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## **Federico Ciliberto**

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### **PERSONAL**

Citizenship: Italy and United States.

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### **EDUCATION and RESEARCH INTERESTS**

#### **Education**

PhD, Economics, Northwestern University, May 2001.

Thesis Committee: John Panzar (Chair), David Dranove, Joel Mokyr, and Robert Porter.

Title of the Dissertation: "Studies on the Vertical Organization of Industries."

Laurea in Economia e Commercio, *magna cum laude*, Università di Firenze, Italy, June 1993.

#### **Research Areas**

Primary: Industrial Organization, Economics of Advertising, Economics of the Airline Industry.

Secondary: Applied Econometrics, Health Economics, Economic History.

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### **EMPLOYMENT**

#### **Permanent Positions**

Professor, Department of Economics, University of Virginia, 2018 – current.

Associate Professor, Department of Economics, University of Virginia, 2011 –2018.

Assistant Professor, Department of Economics, University of Virginia, 2004 – 2011.

Assistant Professor, Department of Agricultural and Resource Economics, North Carolina State

University, 2002 – 2004.

Assistant Professor, Department of Economics, Florida International University, 2001–2002.

### **Visiting Positions**

Economist, Department of Justice, US, Fall 2016.

VELUX Visiting Professor (the Villum Kann Rasmussen Foundation), Aarhus University, 2013-2014.

Visiting Scholar, Université de Cergy-Pontoise, THEMA, June 2010; June 2011.

Visiting Scholar, Aarhus University, Denmark, August 2009; June 2011; May 2012.

Visiting Scholar, Center for the Study of Industrial Organization, Northwestern Univ., 2008.

Visiting Scholar, Department of Management and Strategy, Kellogg Graduate School of Management, Northwestern University, May-June 2002.

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### **AFFILIATIONS**

Research Fellow, DIW Berlin (The German Institute for Economic Research), 2016-current.

Research Fellow, Centre for Economic Policy Research, London, 2012-current.

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### **PUBLICATIONS**

#### **Refereed Publications**

“Coordinated Capacity Reductions and Public Communication in the Airline Industry,” with Gaurab Aryal (University of Virginia) and Ben Leyden (University of Virginia). Forthcoming in the *Review of Economic Studies*.

“Market Structure and Competition in Airline Markets,” with Charles Murry (Boston College) and Elie Tamer (Harvard University), *Journal of Political Economy*, Volume 129, Number 11, November 2021.

“Superstar Exporters: An Empirical Investigation of Strategic Interactions in Danish Export Markets,” with Ina Charlotte Jäkel (Aarhus University, Denmark), *Journal of International Economics*, Volume 129, March 2021.

- “Valuing Product Innovation: Genetically Engineered Varieties in US Corn and Soybeans,” with GianCarlo Moschini (Iowa State University), and Edward Perry (Kansas State University). *Rand Journal of Economics*, 2019, Vol. 50, Issue 3, Pages 615-644. This article is the winner of the 2020 *Quality of Research Discovery Award* awarded by the Agricultural and Applied Economic Association.
- “Network Structure and Consolidation in the Us Airline Industry, 1990-2015,” with Emily Cook (University of Virginia) and Jonathan Williams (UNC). *Review of Industrial Organization*, (2019) 54: 3.
- “Collusive pricing patterns in the US airline industry,” with Eddie Watkins (UNC) and Jonathan W. Williams (UNC), *International Journal of Industrial Organization*, Volume 62, 2019, Pages 136-157.
- “Multiple Equilibria and Deterrence in Airline Markets,” with Zhou Zhang (University of Virginia), *Economic Inquiry*, Volume 55, Issue 1, January 2017, Pp: 319-338.
- “Effects of Mergers and Divestitures on Airline Fares,” with Jonathan Williams (University of North Carolina) and Zhou Zhang (University of Virginia). *Transportation Research Record: Journal of the Transportation Research Board*, Issue 2603, 2017, Pages 98-104.
- “Genetically Engineered Crops and Pesticide Use in U.S. Maize and Soybeans,” with David A. Hennessy (Michigan State University), GianCarlo Moschini (Iowa State University), and Edward D. Perry (Kansas State University), *Science Advances*, 31 Aug 2016, Vol. 2, no. 8.
- “Push-Me Pull-You: Comparative Advertising in the OTC Analgesics Industry,” *CEPR Discussion Paper 8988*, with Simon Anderson (University of Virginia), Jura Liaukonyte (Cornell University), and Regis Renault (Université de Cergy-Pontoise), *Rand Journal of Economics*, Volume 47, Issue 4, Winter 2016, PP. 1029-1056.
- “Playing the Fertility Game At Work,” *CEPR Discussion Paper 9429*, with Amalia Miller (University of Virginia), Helena Skyt Nielsen and Marianne Simonsen (Aarhus University, Denmark), *International Economic Review*, Volume 57, Issue 3, August 2016, pages 827-856.
- “Does Multi-Market Contact Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry,” with Jonathan Williams (University of North Carolina), *The RAND Journal of Economics*, Volume 45, Issue 4, pages 764–791, Winter 2014.
- “Information Content of Advertising: Empirical Evidence from the OTC Analgesic Industry,” with Simon P. Anderson (University of Virginia), Jura Liaukonyte (Cornell University), *International Journal of Industrial Organization*, Volume 31, Issue 5, September 2013, Pages

355–367. [Lead Article].

- “Are the Bankrupt Skies the Friendliest?” with Carola Schenone (University of Virginia), *Journal of Corporate Finance* 18 (2012) 1217–1231.
- “Bankruptcy and Product-Market Competition in the Airline Industry,” with Carola Schenone (University of Virginia), *International Journal of Industrial Organization* 30 (2012), pp. 564-577.
- “Outsourcing and Vertical Integration in a Competitive Industry,” with John Panzar (University of Auckland), *Southern Economic Journal*, 2011, 77(4), 885-900.
- “Were British Cotton Entrepreneurs Technologically Backward? Firm-Level Evidence on the Adoption of Ring-Spinning,” *Explorations in Economic History*, Volume 47, Issue 4 (October 2010), pp. 487-504.
- “Limited Access to Airport Facilities and Market Power in the Airline Industry,” with Jonathan Williams (University of North Carolina). *The Journal of Law and Economics*, Volume 53, Number 3 (August 2010), pp. 467-495.
- “Public Policy and Market Competition: How the Master Settlement Agreement Changed the Cigarette Industry,” with Nick Kuminoff (Arizona State University), *The B.E. Journal of Economic Analysis & Policy: Vol. 10 : Iss. 1 (Frontiers)*, Article 63, 2010.
- “Market Structure and Multiple Equilibria in the Airline Industry,” with Elie Tamer (Harvard University), *Econometrica*, Vol. 77, No. 6, November, 2009, 1791-1828.
- “Exit from the Hospital Industry,” with Richard Lindrooth (University of Denver), *Economic Inquiry*, Volume 45, Issue 1, Pages 71-81, Jan 2007.
- “Does Organizational Form Affect Investment Decisions?,” *Journal of Industrial Economics*, Volume LIV, No. 1, March 2006, Pages 63-93.
- “The Effect of Physician-Hospital Affiliations on Hospital Prices in California,” with David Dranove (Northwestern University), *Journal of Health Economics*, Volume 25, Issue 1 , January 2006, Pages 29-38.
- “Tracking the Changing Provider Landscape: Implications for Health Policy and Practice,” with Gloria Bazzoli, Nicole Dubbs, Peter Kralovec, Stephen Shortell, *Health Affairs*, November/December 2001, Volume 20, Number 6, pp. 188-196.

## **Working Papers**

“The Expected Herfindahl-Hirschman Index: A Concentration Measure of Innovation Pipelines,” with Gaurab Aryal (UVA), Katya Khmel'nitskaya (UVA), and Margaret Kyle (MINES ParisTech).

“An Event Study Approach to Valuing Pharmaceutical Drugs and Patents,” with Gaurab Aryal (UVA), Leland Farmer (UVA), and Katya Khmel'nitskaya (UVA).

“Common-Subcontracting and Multimarket Contact in the Airline Industry,” with Gaurab Aryal (UVA), Dennis Campbell (UVA), and Katya Khmel'nitskaya (UVA).

## **Work in Progress**

"The Collapse of Dialogue? Evidence from the US Advertising Political Campaigns, 2010-2016," with Simon Anderson (UVA) and Benjamin Leyden (Cornell University).

## **Other Publications**

“Economies of Scope,” in the *Oxford Encyclopedia of Economic History*, Ed. Joel Mokyr, 2003.  
“Embargo economico e sul commercio delle armi: il caso dei conflitti jugoslavi,” *Quaderno Forum*, n. 3., anno VIII, *Forum on the Problems of Peace and War*, Firenze, 1994.

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## **GRANTS, HONORS, and FELLOWSHIPS**

### **Grants**

2018-2021 USDA 2018-67023-27682, with GianCarlo Moschini and Ed Perry, “Genetically-engineered traits, cross-licensing and competition in the U.S. corn and soybean seed industry.”

Sesquicentennial Associate, University of Virginia: Paid Research Leave, Spring 2017.

NSF-Xsede Grant SES150002, with Ed Hall, “Inference on Welfare and Market Power in Markets with Multiple Equilibria,” April 2015-2016.

2015-2017 USDA 2015-67023-22954, with David Hennessy, GianCarlo Moschini, “Imperfect competition in the agrochemical & seed industry: innovation, pricing of inputs, and welfare in the U.S. maize and soybean markets.”

2011 – 2013 NIH NICHD 1R03HD061514-01A1, with Amalia Miller: “Peer Effects in Fertility

Decisions.”

Sesquicentennial Associate, University of Virginia: Paid Research Leave, Fall 2008.

Marketing Science Institute, “Selling Pain Relief: Advertising Content of OTC Analgesics,” with Simon Anderson and Jura Liaukonyte, March 2006 - November 2007.

### **Honors and Fellowships**

2020 *Quality of Research Discovery Award* awarded by the Agricultural and Applied Economic Association for the article “Valuing Product Innovation: Genetically Engineered Varieties in US Corn and Soybeans,” with GianCarlo Moschini (Iowa State University), and Edward Perry (Kansas State University). *Rand Journal of Economics*, 2019, Vol. 50, Issue 3, Pages 615-644.

Commendation as an “extraordinary contributor” to the University of Virginia undergraduate experience by President Teresa A. Sullivan, 2014.

Seven Society Faculty Honoree for Outstanding Contributions to the University of Virginia, 2011

The Center for the Study of Industrial Organization dissertation fellowship, 1999-2000.

Distinguished Teaching Assistant Award, Northwestern University, 1997-98.

Special mention of the Faculty for Undergraduate Thesis, Università degli Studi di Firenze, June 1993.

Summer School of Game Theory, Forlì, Italy (Invited Lecturers: Profs. Fudenberg and Mertens), August 1993.

Visiting Student at the University of Leicester, UK (EU "Erasmus" exchange program, 1991).

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### **SEMINARS, CONFERENCES, MINI-CLASSES.**

#### **Mini-Classes in Empirical IO**

DIW Berlin (2015, 2017); University of Zurich (2012); University of Aarhus (2012); Iowa State University (2012).

#### **Seminars**

North Carolina State University, University of Helsinki, Queen’s University, Florida State University, Georgetown University, University of Florida, University of Toronto, Federal Trade

Commission, Department of Justice, Clemson University, Federal Reserve Board (DC), Hebrew University in Jerusalem, Tel Aviv University, DIW Berlin, Case Western Reserve University, Purdue University, University of Oklahoma, Australian National University, University of New South Wales, Vanderbilt University, Copenhagen Business School, Australian National University, University of New South Wales, Vanderbilt University, Copenhagen Business School, Iowa State University (Bob R. Holdren Memorial Lecture), North Carolina State University, University of North Carolina, Department of Justice, SUNY at Stony Brook, Virginia Tech University; Virginia Commonwealth University; University of Georgia, Workshop on Airline Competition, Department of Justice, Department of Justice, Olin Business School at the Washington University in St Louis, Department of Justice, Georgetown University, SUNY at Stony Brook, Harvard University; Federal Reserve Board of Washington, DC, University of Texas at Austin, Duke University, Università "Luigi Bocconi" di Milano, University of Colorado at Boulder, University of Virginia, East Carolina University, Federal Reserve Bank of Minneapolis; Federal Reserve Board of Washington, DC, Warwick University, North Carolina State University. Universidad Carlos III Madrid, Iowa State University, University of Toronto, SUNY at Buffalo, Florida International University, UC at Irvine.

### **Conference Presentations**

2018 International Industrial Organization Conference, 2018 Airline Competition Conference, July 2017, 2015 EARIE Annual Conference, August 2015; 2013 DC Industrial Organization Day; 4th Annual Center for the Study of Auctions, Procurements, and Competition Policy Conference; Southern Economic Association Meetings; the First Zurich Workshop in Economics (invited speaker), International Industrial Organization Conference, Southern Economic Association Meetings, Workshop in Aviation Economics at the University of British Columbia, 2nd Annual FTC-NU Microeconomics Conference; NBER Industrial Organization Summer Meetings, Summer Econometric Society Meetings, European Econometric Society Meetings, International Industrial Organization Conference, Southern Economic Association Meetings, European Association for Research in Industrial Economics, Rimini Center for Economic Analysis Workshop on the Economics of Tourism, American Finance Association Meetings, International Industrial Organization Conference, International Industrial Organization Conference, Summer Econometric Society Meetings, International Industrial Organization Conference, Southern Economic Association Meetings, European Economic Association Meetings, Winter Econometric Society Meetings, Southern Economic Association Meetings, NBER Industrial Organization

Winter Meetings, European Association for Research in Industrial Economics, Western Economic Association Meetings.

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## **TEACHING**

### **At the University of Virginia:**

Empirical Industrial Organization (undergraduate): Spring 2018-2021, Spring 2014-2016.

Industrial Organization (undergraduate). Fall 2018-2021, Fall 2012, Fall 2011.

(22 students); 4.80/5 (35 students).

Intermediate Microeconomics (Undergraduate). Summer 2016-2021, Fall 2017, Summer 2012, Fall 2010, Spring 2010, Fall 2007, Spring 2007, Fall 2005, Fall 2004.

Empirical Industrial Organization (Graduate). Spring 2005-2016. Spring 2018-2021.

### **At North Carolina State University:**

Principles of Microeconomics (Undergraduate). Fall 2003.

Empirical Industrial Organization (Graduate). Spring 2003.

### **At Florida International University:**

Introduction to Econometrics (Undergraduate). Fall 2001, Spring 2002.

The Industrial Organization of the Internet (Undergraduate). Spring 2002.

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## **ADVISING**

### **GRADUATE STUDENT ADVISING**

<b>Name</b>	<b>Role</b>	<b>Year</b>	<b>Field</b>	<b>First Placement</b>
Dennis Campbell	1 <sup>st</sup> Reader		Industrial Organization	
Hanna Charankevich**	3 <sup>rd</sup> Reader	2021	Industrial Organization	Biocomplexity Inst., UVA
Katya Khmel'nitskaya*,**	1 <sup>st</sup> Reader	2021	Industrial Organization	UBC Sauder
Emily Cook**	2 <sup>nd</sup> Reader	2020	Education, IO	Tulane University
Alex Gross***	3 <sup>rd</sup> Reader	2020	Industrial Organization	DoOJ
Cailin Slattery**	2 <sup>nd</sup> Reader	2019	Industrial Organization	New York University
Ben Leyden*,**	2 <sup>nd</sup> Reader	2018	Industrial Organization	Cornell University



Fang Guo	2 <sup>nd</sup> Reader	2017	Industrial Organization	Cornerstone
Brett Lissenden**	2 <sup>nd</sup> Reader	2017	Health, IO	Research Triangle In.
William Johnson**	2 <sup>nd</sup> Reader	2017	Health, IO	Health Care Cost Ins.
Zhou Zhang**	2 <sup>nd</sup> Reader	2016	Industrial Organization	Amazon
Sarah Tulman	2 <sup>nd</sup> Reader	2014	Experimental Economics	USDA
Charles Murry *,**	2 <sup>nd</sup> Reader	2014	Industrial Organization	Penn State University
Stephen Bruestle**	2 <sup>nd</sup> Reader	2013	Industrial Organization	FHFA
Michael Schreck	2 <sup>nd</sup> Reader	2013	Theory, Experimental	Analysis Group
Dusan Curcic	1 <sup>st</sup> Reader	2012	Industrial Organization	Digonex, IN
Yiyi Zhou *,**	3 <sup>rd</sup> Reader	2012	Industrial Organization	SUNY Stony Brook
Marianne Corbishley	2 <sup>nd</sup> Reader	2011	Industrial Organization	FHFA
Jonathan Williams *	2 <sup>nd</sup> Reader	2009	Industrial Organization	University of Georgia
Jura Liaukonyte	2 <sup>nd</sup> Reader	2009	Industrial Organization	Cornell University
Angela M. Smith	2 <sup>nd</sup> Reader	2008	Experimental, IO	James Madison Univ
Catherine T. Mooney	3 <sup>rd</sup> Reader	2007	Industrial Organization	Univ. of Oklahoma
Jayani Jayawardhana	3 <sup>rd</sup> Reader	2006	Industrial Organization	Medical Univ. SC

\* *Snavely Award for Best Dissertation.* \*\* *Snavely Prize for Best Dissertation Proposal.*

#### UNDERGRADUATE STUDENT ADVISING/Distinguished Major Program Thesis Advisor

Ha Pham, Spring 2020; Jake Seldon, Spring 2019; Grace Finley (winner of the Distinguished Majors Program Outstanding Thesis Prize), Fall 2015 and Spring 2016; Sheila Bushman and Grant Nelson, Spring 2013; Xiaoxiao Lin, Spring 2012.

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## **NATIONAL/INTERNATIONAL SERVICE**

### **Conference Session Organizer**

Program Director of the International Industrial Organization Conference, 2018-2020.

Member of the Board of Directors of the Industrial Organization Society, 2018-current.

Member of the Program Committee of the Annual International Industrial Organization Conference, 2016-2020.

Member of the Program Committee of the EARIE Annual Conference, 2015-current.

Southern Economic Association Meetings: November 2005 (1 Session), November 2006 (2 Invited Presidential Sessions), November 2008 (3 Invited Presidential Sessions), November 2010 (2 Invited Presidential Sessions), November 2018 (2 Invited Presidential Sessions).

### **Conference Session Invited Discussant**

Antitrust Rising Star Session at the International Industrial Organization Conference, May 2010.

### **Referee**

*American Economic Journal – Microeconomics, American Economic Journal – Economic Policy, American Economic Review, The B.E. Journal of Economic Analysis & Policy, Econometrica, Economic Inquiry, International Economic Review, International Journal of Industrial Organization, Journal of Business and Economic Statistics, Journal of Econometrics, Journal of Economics and Management Strategy, Journal of the Economics of Business, Journal of Finance, Journal of Health Economics, Journal of Industrial Economics, Journal of Political Economy, Quantitative Economics, Rand Journal of Economics, Review of Economic Studies, Review of Industrial Organization, Southern Economic Journal.*

### **Grant Proposal Reviewer**

*National Science Foundation, Social Sciences and Humanities Research Council of Canada, NSF Graduate Research Fellowships Program, European Research Council Consolidator Grants.*

### **External Examiner in a PhD Dissertation**

Anindya Tahsin, Department of Computer Science, Engineering School, University of Virginia, 2016.

Zhe Yuan, Department of Economics, University of Toronto, September 2016.

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## **DEPARTMENT AND UNIVERSITY SERVICE**

### **Department Service**

Bankard Workshop in IO/Theory (UVA) Committee, Spring 2006; 2009-2021.

Chair's Advisory Committee, 2019-2021.

Director of Graduate Studies, 2013-2016.

Graduate Program Admission Committee, Spring 2007-2009, 2013-2016.

Distinguished Majors Program Advising: Spring 2020 (1), Spring 2019 (1), Spring 2016 (1), Spring 2013 (2), Spring 2012 (1), Spring 2007 (1)..

Economics Chair Search Committee, Fall 2011.

Committee for 3<sup>rd</sup> Year Field Paper in Industrial Organization, Summer 2008 (Chair; 3 students); Summer 2009 (3 students); Summer 2010 (1 student); Summer 2011 (1 student); Summer 2012 (4 students); Summer 2013 (2 students); Summer 2014 (4 students).

*Snavelly Prize for Best Field Summer Paper*: Brett Lissenden (2014-2015); Fang Guo (2013-2014); Alicia Baik and Zhou Zhang (2012-2013).

All Fields Junior Recruiting Committee, Fall 2007.

Distinguished Majors Program Committee, Spring 2007.

Workshop in Applied Microeconomics (UVA) Committee, 2015 - 2016.

Undergraduate Advising, 2005-2015. (Approximate Number of Students: 74).

### **University Service**

Procession Marshall, Graduate School of Arts and Science, May 2015.

Procession Marshall, College of Arts and Science, May 2014.

Associate Dean for Graduate Academic Programs Search Committee, Spring 2014.

Judge for the 10th Annual Robert J. Huskey Graduate Research Exhibition at the University of Virginia, April 2010.

Member of a team set up by the UVA Center for Undergraduate Excellence, to conduct “mock” interviews of UVA undergraduate students who were finalist for the Marshall and/or Rhodes Scholarships, November 2009.

Selected as Most Valuable Professor by the UVA Men’s Basketball Team, Fall 2007.

Member of the Faculty-Student Mentoring Program, Office of African-American Affairs, 2005.

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## **CHARLOTTESVILLE COMMUNITY SERVICE**

Volunteer as a weekly host of *Classical Sunrise*, a weekly show of Classical Music on Fridays, January-July 2016, and on Mondays, March 2017-March 2019, on WTJU (91.1 FM in Charlottesville, or Wtju.net), the University of Virginia radio station.

WTJU Fundraising volunteer as a host of *ad-hoc* musical shows on WTJU (91.1 FM in Charlottesville, or Wtju.net): Musical Waves of the Mediterranean (Folk Marathon February 2018, February 2017); 1000 Years of Music in Italy (Classical Marathons December 2017, February, and December 2016); An Evening with Philip Glass and Arvo Part (Classical Marathon December 2017); Nature Trails (Classical Marathon October 2015, with Matthew Burtner); Courtly Music of the Renaissance Era (Classical Marathon December 2014).

Volunteer as a bi-weekly host of *Just a Few Friends*, a weekly show of Classical Chamber Music on WTJU (91.1 FM in Charlottesville, or Wtju.net), the University of Virginia radio station, Fall 2014-Fall 2015. Notable shows: Black History Month (2/22/2015); Women History Month (3/22/2015); National Autism Awareness Month (4/5/2015); Holocaust Remembrance Day (4/19/2015); Asian Pacific American Heritage Month (5/17/2015); LGBT Month (6/28/2015).

Volunteer as an employment advisor at the International Rescue Committee. Fall 2010-Spring 2011.