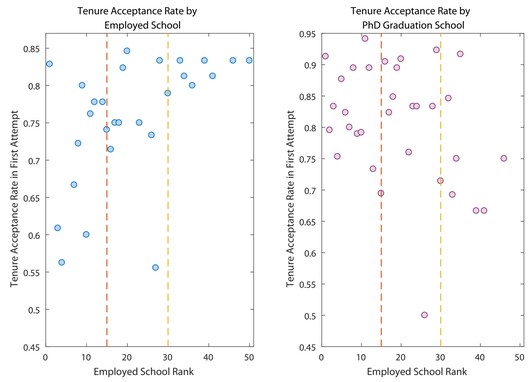
Quality vs Quantity: What Does Matter More for Tenure in Economics?

Pallab Ghosh (University of Oklahoma) and Zexuan Liu (Tianjin University of Finance and Economics)

Introduction

An assistant professor in any academic research institution always faces a tradeoff between quality and quantity of publications because tenure clock is generally fixed in a window of 6 to 7 years. That's why we investigate to what extent, the quality and total volume of publication affect the tenure outcome decision. Using data from the CVs of academic economists from the top 96 PhD-granting economics departments in the US, we find that the total number of publications does not affect the successful tenure promotion. In contrast, the quality publication defined as the Top 5 or the Top 20 economics journal publications significantly increase the probability of tenure acceptance. Estimating the heterogeneous impact over time, we find that the marginal impact of quality publication on tenure decision increase about 0.3 in post-2000 because publishing in the Top 5 has become harder since the last two decades.

Figure 1: Tenure Acceptance Rate in First Attempt by Employed Economics Department and PhD Graduation School



Data and Results

We construct a unique dataset by using the CVs of all assistant professors who were up for tenure from 1984-2017 at the top 96 PhD-granting economics departments in the US. The data include individuals' complete academic work histories, where and when they received their PhD, their primary research field and their number of publications. We also collect information on gender, year of PhD, the number of publications during the PhD, and the year and institution at which they first received tenure. After excluding 326 faculty members who either did not upload their CVs on the university's website or did not have sufficient information in their CVs, our final sample size is 1,090.

Model Specification

To estimate the impact of quality publications on the tenure outcome decision, we run the following linear regression model

$$\text{Tenure}_i = \alpha + \beta_j \times \text{Fration of Pubs in } j\text{th Category} + \gamma X_i + \varepsilon_i \quad (1)$$

where Tenure_i is an indicator variable for receiving tenure in the first attempt of tenure-track employment. We define quality publications in the following three ways: (i) publications in top 5, (ii) publications in top 20, and (iii) publications in top 50. We include any below 50 rank publications as the general publications.

The set of control variables X include total number of publications, number of unique coauthors, log citations, race and gender dummies, years of work experience before the first tenure attempt, PhD graduation age, work experience prior to graduate school and as well research field, employed departments and PhD graduation school fixed effects.

Table 1: The Impact of Quality Publications on the Tenure Acceptance in First Attempt

	(1)	(2)	(3)	(4)
Fraction of Top 1-5 Ranked Journal Publications	0.419*** (0.102)			
Fraction of Top 1-20 Ranked Journal Publications		0.163*** (0.061)		
Fraction of Top 1-50 Ranked Journal Publications			0.003 (0.050)	
Fraction of Below 50 Ranked Journal Publications				-0.003 (0.050)
Total Number of Publications	0.005 (0.007)	0.004 (0.007)	0.004 (0.007)	0.004 (0.007)
Demographic Controls	Yes	Yes	Yes	Yes
FEs (Research Field, Employed School and PhD School)	Yes	Yes	Yes	Yes
R^2	0.322	0.314	0.308	0.308
No of Observations	1,090	1,090	1,090	1,090

Figure 2: Tenure Acceptance Rate in First Attempt by Gender

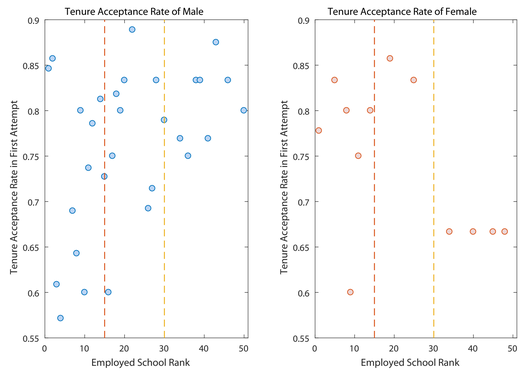
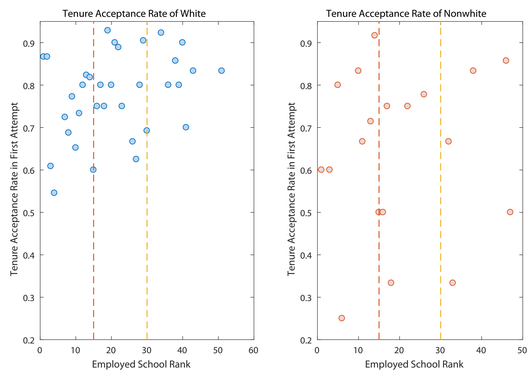


Figure 3: Tenure Acceptance Rate in First Attempt by Race



To estimate the impact of volume of publications on the tenure outcome decision, we run the following linear regression model

$$\text{Tenure}_i = \alpha + \beta_k \times \mathcal{I}\Big[k_i \in K\Big] + \theta X_i + \eta_i \quad (2)$$

where K is a set of specific range of publications. We have used the following four specific range of publications: (i) 1-6, (ii) 7-10, (iii) more than 10, and (iv) more than median.

Table 2: Estimating Different Quantity of Publications on the Tenure Acceptance in First Attempt

	(1)	(2)	(3)	(4)
No of Publication in Between 1-6	-0.003 (0.033)			
No of Publication in Between 7-10		0.008 (0.023)		
No of Publications > 10			-0.005 (0.035)	
No of Publications > Median Publication				0.010 (0.031)
No Unique Coauthors	-0.012*** (0.004)	-0.012*** (0.004)	-0.012*** (0.004)	-0.013*** (0.004)
All Other Controls	Yes	Yes	Yes	Yes
FEs (Research Field, Employed School and PhD School)	Yes	Yes	Yes	Yes
R-squared	0.307	0.307	0.307	0.307
No of Observations	1,090	1,090	1,090	1,090

Figure 4: Relationship Between Male Tenure Acceptance Rate in First Attempt and Top Five Economics Journal Acceptance Rate

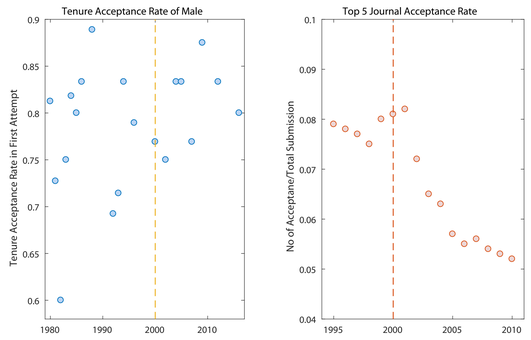


Table 3: Heterogenous Impacts of Quality Publication on the Tenure Acceptance in First Attempt in Pre and Post 2000

	(1)	(2)	(3)	(4)
Fraction of Top 1-5 Ranked Journal Pubs × Tenure Attempt Post 2000	0.383*** (0.135)			
Fraction of Top 1-20 Ranked Journal Pubs × Tenure Attempt Post 2000		0.117 (0.080)		
Fraction of Top 1-50 Ranked Journal Pubs × Tenure Attempt Post 2000			0.009 (0.066)	
Fraction of Below 50 Ranked Journal Pubs × Tenure Attempt Post 2000				-0.009 (0.066)
Total Number of Publications	0.005 (0.007)	0.004 (0.007)	0.004 (0.007)	0.004 (0.007)
All Other Controls	Yes	Yes	Yes	Yes
FEs (Research Field, Employed School and PhD School)	Yes	Yes	Yes	Yes
R-squared	0.314	0.309	0.308	0.308
No of Observations	1,090	1,090	1,090	1,090

Table 4: Heterogenous Impacts of Quality Publication Quality Publications on the Tenure Acceptance in First Attempt by Top 30 Schools

Dependent Variable: Tenure Acceptance or Denial in First Attempt

	(1)	(2)	(3)	(4)
Fraction of Top 1-5 Ranked Journal Pubs × Graduated from Top 30 Ranked School	0.462*** (0.115)			
Fraction of Top 1-20 Ranked Journal Pubs × Graduated from Top 30 Ranked School		0.264*** (0.074)		
Fraction of Top 1-50 Ranked Journal Pubs × Graduated from Top 30 Ranked School			0.029 (0.061)	
Fraction of Below 50 Ranked Journal Pubs × Graduated from Top 30 Ranked School				-0.029 (0.061)
Total Number of Publications	0.004 (0.007)	0.003 (0.007)	0.004 (0.007)	0.004 (0.007)
All Other Controls	Yes	Yes	Yes	Yes
FEs (Research Field, Employed School and PhD School)	Yes	Yes	Yes	Yes
R-squared	0.321	0.318	0.308	0.308
No of Observations	1,090	1,090	1,090	1,090

Table 5: Heterogenous Impacts of Quality Publication Quality Publications on the Tenure Acceptance in First Attempt by More than Average Unique Coauthor

Dependent Variable: Tenure Acceptance or Denial in First Attempt

	(1)	(2)	(3)	(4)
Fraction of Top 1-5 Ranked Journal Pubs × No of Unique Coauthors > Average	0.441*** (0.156)			
Fraction of Top 1-20 Ranked Journal Pubs × No of Unique Coauthors > Average		0.155* (0.087)		
Fraction of Top 1-50 Ranked Journal Pubs × No of Unique Coauthors > Average			-0.027 (0.073)	
Fraction of Below 50 Ranked Journal Pubs × No of Unique Coauthors > Average				0.027 (0.073)
No of Unique Coauthors > Average	-0.098*** (0.033)	-0.094** (0.037)	-0.043 (0.043)	-0.070 (0.052)
Total Number of Publications	0.000 (0.007)	-0.002 (0.007)	-0.002 (0.007)	-0.002 (0.007)
All Other Controls	Yes	Yes	Yes	Yes
FEs (Research Field, Employed School and PhD School)	Yes	Yes	Yes	Yes
R-squared	0.305	0.301	0.299	0.299
No of Observations	1,090	1,090	1,090	1,090

Conclusion

- This study shows that there is no trade-off between quality and quantity of publication because only quality publications affect the successful tenure promotion in the top 96 ranked economics departments in the US.
- The Top 5 or the Top 20 ranked journal publications increase the probability of tenure acceptance by 0.16 to 0.42, and other publications have no significant impact on tenure outcome.
- We show that since 2000 the marginal impact of quality publication has increased about 0.3 compare to the period 1984-1999 because the Top 5 journal acceptance rate is decreasing since last two decades.

The University of Oklahoma College of Arts and Sciences — One College, Infinite Possibilities.