

Applications of Panel Data Analysis: research on firm performance, entrepreneurial finance and innovation

June 16th-17th, 2016, Milan



POLITECNICO
MILANO 1863

DIPARTIMENTO DI
INGEGNERIA GESTIONALE



RISIS

Research infrastructure for research
and innovation policy studies



SEVENTH FRAMEWORK
PROGRAMME

Aim of the course

- The course will introduce the properties of **panel-data regression models**, such as:
 - Fixed effect
 - Random effects
 - Dynamic panel data models
- **Practical exercises** based on an extraction from the VICO Updated database
- **Learning objective:**
 - To have a basic knowledge on how to apply econometric techniques for panel data and on how to interpret panel-data regression estimates

The RISIS project

- This course is part of the Training Activities of the RISIS Project



RISIS

Research infrastructure for research
and innovation policy studies



- The overall objective of the project is to build a **distributed infrastructure on data relevant for research and innovation dynamics and policies**
- Data on:
 - European research projects
 - Firm dynamics (e.g. VICO Updated)
 - Public sector research
 - Research careers
 - Innovation policy

<http://risis.eu/>

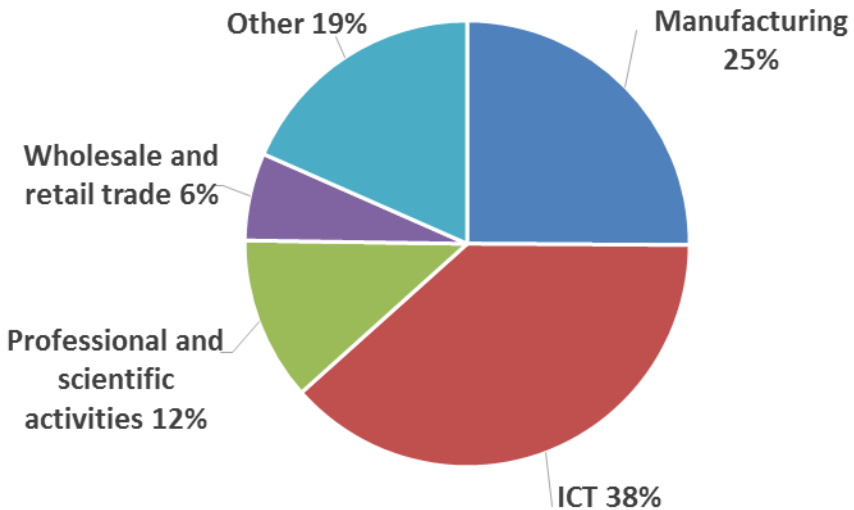
VICO Updated (VICO 2.0)

- The VICO Updated database contains geographical, industry, financial and accounting information on companies
 - Founded starting from 1/1/1988
 - That have received at least one venture capital or angel investment starting from 1/1/1998
 - Operating Belgium, Finland, France, Germany, Italy, Spain, and the United Kingdom and Israel
- It provides information on
 - **17,863 companies**
 - **7,834 investors**
 - **52,657 investments** (company-investor-round dyads)
- New release of the database with patenting activity of companies in 2017
- Data are organized in 4 tables (General Company Information, Accounting, Investment, Investor)

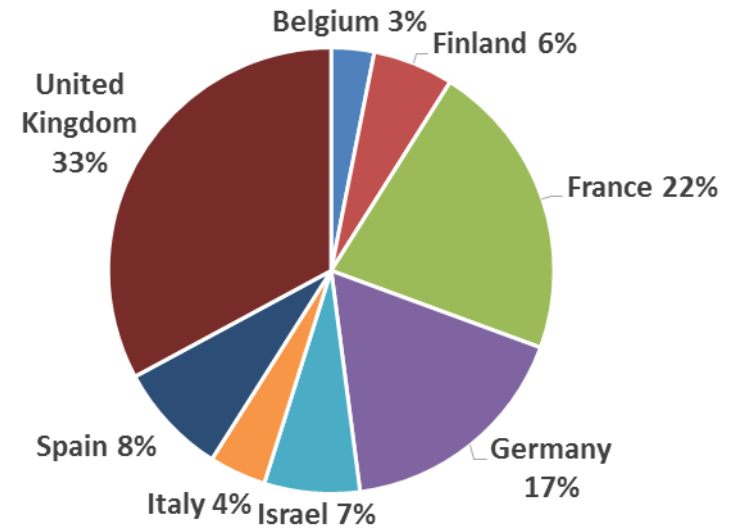
VICO Updated (VICO 2.0)

Some descriptive statistics – Companies

Industry



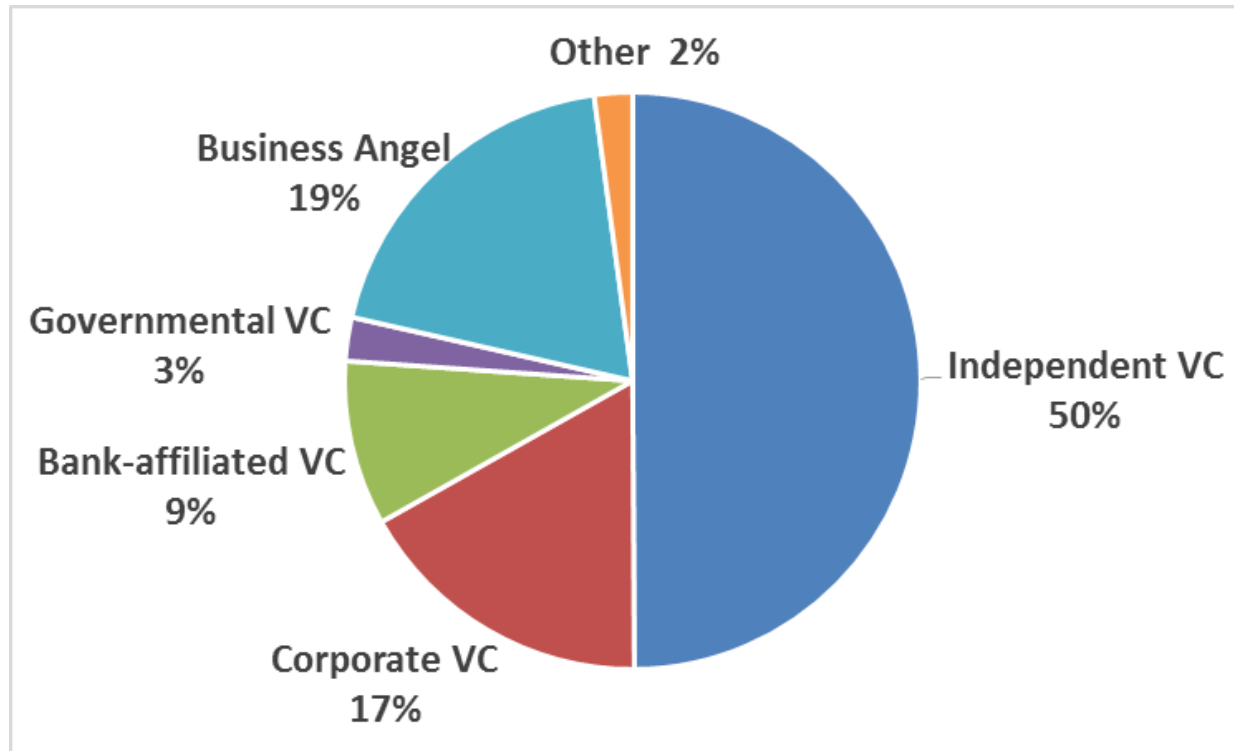
Country



VICO Updated (VICO 2.0)

Some descriptive statistics – Investors

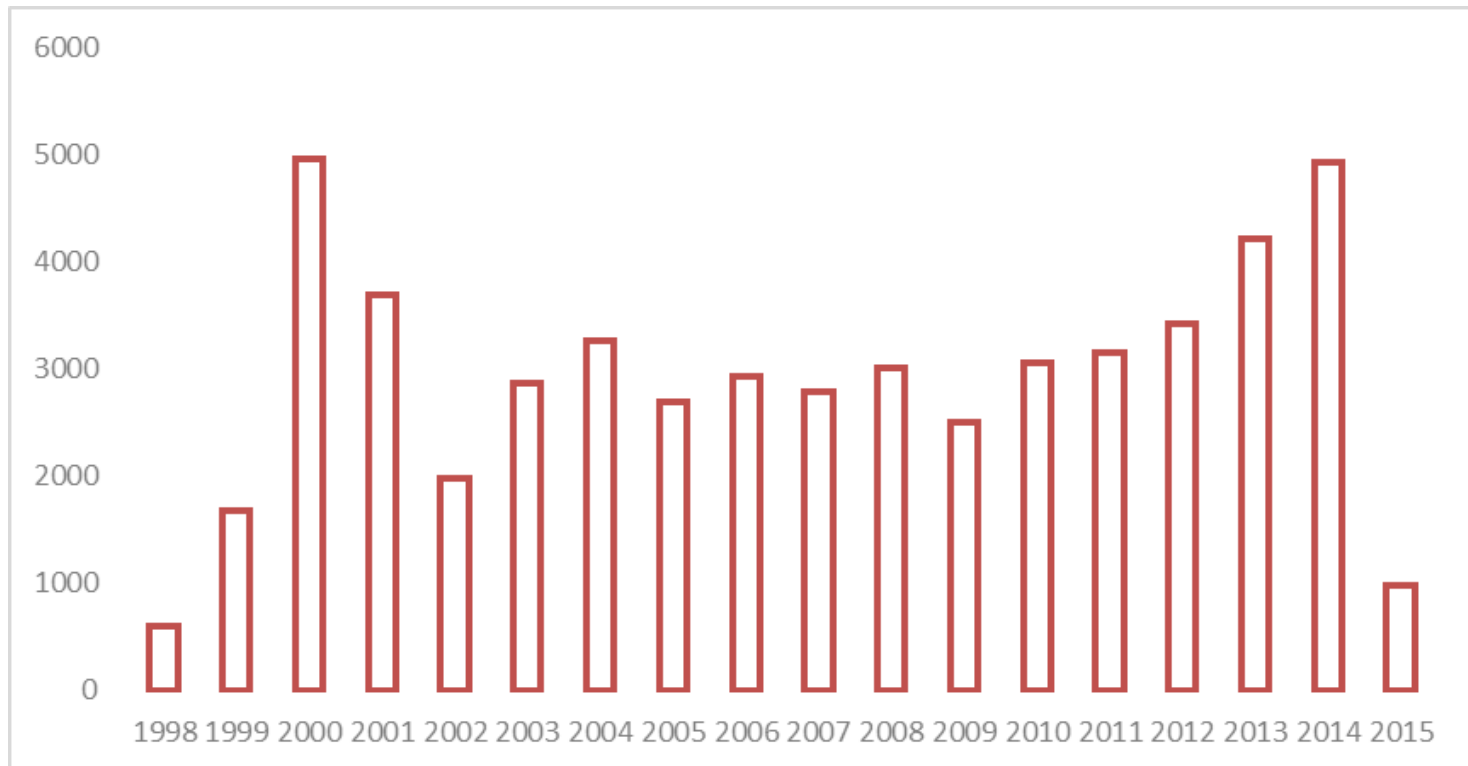
Investor type



VICO Updated (VICO 2.0)

Some descriptive statistics – Investments

Number of investments



VICO Updated (VICO 2.0)

Panel data structure

CompanyID	Year	CompanyFour	CompanyAge	SalestheEUR	IVC_year_ti	IVC_step
VICO1002	2005	2000	5	2631.492	2006	0
VICO1002	2006	2000	6	4619.752	2006	1
VICO1002	2007	2000	7	5634.971	2006	1
VICO1002	2008	2000	8	5312.515	2006	1
VICO1002	2009	2000	9	5569.222	2006	1
VICO1002	2010	2000	10	7693.521	2006	1
VICO1002	2011	2000	11	9660.983	2006	1
VICO1002	2012	2000	12	13165.962	2006	1
VICO1002	2013	2000	13	15690.056	2006	1
VICO10026	2007	2007	0	0	2011	0
VICO10026	2008	2007	1	156.8	2011	0
VICO10026	2009	2007	2	186.407	2011	0
VICO10026	2010	2007	3	102.057	2011	0
VICO10026	2011	2007	4	322.563	2011	1
VICO10026	2012	2007	5	452.913	2011	1
VICO10026	2013	2007	6	341.721	2011	1

Research using VICO

- The first release of VICO has been developed during a previous FP7 project
 - 15 academic articles has been published (see the next slide for the references)
 - Most of them use panel data regression techniques
- Some examples of **research questions** that can be addressed with VICO
Updated:
 - Geographical clustering of Venture Capital activity
 - Informal Venture Capital (angel finance) and impact on start-up's growth, survival, and successful exit
 - Differences among investor's types and impact on start-up's performance
 - Impact of Venture Capital during the crisis

Research using VICO

References

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VICO Updated Infrastructure

Access conditions

- The database is located at Politecnico di Milano, Milan
- The access is 'on site' only
 - If you are interested in using the database, go to <http://datasets.risis.eu/> and apply for a site visit
- Detailed information on the rules for visits are available at <http://risis.eu/risis-registration/>

Course Program

JUNE 16th, 2016

10.00 – 10.30 Introduction

10.30 – 11.30 Conceptual bases of Panel Data Analysis

11.30 – 13.00 Applications to firm-level data

13.00 – 14.00 Lunch

14.00 – 16.30 Panel Data Analysis with STATA

16.30 – 17.00 Coffee break

17.00 – 18.00 Presentation of group exercise

JUNE 17th, 2016

9.00 – 11.00 Group work session

11.00 – 11.30 Coffee break

11.30 – 13.00 Group work session

13.00 – 14.00 Lunch

14.00 – 15.30 Group presentations

15.30 – 16.00 Recap