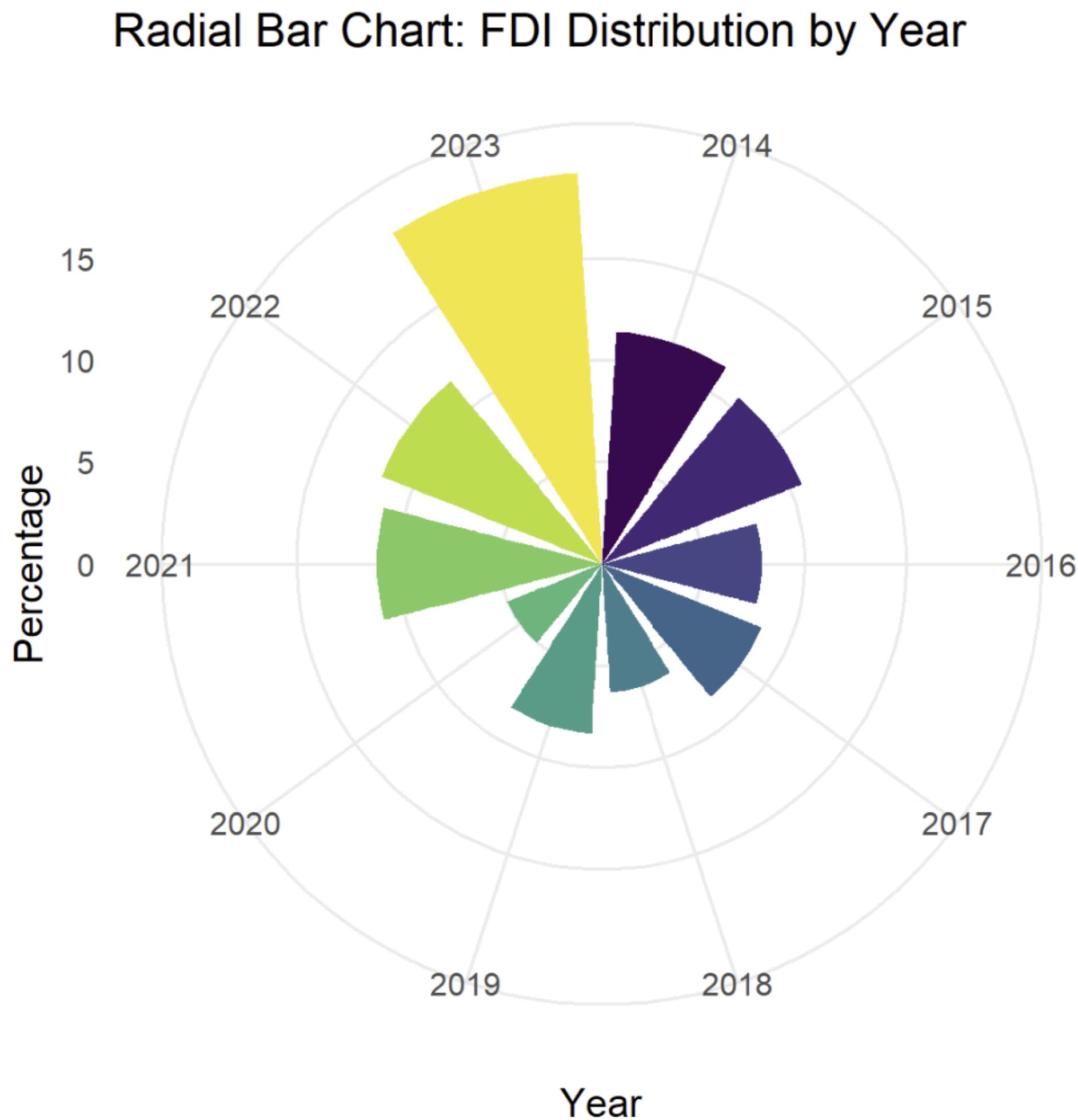




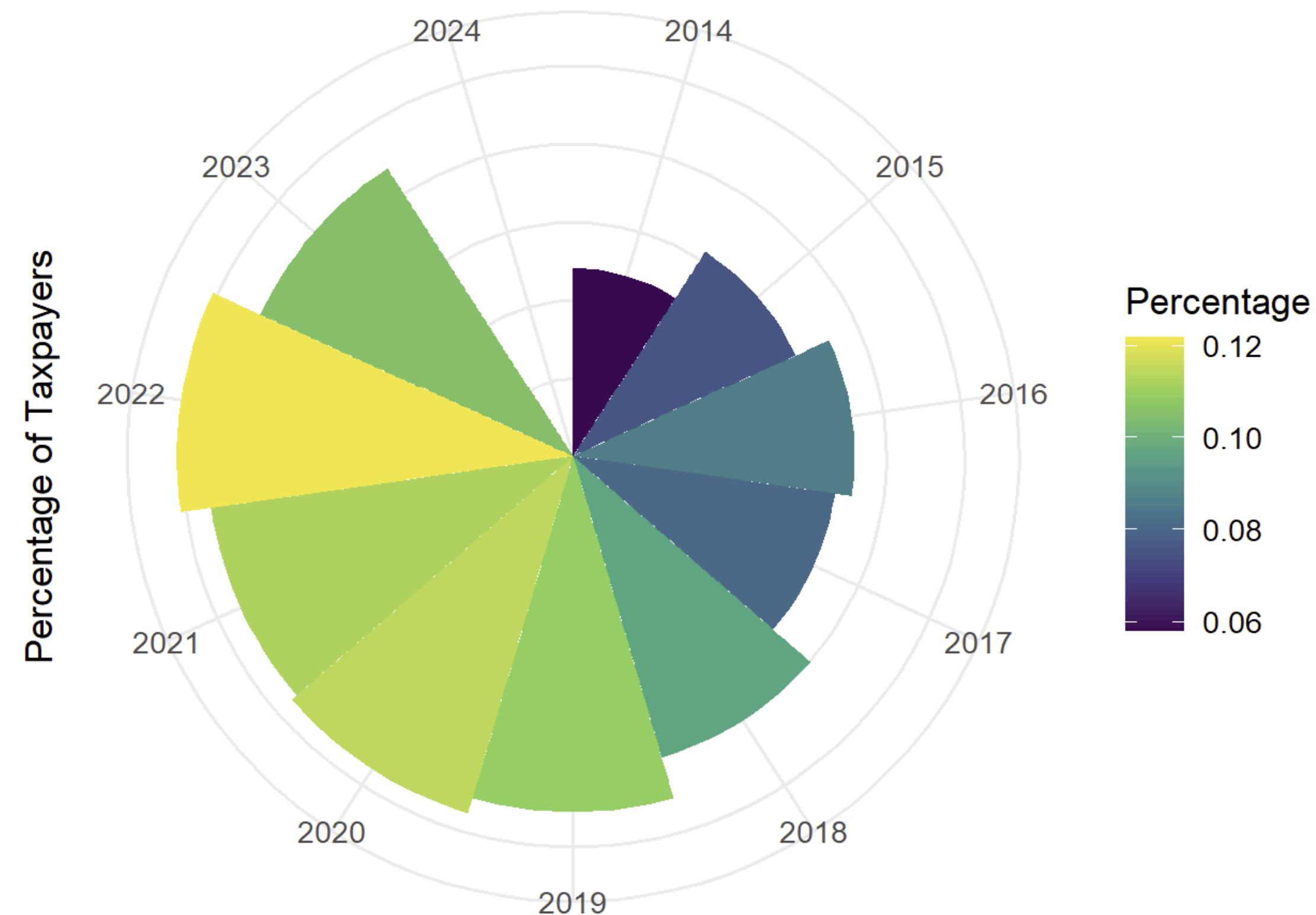


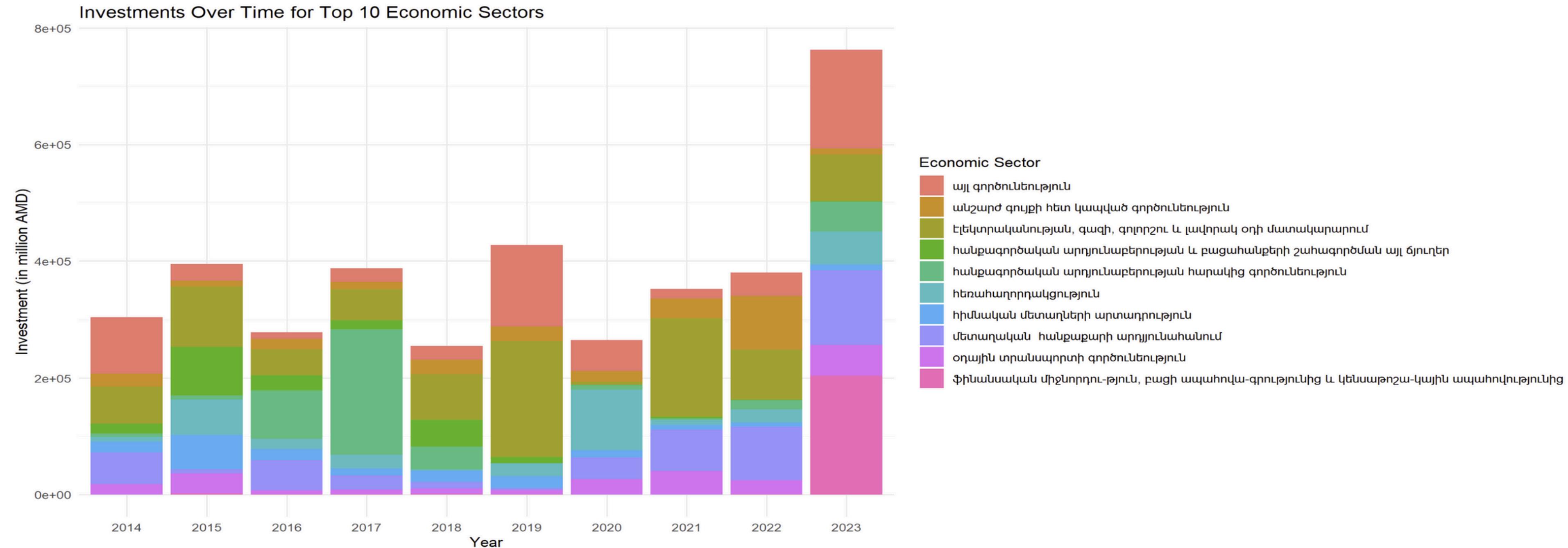
Sector Code





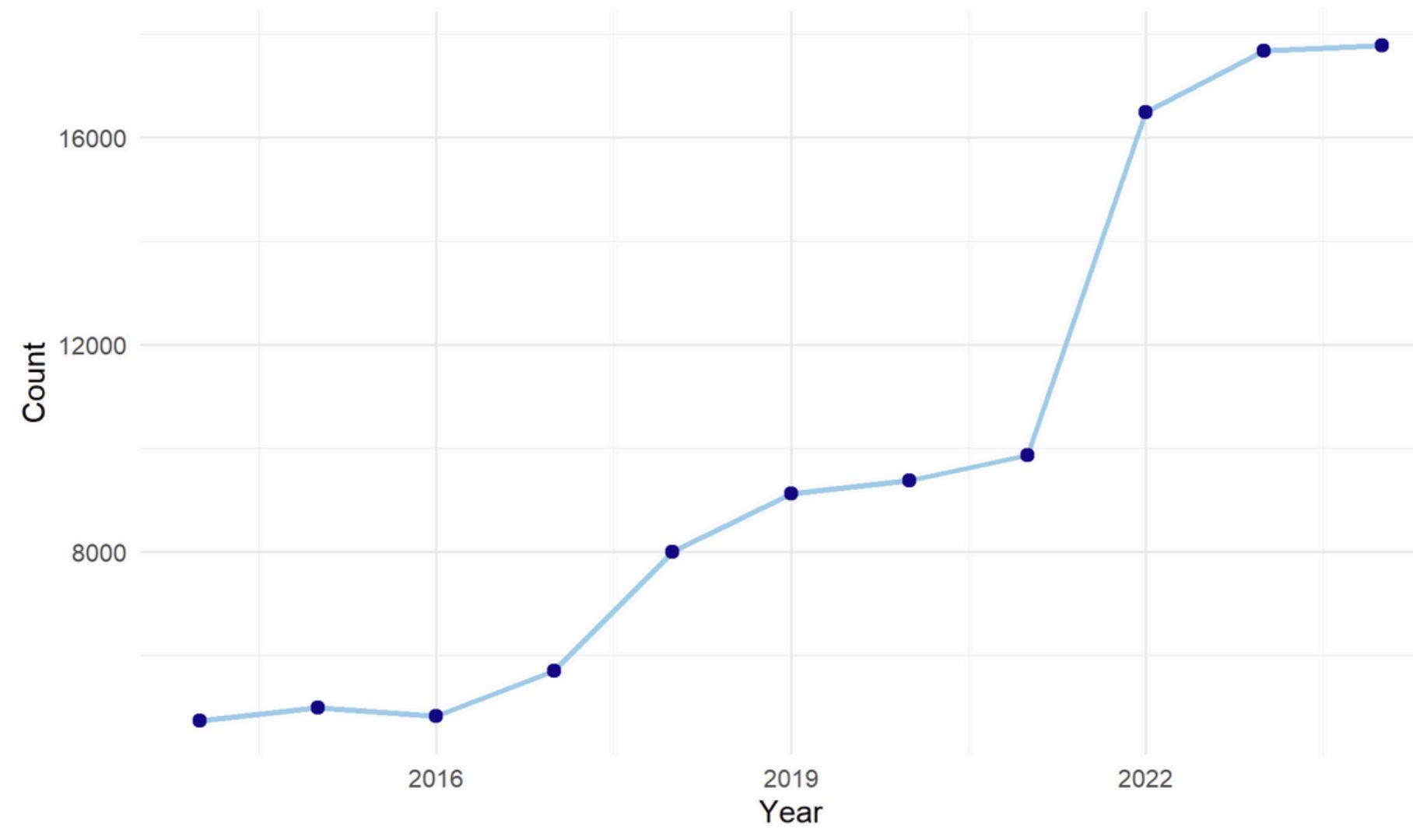
Radial Bar Chart: Taxpayer Distribution by Year



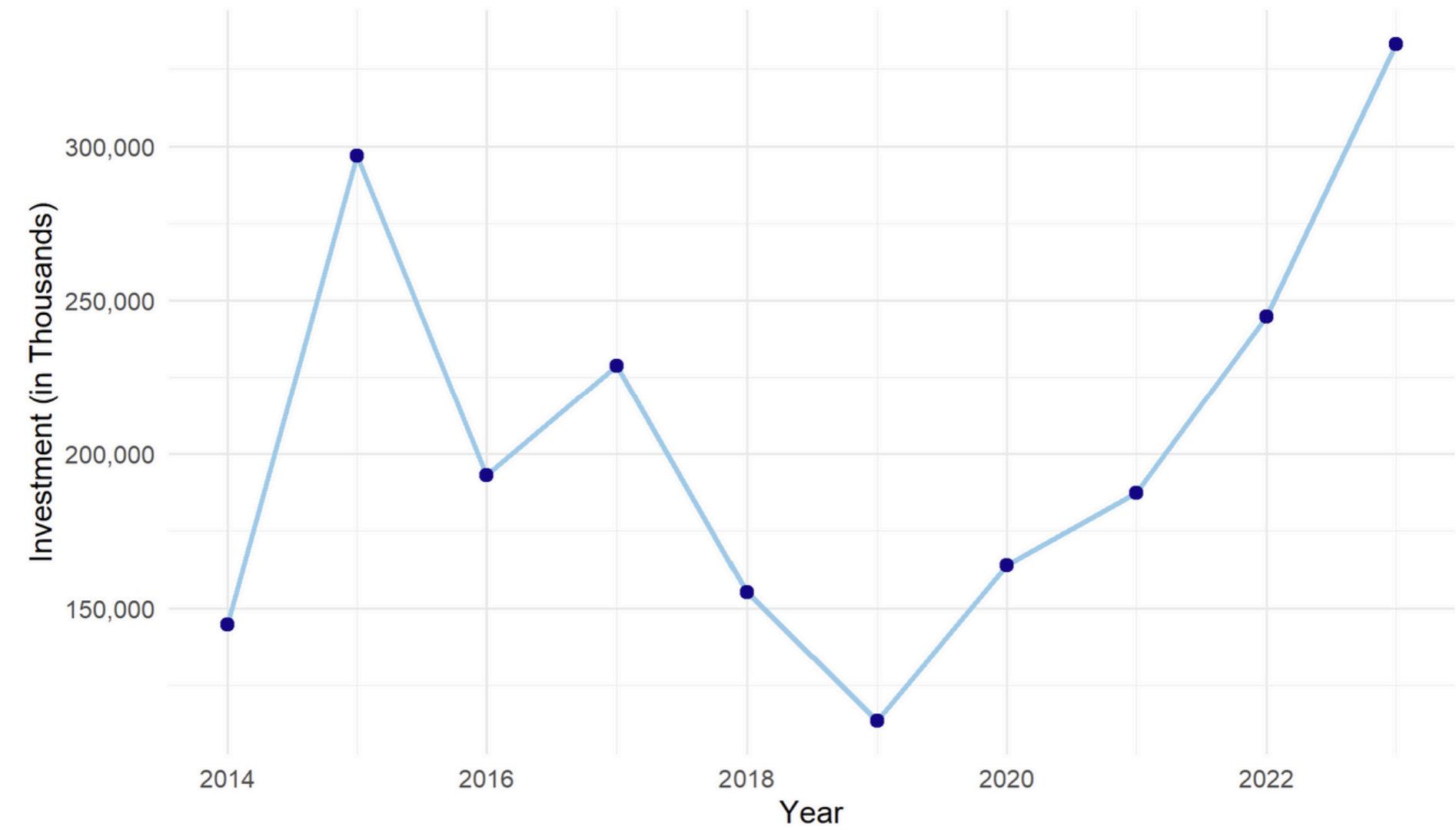


Comparison

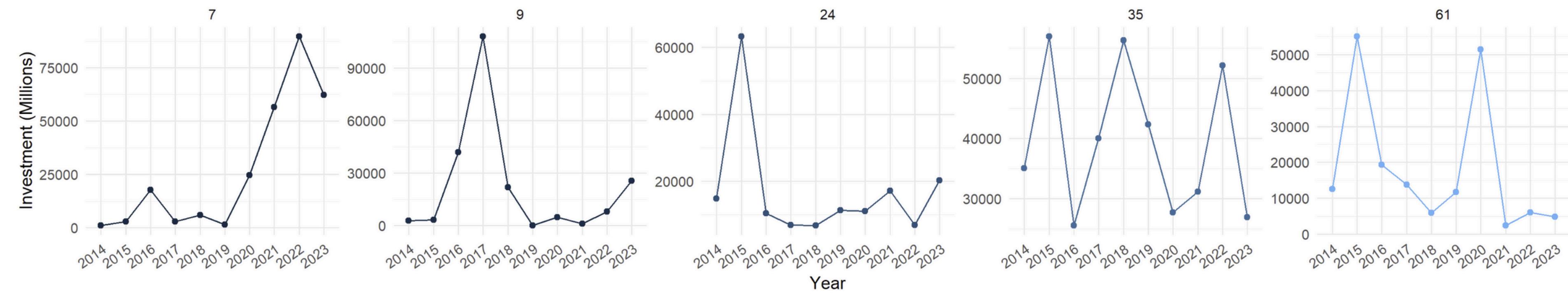
Number of Registered Taxpayers Over Time



Total Investments Over Time



Yearly Direct Investments from 2014 for Selected Sectors



Mining of metal ores

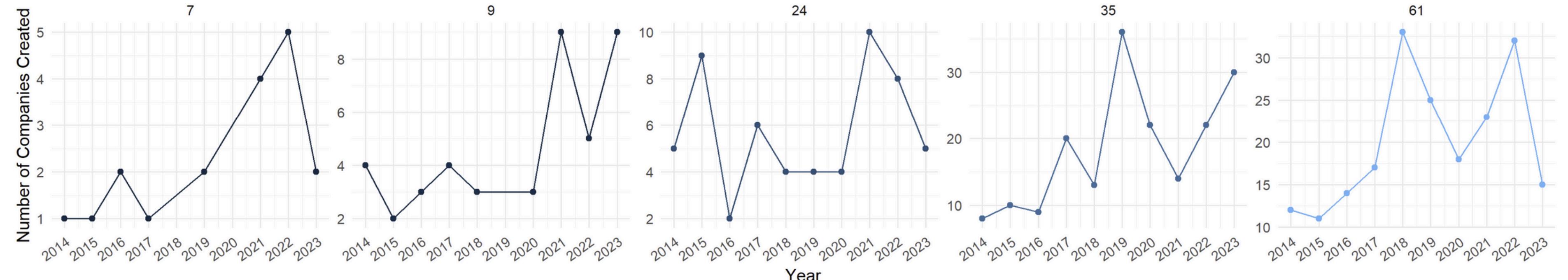
Mining support service activities

Manufacture of basic metals

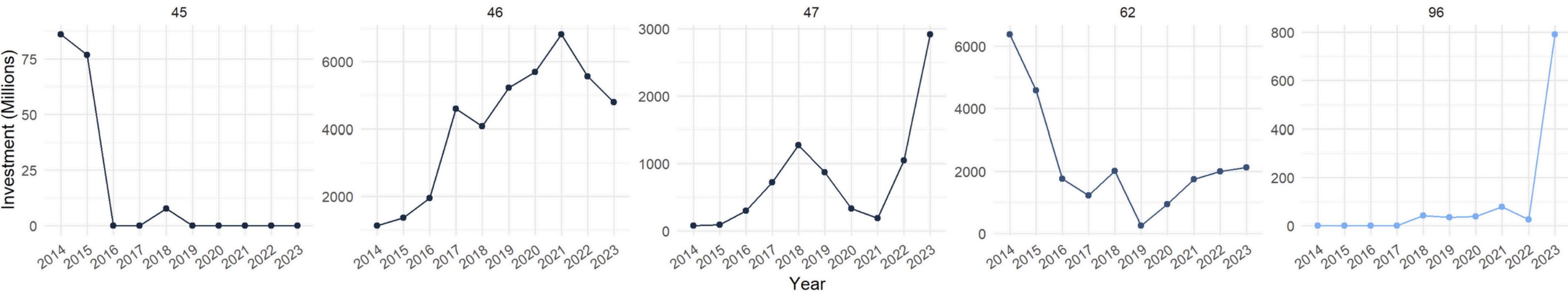
Electricity, gas, steam, and conditioning supply

Telecommunications

Yearly Company Creation from 2014 for Selected Sectors



Yearly Direct Investments from 2014 for Selected Sectors



Wholesale and retail trade and repair of motor vehicles and motorcycles

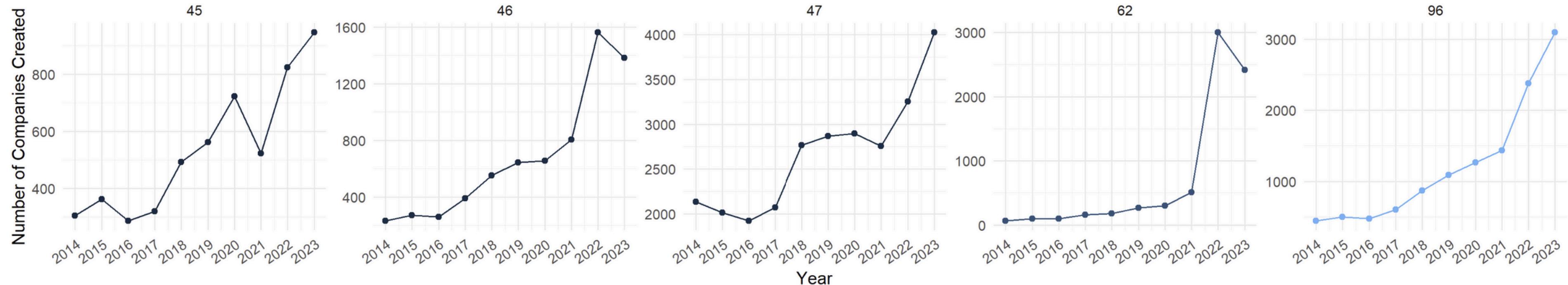
Wholesale, trade, except of motor vehicles and motorcycles

Retail trade,except motor vehicles and motorcycles

Computer programming, consultancy, and related activities

Other personal service activities

Yearly Company Creation from 2014 for Selected Sectors



Conclusion

Findings:

- Strong correlation in IT, retail trade, personal services, and mining.
- Weak or inconsistent trends in electricity and basic metals.
- Motor vehicle trade shows growth independent of FDI.

Outcome:

The hypothesis is partially accepted.





THANK YOU

Questions?