



Minerva - Laboratory on Gender Diversity and Gender Inequality
Sapienza University of Rome

Diversity in Economics: Gender Differences in the Scientific Production

Giulia Zacchia



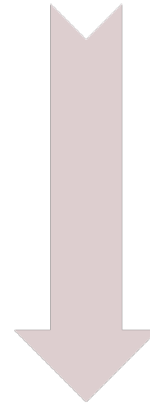
SAPIENZA
UNIVERSITÀ DI ROMA



“field of economics is behind others in its progress on diversity concerns”
Amanda Bayer and Cecilia Elena Rouse (2016)

Which diversity?

○
Heterogeneity of
researchers



○
Pluralism of
research interests

Diversity in economics profession

Trends in gender differences in publication topics and habits of Italian academic economists in the last two decades

Why Italy?

➤ Persistent Vertical Segregation (in the last 14 years)

- Less than 18% of full professors are women
- More than 45% are assistant professors

➤ The 2010 reform of the university system put stronger *emphasis on standardized bibliometric methods* mainly in economics (research quality/impact = citations)

➤ Pluralism key element of economic thought in Italy - since World War II development of plurality of schools of economic thought

Why Italy?

A large scale experiment

(804 profs - 24% women 12,931 articles in Econlit 1991-2014 - 18% women)

to test how:

- social context, mainly in terms of institutional changes, can affect the development of economic thought

Is it pluralism at risk?

- if women tend to be more exposed to those phenomena. Which are the consequences in terms of research field concentration and academic productivity differences

Homologation?

Main results

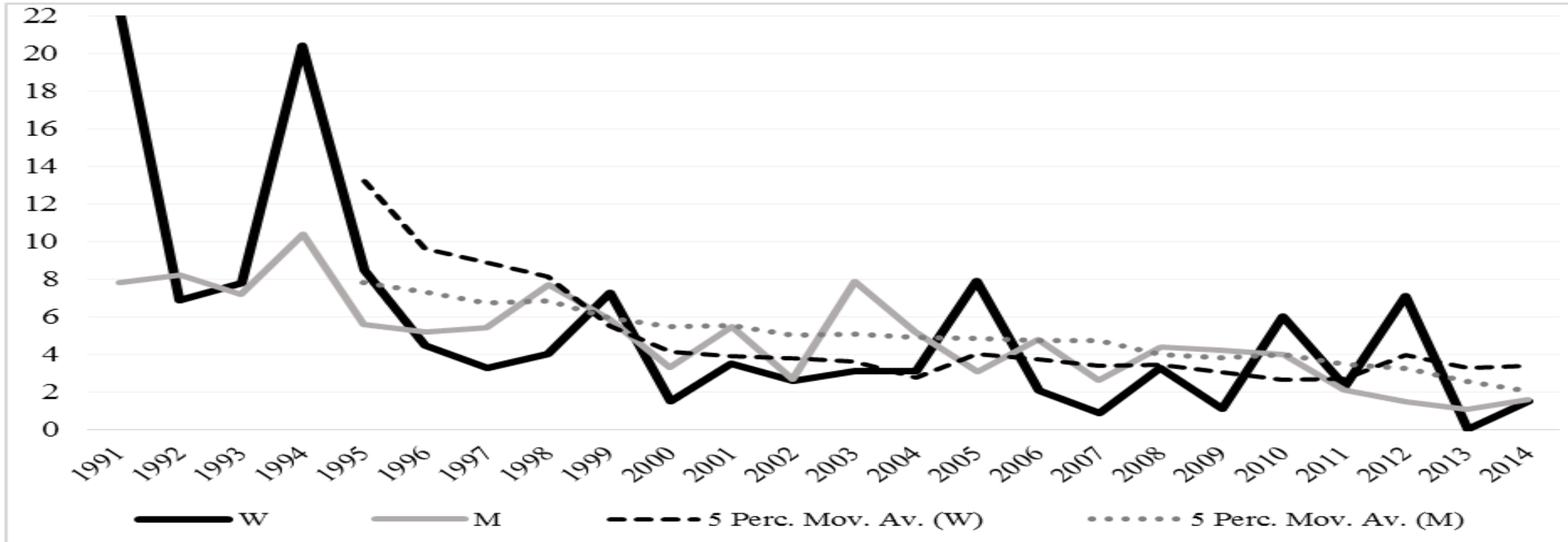
Trend: Homologation

Pottage's (1994) concept of "homologation" that embodies gender dimension since homologation denies the possibility of a specific feminine culture.

- Women have begun **writing more** in research fields where they were previously **under-represented**:
 - economic history (N) - mathematical and quantitative methods (C)
- **Women changed the research preferences** over the time more than their men colleagues
- The **degree of gender convergence** in research **increases** along the **hierarchical structure**: homologation is stronger for tenured professors than for PhD students
- Tendency among women to **reduce their publications in less mainstream fields** at a faster pace than their male colleagues

Declining Trend for Publications in Less Mainstream Research Fields

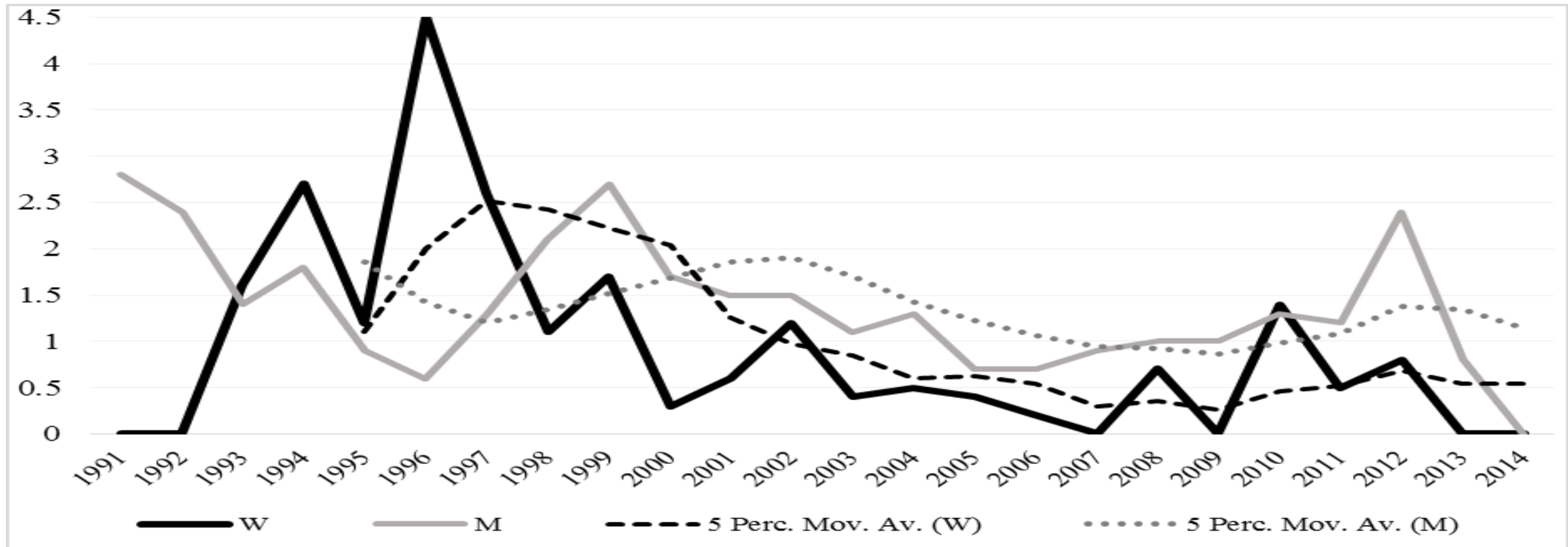
1) History of Economic Thought



Declining Trend for Publications in Less Mainstream Research Fields

2) Heterodox Approaches

B5 - Current Heterodox Approaches B50 - General; B51 - Socialist; Marxian; Sraffian; B52 - Institutional; Evolutionary; B53 - Austrian; B54 – Feminist Economics; B59 – Other; E11 - Marxian; Sraffian;



How to Measure the Gender Homologation Effect?

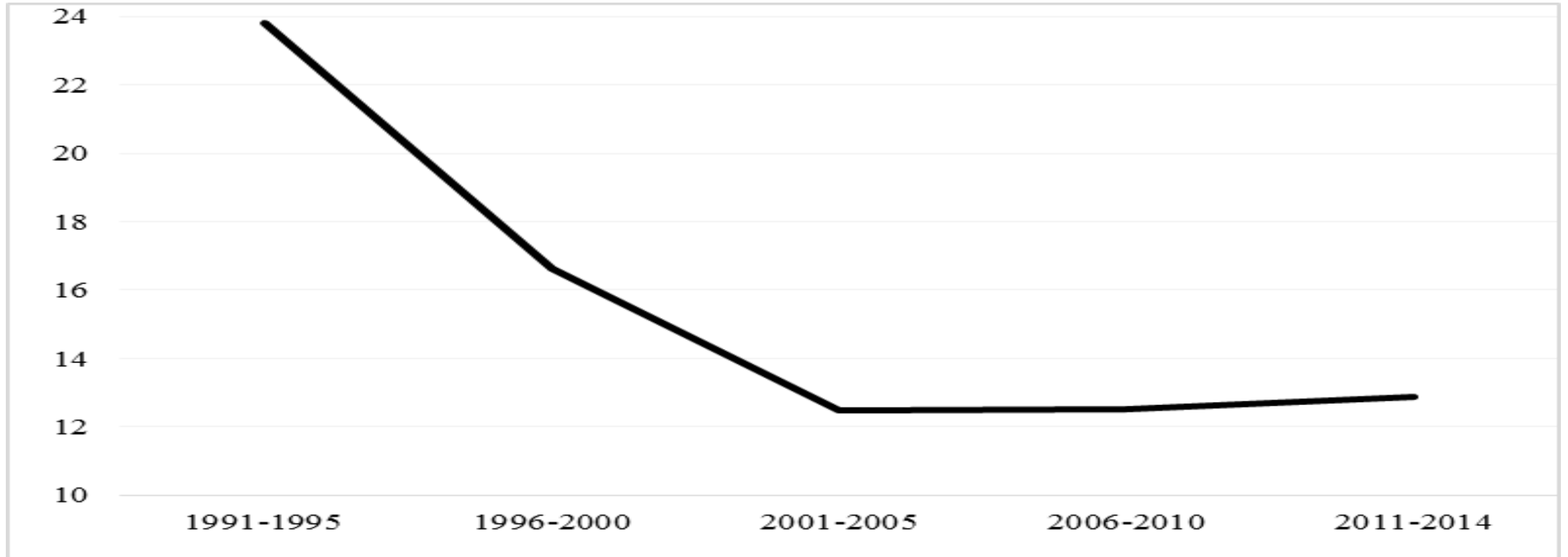
Duncan Segregation Index (1955)

$$Sf = \frac{1}{2} \sum_{i=1}^n |m_i - f_i|$$

proportion of women (men) who have to “trade” fields with a man (woman) for both sexes to be represented in all fields in proportion to their representation in the whole system.

- 0% full homologation
- 100%full segregation

Evolution of the Gender Homologation Effect

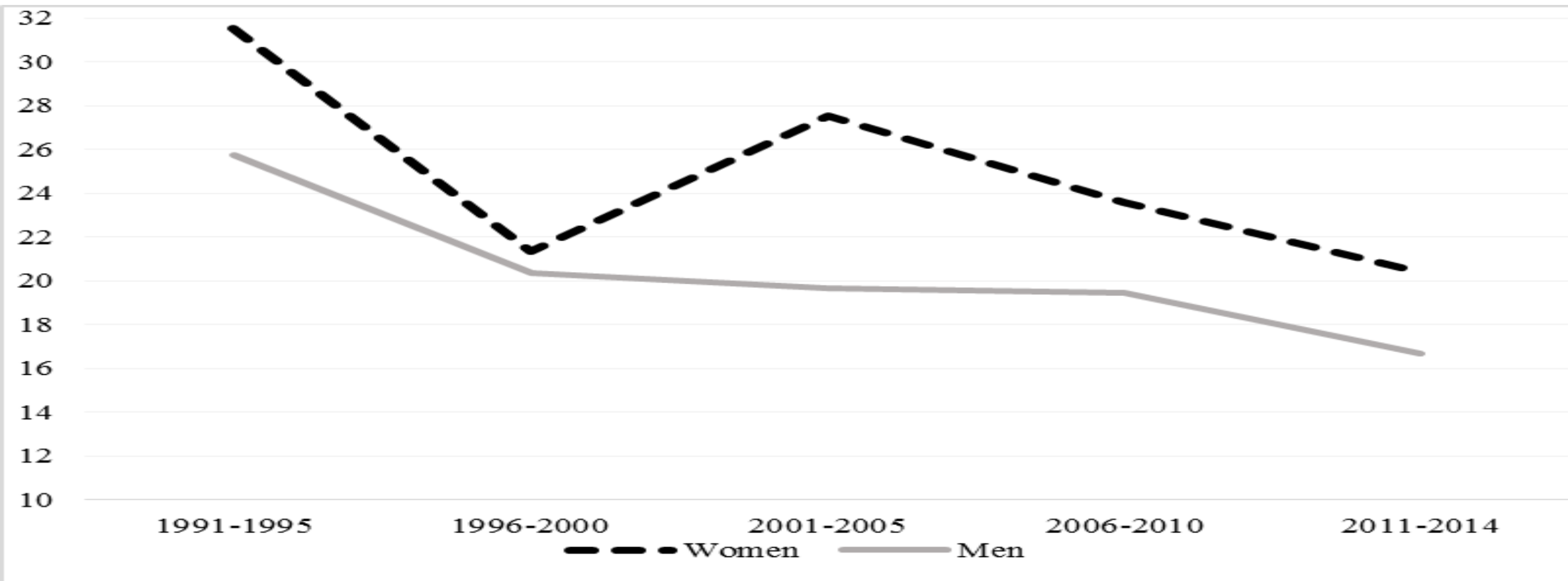


Direction of Convergence: Toward a Univocal Profile of «Top Economist»?

- Hypothesis: the distribution of women (or men) across fields is identical to the distribution of research fields in the top 10 economic journals – *Is there a convergence toward a univocal concept of perceived excellence in research?*
- highest bibliometric indexes (more visible in the evaluation process)
- higher concentration in few research fields – less heterogeneity

$$Sg = \frac{1}{2} \sum_{i=1}^n |g_i - t_i|$$

Direction of Convergence: Toward a Univocal Profile of «Top Economist»?



Less Pluralism

Double converge path for Italian academic economists in the last decades:

- **women and men** tend to research on the **same fields**
- concurrently they tend to **converge** to a univocal concept of **excellence in research** – articles in the top 10 economic journals

The double convergence path implies a consistent **reduction in diversity** in economics, mainly identified with the concept of pluralism of research.

Conclusions

Rules on “excellence” and “quality” tend:

- to **reinforce gender discrimination** and
- to **shape** (Italian) economists’ research activity - favoring the **majority** view (i.e. the mainstream)

The Italian case shows that:

- **preservation of pluralism** should be an **explicit goal** of the assessment and recruitment procedures
- **awareness of the gender impact** of institutional changes in order to anticipate their systemic and potential effects

Conclusions

“do we appreciate being included, under these conditions after millennia, in a world conceived by others?”

Carla Lonzi, 1970

Thank you!
giulia.zacchia@uniroma1.it

Gender Homologation Effect

	1991-1995		1996-2000		2001-2005		2006-2010		2011-2014	
	W	M	W	M	W	M	W	M	W	M
A. General Economics and Teaching	1.1%	1.1%	0.2%	0.8%	0.3%	0.7%	0.5%	0.7%	0.5%	0.4%
B. History of Economic Thought, Methodology, and Heterodox Approaches	16.0%	9.2%	4.6%	6.6%	4.9%	6.1%	3.0%	4.8%	3.5%	2.2%
C. Mathematical and Quantitative Methods	1.4%	3.3%	4%	3.6%	2.1%	2.5%	2.4%	4.1%	3.8%	3.8%
D. Microeconomics	10.4%	13.9%	11.2%	14.6%	9.9%	13.1%	10.3%	12.9%	12.8%	12.7%
E. Macroeconomics and Monetary Economics	7.3%	21.0%	11.1%	16.9%	8.6%	13.9%	7.8%	12.1%	5.4%	13.1%
F. International Economics	7.6%	9%	10.9%	8.9%	8.6%	8.4%	6.3%	6.4%	4.6%	4.9%
G. Financial Economics	6.2%	5.2%	4.7%	4.7%	5.8%	6.7%	6.8%	6.5%	6%	8.1%
H. Public Economics	10.9%	4.9%	7.5%	4.7%	7.6%	5.8%	7%	5.4%	6.5%	6.3%
I. Health, Education, and Welfare	0.8%	0.8%	1.6%	1.6%	2.2%	2.0%	5%	2.8%	7.4%	3%
J. Labor and Demographic Economics	14.3%	8.8%	15.2%	9.1%	13.4%	8.8%	10.3%	8.3%	12.3%	9.6%
K. Law and Economics	0.8%	0.6%	0.5%	1.1%	1%	1.4%	1%	1.5%	1.6%	1.3%
L. Industrial Organization	8.7%	6.6%	9.3%	7.7%	10.9%	11.3%	12.9%	12%	10.6%	11.4%
M. Business Administration and Business Economics, Marketing, Accounting, Personnel Economics	0.3%	0.5%	0.2%	0.4%	1.7%	0.9%	1.6%	1.5%	1.8%	1.3%
N. Economic History	0.6%	1.4%	1.1%	0.8%	0.4%	0.8%	1%	0.7%	1.3%	0.6%
O. Economic Development, Innovation, Technological Change, and Growth	5.9%	7.9%	8.1%	10.8%	9.3%	8.7%	8.3%	8.8%	8.5%	9.3%
P. Economic Systems	3.1%	3.1%	1.9%	2.8%	3.6%	2.1%	2.4%	1.7%	1.2%	1.6%
Q. Agricultural and Natural Resource Economics, Environmental and Ecological Economics	1.4%	1.4%	1.3%	1.9%	2.4%	1.9%	2.7%	3.3%	4.3%	5.1%
R. Urban, Rural, Regional, Real Estate, Transportation Economics	3.4%	1.3%	6.2%	2.9%	6.5%	4.5%	9.2%	5.3%	6.3%	4%
Z. Other Special Topics	0.0%	0.2%	0.3%	0.2%	0.9%	0.6%	1.8%	1.2%	1.7%	1.4%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Test $\chi^2 H_0$: distribution of men = distribution of women	$\chi^2 (18)=93.9^{***}$		$\chi^2 (18)=125.7^{***}$		$\chi^2 (18)= 150.5^{***}$		$\chi^2 (18) =208.3^{***}$		$\chi^2 (18)= 125.7^{***}$	
Test $\chi^2 H_0$: distribution of women is the same in the five periods	$\chi^2 (72) = 464.8^{***}$									
Test $\chi^2 H_0$: distribution of men is the same in the five periods	$\chi^2 (72) = 998.5^{***}$									

Note: main research fields per period in bold
asterisks denote level of significance *** 1%

Top Journals Considered

We consider the first 10 economic journals ranked in Kalaitzidakis et al. (2011):

- American Economic Review;
- Quarterly Journal of Economics;
- Journal of Political Economy;
- Econometrica;
- Review of Economic Studies;
- Journal of Monetary Economics;
- Review of Economics and Statistics;
- Journal of Economic Perspectives;
- Journal of Economic Theory;
- The Economic Journal

Status Quo

- Under-representation of women in universities
 - misogyny - Alice Wu (dissertation University of California, Berkeley)
- More competitive environment imposed by the growing pressure for *audit* and *evaluation* of public spending on higher education and research;
 - increasing use of *metrics* and *quantitative* indicators on different aspect of research (mainly based on citations);
- “field of economics is behind others in its progress on diversity concerns”
Amanda Bayer and Cecilia Elena Rouse (2016)