Relationship between Economic Development and Intellectual Production

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Plan

- Brief information about related concepts
- Methodology
- Research questions
- Data sources
- Findings
- Conclusion

Economic Development

Economic Development and Democracy Reconsidered

LARRY DIAMOND
Hoover Institution, Stanford University

Natural resources, education, and economic development

Thorvaldur Gylfason[1]

Geography and Economic Development

John Luke Gallup[1],
Jeffrey D. Sachs[2] and
Andrew D. Mellinger[3]

China, Economic Development and Mortality Decline

Judith Banister
Xiaobo Zhang
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DOI: 10.1016/j.worlddev.2004.09.003

Tourism and economic development: A survey

M. Thea Sinclair [a]

Women's Work and Economic Development

Kristin Mammen and Christina Paxson

MARKETING AND ECONOMIC DEVELOPMENT

PETER F. DRUCKER
Montclair, New Jersey

ECONOMIC DEVELOPMENT AND ENVIRONMENTAL QUALITY: AN ECONOMETRIC ANALYSIS

By NEMAT SHAFIK
The World Bank, 1818 The H Street NW, Washington, DC 20433, USA

Education, globalization and economic development

Phillip Brown
University of Kent at Canterbury
Hugh Lauder
University of Bath

Methodology

- OECD countries
- Data coverage 1981-2010
- Normalization process
- “Intellectual production”
  - Number of publications
  - National patents
  - Triadic patents
- Economic development indicators
  - R&D expenditures
  - GDP

Research Questions

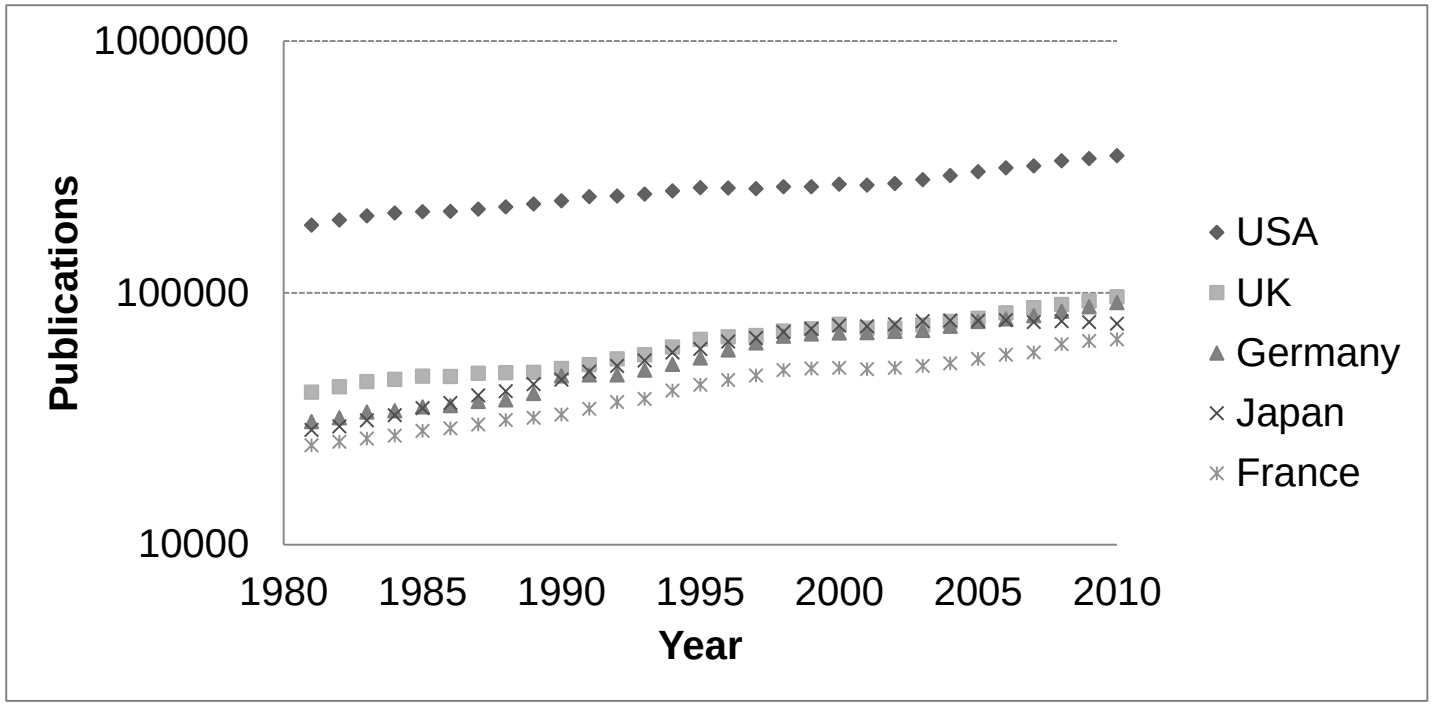
- Is there any meaningful relationship between GDP and the number of patents (national and triadic)?
- Is there any meaningful relationship between GDP and the number of scientific publications?
- Is there any correlation between R&D expenditures and patent production?
- Is there any correlation between R&D expenditures and the number of scientific publications?

Data Sources

- OECDiLibrary's National Accounts, Main Science and Technology Indicators
- OECD Patent Statistics
- Thomson Reuters' InCites

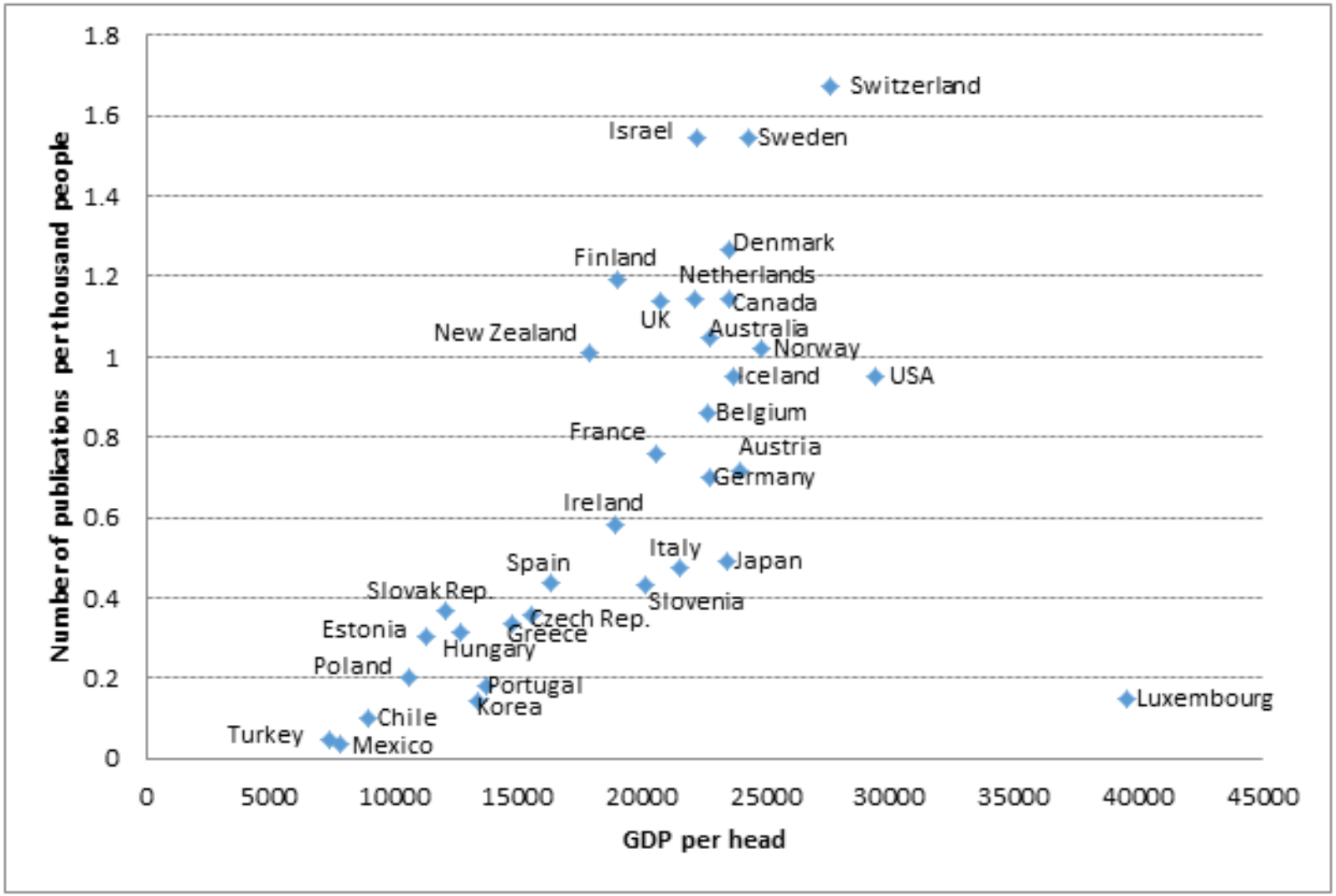
Findings

The Most Productive Countries

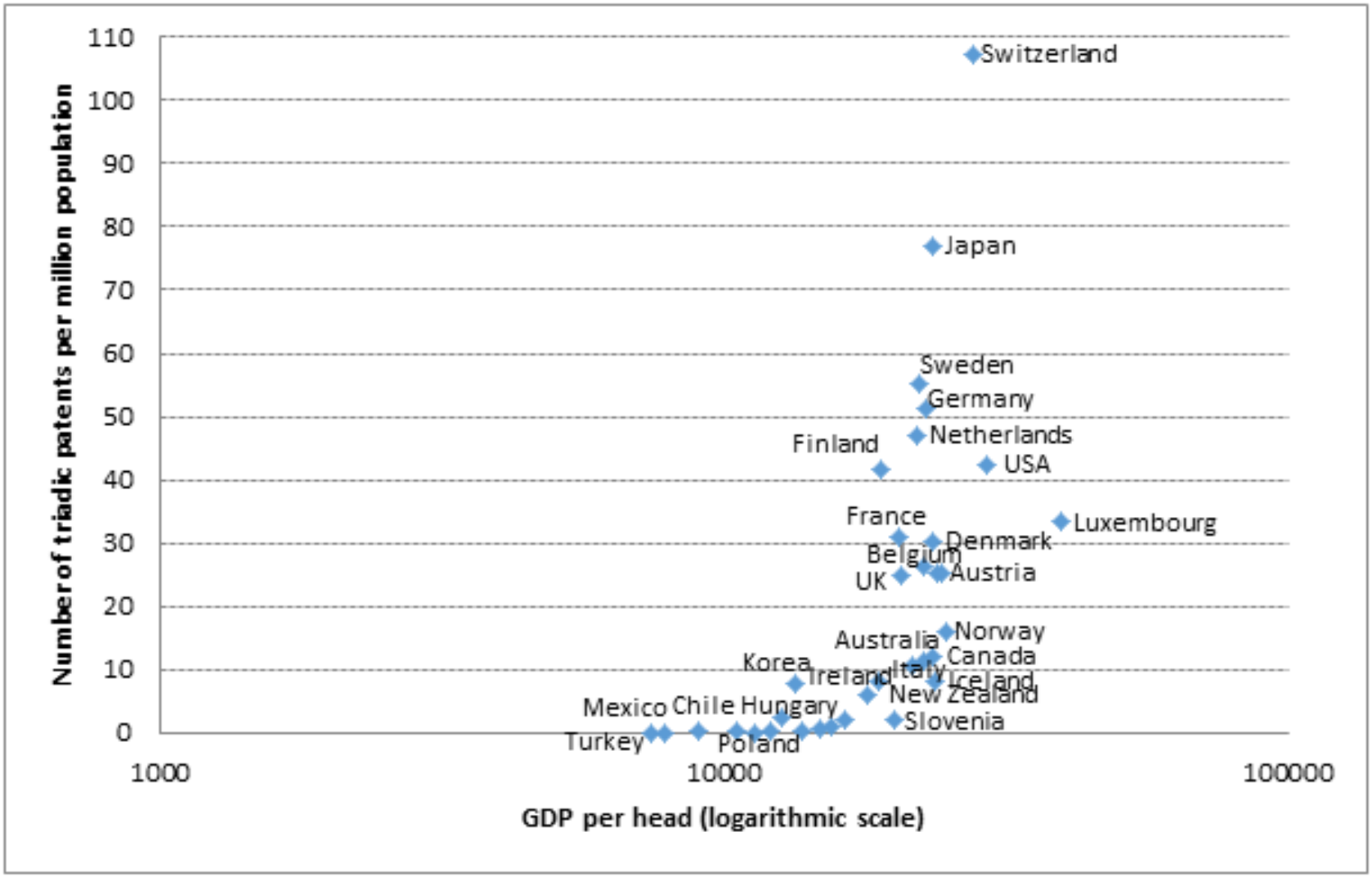


	Periods					
Countries	*1981-1985*	*1986-1990*	*1991-1995*	*1996-2000*	*2001-2005*	*2006-2010*
France	132,255	155,129	193,356	241,844	258,656	307,133
Germany	165,666	197,023	251,162	328,050	361,529	423,944
Japan	156,819	205,040	271,717	346,284	381,107	383,844
UK	219,062	241,188	289,777	352,238	375,505	450,002
USA	1,000,825	1,102,604	1,245,611	1,318,469	1,416,532	1,660,017

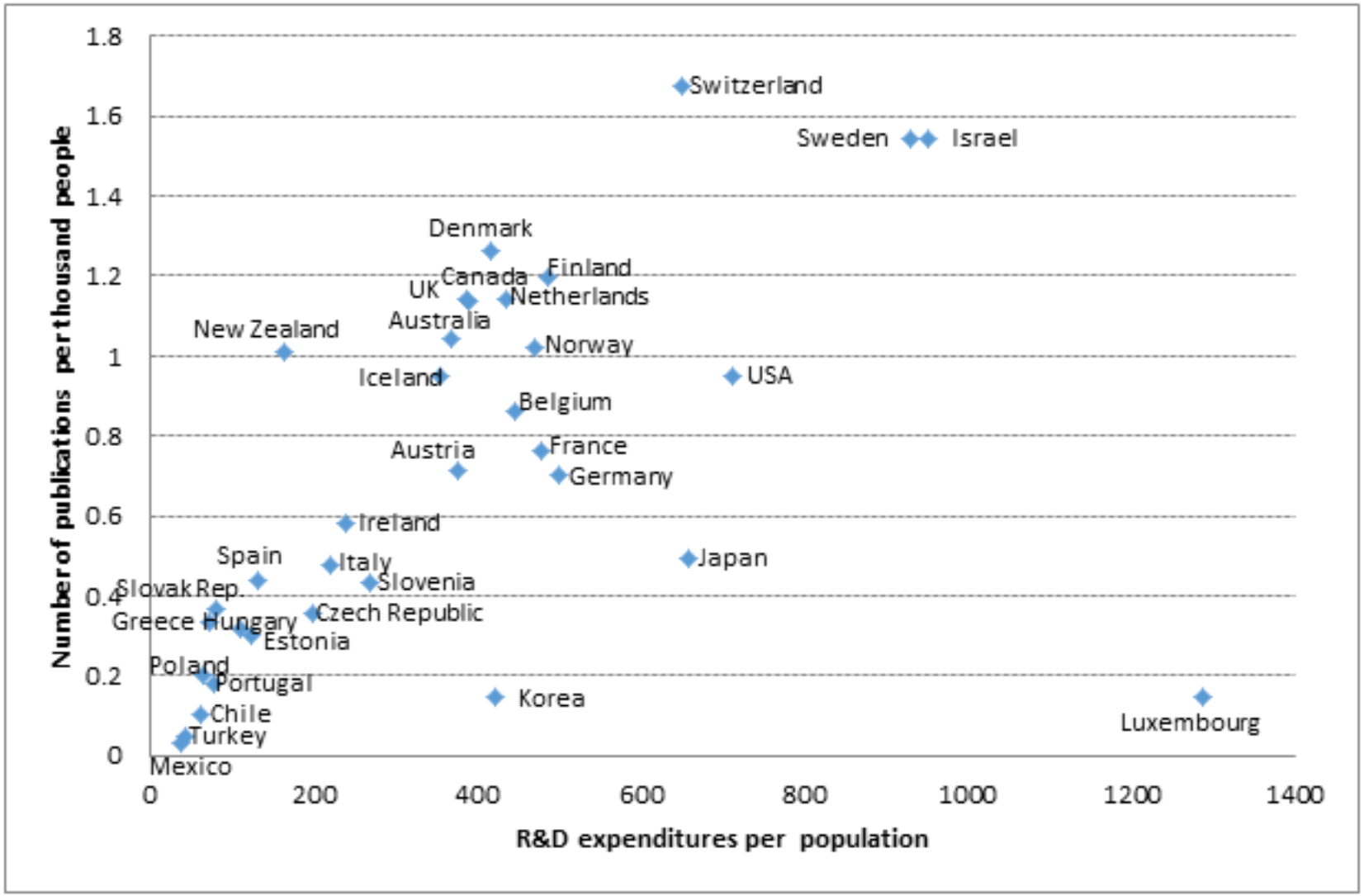
of Publications per Thousand People and GDP per Head



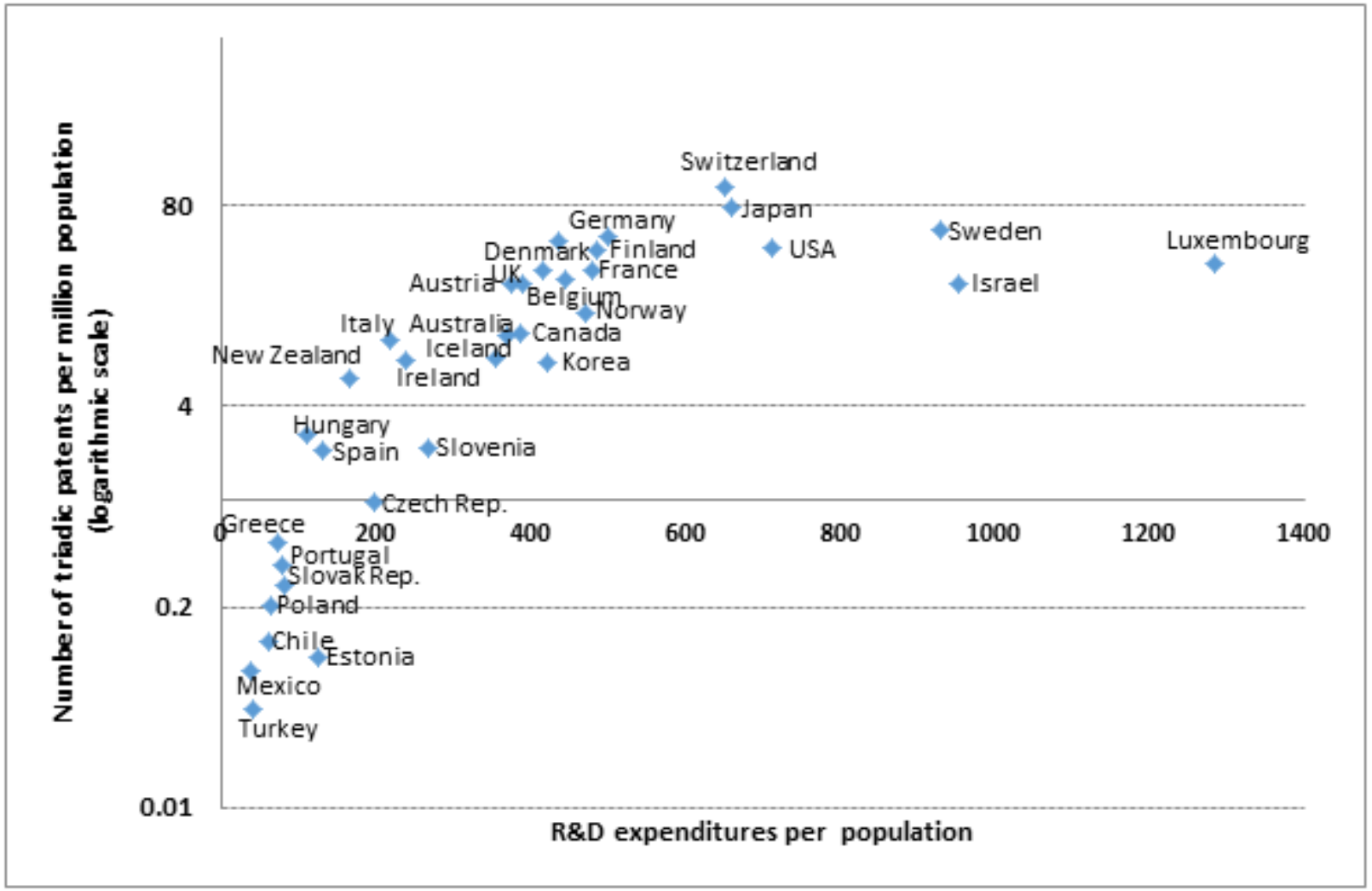
of Triadic Patents per Million Population and GDP per Head



of Publications per 1000 People and R&D Expenditures per Population



of Triadic Patents per Million Population and R&D Expenditures per Population



Correlations among Variables

	Intellectual production indicators		
Economic development indicators	*Number of publications per population*	*Number of triadic patents per million population*	*Number of national patents per million population*
GDP per head	0.561	0.604	0.567
R&D expenditures per population	0.524	0.667	0.674

Note: Correlations are significant at the 0.01 level.

There are positive correlations:

1- GDP per head and the number of publications per population
2- GDP per head and the number of triadic patents per million population
3- GDP per head and the number of national patents per million population
4- R&D expenditures per population and the number of publications per population
5- R&D expenditures per population and the number of triadic patents per million population
6- R&D expenditures per population and the number of national patents per million population

Conclusion

- Countries show continuous improvement in years, both for economic development indicators and intellectual production indicators
- Inequalities
  - National incomes
  - R&D expenditures

Conclusion

- Innovations
  - Scandinavian countries distinctively separated from other countries especially in terms of the number of national patents per population
  - Leading countries for number of triadic patents per population => Switzerland and Japan
- # of publications per population ranking
  - Upstairs => Switzerland, Sweden, Israel, Denmark and Finland
  - Downstairs => Luxembourg, Korea, Chile, Turkey and Mexico

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