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The times they are a-changin': profiling newly tenured business economics professors in Germany over the past thirty years

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Abstract

This study examines how the profiles of newly tenured business economics professors in Germany have changed over the past thirty years. We document how business economics professors have become more diverse over time, e.g., in terms of their gender and the internationality of their education. Furthermore, we show that the size of the professional networks of newly tenured professors increased strongly during our investigation period and that those professors who obtained tenure more recently publish with a stronger international focus than their peers who obtained tenure earlier. Most importantly, we find that the publication requirements for newly tenured business economics professors have changed over the past thirty years. Specifically, we document increased requirements for publications in highly renowned international journals. However, we also find that traditional German business economics journals (e.g., the *Journal of Business Economics* and the *Schmalenbach Business Review*) remain highly relevant outlets for recently tenured business economics professors. Thus, by documenting and quantifying these effects, our study contributes to research on business economics professors by highlighting how *the times they are a-changin'*.

Keywords Business economics · Journal articles · Publication benchmarking · Profiling · Time trends · A14 · I23 · M10

JEL Classification A14 · I23 · M10

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"If your time to you is worth savin'

Then you better start swimmin' or you'll sink like a stone

For the times, they are a-changin'"

Bob Dylan—The Times They Are A-Changin'

1 Introduction

Business economics¹ researchers have faced changing economic incentives caused by a multitude of new reforms in the higher education and public research sectors in recent years. In particular, the introduction of new public management (NPM), i.e. the implementation of market structures in the public sector (Schmoch and Schubert 2010; Schubert 2009), and journal rankings (Buehling 2021; Vogel et al. 2017) as well as the concomitant implementation of performance-based funding approaches in universities (Hicks 2012; Sieweke et al. 2014) have substantially impacted researchers in business economics. In particular, junior researchers lacking a tenured professorship have been impacted by these reforms, facing increasing pressure to 'publish or perish' to obtain their career goals (Backes-Gellner and Schlinghoff 2010; Graber et al. 2008). This paper investigates how the profiles of newly tenured business economics professors in Germany exposed to these reforms changed from the 1990s to the 2010s. In particular, we focus on four dimensions to analyze the relevant profiles. These dimensions comprise the professors' demographic characteristics, professional networks, research internationalization level, and changing requirements for them to publish work in highly renowned international journals. Specifically, our fourth dimension has important implications for the development of tenure requirements in business economics over time.

Therefore, our paper contributes to the literature in multiple ways. First, our paper contributes to the literature on the career paths of German business economics professors. In the late 2000s, a series of papers was published on the career paths of business and economics professors, particularly with regard to the publication requirements for obtaining a tenured position (Fabel et al. 2008; Graber et al. 2008; Rauber and Ursprung 2008; Schulze et al. 2008). More recently, a growing body of literature has addressed other attributes of German business economics researchers, such as (international) mobility (Bäker 2015; Bäker et al. 2016, 2021), changing publication patterns (Ayaita et al. 2019), or the opportunity costs of leadership positions in academia (Backes-Gellner et al. 2018).

Second, our paper contributes to the international literature regarding the so-called publication benchmarks necessary to obtain tenured professorships (Beattie and Goodacre 2012; Dean et al. 2011; Dennis et al. 2006; Glover et al. 2006, 2012;

¹ Notably, we focus on professors in the field "Betriebswirtschaftslehre", which can be translated as "business administration" or "business economics". Since this journal—formerly named "Zeitschrift für Betriebswirtschaft"—translates "Betriebswirtschaft" to "business economics", we choose this translation in our paper.

Goodacre et al. 2021). While most of these papers typically focus only on certain subfields of business economics, such as accounting or business information systems, our paper provides a comprehensive overview of the entire business economics discipline.

Third, our paper contributes to the literature on the preferences among appointing committees in business economics. Fiedler and Welpé (2008) investigate the factors that are important determinants for universities in German-speaking countries in regard to the appointment of management professors. Beckmann and Schneider (2013) also address appointment preferences in German economics. However, they focus explicitly on the impact of scholars' publications on obtaining tenure. Our paper extends this literature by exploring how these preferences might have changed over time.

To analyze the profiles of newly tenured business economics professors, we focus on four dimensions. First, we turn to the general characteristics of newly tenured professors, such as their gender or age at which they obtain their first tenured professorship. Schulze et al. (2008) and Röbbken (2009) provide an overview of some characteristics, such as the gender or international mobility of business and economics professors in Austria, Germany, and Switzerland as of 2006 and 2008.² Consequently, our literature review has not yielded any salient research that covers developments in the past 10 years. While there is evidence that the percentage of female economics professors has increased in the DACH region (see, e.g., Hilber et al. (2021)), our literature review has yielded no empirical evidence regarding any changes in the age professors obtain their first tenured professorship or the percentage of professors who spend time abroad.³ Furthermore, we extend previous research by analyzing whether the percentage of professors who received their PhD from particularly renowned universities in the DACH region has changed over time.

The second dimension refers to the professional networks of professors. It is well established in the literature that academic networks are important determinants of academic success (Bordons et al. 2015; Gonzalez-Brambila et al. 2013; Li et al. 2013; McCarty et al. 2013; Werker and Hopp 2020; Ynalvez and Shrum 2011). In addition, there is empirical evidence documenting how the academic networks in management (Acedo et al. 2006), finance (Walter 2011), and economics (Jones 2021) increase over time. However, this evidence does not necessarily imply that similar patterns are also observable among newly tenured business economics professors in Germany. Hence, we supplement previous research by analyzing how the professional networks of newly tenured business economics professors in Germany evolve over time.

Third, we investigate the national focus of the professors in our data. An often cited criticism of journal rankings is that they lead researchers to increasingly follow

² Henceforth, we refer to these three countries as the DACH (D=Germany, A=Austria, CH=Switzerland) countries.

³ The fact that there is no empirical evidence regarding changes in substantial visits abroad is rather surprising as recent evidence highlighted the importance for researchers to spend time abroad to accumulate human and social capital (Bäker et al. 2021).

international standards and that diversity and creativity in research might suffer as a result (Osterloh and Frey 2015; Rost and Frey 2011). Recently, Buehling (2021) has provided causal evidence for this claim, documenting a convergence of topics investigated by German-based economics researchers towards their international peers as a consequence of the introduction of the Handelsblatt ranking.⁴ Rapp et al. (2019) investigate the internationalization of German researchers in accounting, a subfield of business economics. They find an increasing level of internationalization, in terms of research methods and research content, between 1985 and 2015. However, the question of whether newly tenured professors in Germany publish more internationally in general before receiving their first tenured position remains an open question empirically. Our paper adds to the literature by exploring the development of the national focus among newly tenured business economics professors in Germany.

Our fourth dimension concerns the changing publication requirements for obtaining a tenured professorship. In particular, we explore whether hiring committees place more emphasis on publications in highly renowned (international) journals. Recent research has stressed that such publications are crucial for the career success of junior researchers in business and economics internationally (Bajo et al. 2020; Heckman and Moktan 2020). This trend has also been documented among business and economics researchers in the DACH countries (Graber et al. 2008; Schulze et al. 2008). However, our literature review has not yielded any recent evidence on this matter. While anecdotal evidence suggests that the relevance of publications in highly renowned journals has been increasing in recent years, to the best of our knowledge, there has been no quantification of this trend. Our paper fills this gap by providing empirical evidence on the focus on top publications among newly tenured business economics professors prior to obtaining tenure between the 1990s and the 2010s. By focusing on this dimension, our paper provides evidence on changes in the tenure requirements in German business economics.

To analyze the profiles of newly tenured business economics professors, our study draws on a unique, hand-collected dataset. This dataset comprises 781 business economics professors who obtained their first tenured professorship in Germany between 1990 and 2018. We merge this dataset with publication data obtained from the online research monitoring portal Forschungsmonitoring to investigate the professors' professional networks, national publication focus, and focus on top publications.⁵

Our main findings are that newly appointed German business economics professors have become more diverse over time, e.g., in terms of their gender and educational background. Furthermore, we find that the professional networks of newly appointed professors grew during our investigation period and that the size of coauthor teams has also increased among more recently tenured professors. Our results

⁴ The Handelsblatt ranking is a German ranking that ranks journals, researchers, and universities in terms of their publication output in business and economics. For more information please refer to Lorenz and Löffler (2015) or Sturm and Ursprung (2017).

⁵ For more detailed information regarding the data provided by Forschungsmonitoring, please refer to Hilber et al. (2021) and Sturm and Ursprung (2017).

also show that newly appointed business economics professors in Germany have increasingly published internationally before being appointed to a tenured professorship. While professors who obtained tenure in the 1990s published a large percentage of their work in German or in German outlets when they received tenure, professors who have obtained tenure more recently tend to publish a considerable percentage of their papers internationally. Last, we document an increasing focus on publications in highly renowned journals, e.g., A and A+ journals, according to the Journal 3 (JQL3).

Our paper has important practical implications, especially for junior researchers striving to become tenured business economics professors. By documenting how the requirements to obtain a tenured professorship have changed over time, we provide guidance for such junior researchers on the necessary appointment benchmarks they will likely have to meet in the future. Furthermore, our results yield insights into potential strategies, regarding, for example, the composition of professional networks that might be helpful in obtaining one's first tenured professorship.

The remainder of our paper is organized as follows: Sect. 2 briefly presents the characteristics of the career stages leading to a full professorship at a German university and describes the hiring process for obtaining a full professorship. In Sect. 3, we introduce the data and variables used in our study. Section 4 presents our main results, while Sect. 5 presents additional analyses. Finally, we discuss our results in Sect. 6.

2 The institutional framework in Germany

German academia is an interesting academic labor market because of its open competition for tenured professorships. For many decades, a tenure-track system was absent in Germany; in contrast to the Anglo-American system, German universities still provide only a few tenured positions below full professor (Lutter and Schröder 2016). Consequently, almost every postdoctoral researcher either drops out of the system or becomes a tenured full professor at a university outside his or her postdoctoral institution.

Typically, there are three stages to becoming a tenured professor in Germany. In the first stage, a junior researcher is a doctoral student earning a PhD; in contrast to the Anglo-American system, in Germany, the majority of doctoral students are employed at a university or research institute [see, e.g., Ambrasat and Tesch (2017); Fitzenberger and Schulze (2014)] and are not supported by scholarships. In the second stage, the junior researcher is a postdoctoral fellow, traditionally called *Habilitand* in Germany—without tenure. In 2002, a reform of the Higher Education System [see, e.g., Bäker (2015); Lutter and Schröder (2016)] was passed, which introduced an alternative career path for postdoctoral researchers—the junior professorship. In contrast to a *Habilitand*, a junior professor lacks a formal supervisor and has control over a personal research budget. To receive a junior professorship, a junior researcher must complete an application process comparable to the application process for becoming a tenured professor. This is in contrast to the application

to become a Habilitand, where one's supervisor determines who to employ. Notably, however, junior professorships usually do not offer a tenure-track option.⁶

The third and last stage is a tenured professorship, which in Germany is typically called a C3/C4 or W2/W3 professorship. Unlike the Anglo-American system, in Germany, each professor usually holds his or her own academic chair. The German system largely prohibits inbreeding [see, e.g., Bäker (2015)]; therefore, a Habilitand or junior professor has to change his or her university at least once before obtaining a tenured professorship. The present paper focuses on this "last" step toward becoming a tenured professor.

The typical hiring process at a German business economics department can be described as follows: Applicants (e.g. Habilitands) from other universities apply to a job posting for a new professorship, e.g., a professorship in human resource management. As professors in Germany typically do not become professors in a general field (e.g., for business economics) but professors in a specific field (e.g. human resource management), their qualifications regarding a posting's specific field must be evaluated (Hamann 2019). Since most German business economics departments are rather small—often containing approximately eight to fifteen professors across all fields of business economics—incumbent professors at a university are not usually specialists in the field of an announced professorship. Thus, there is often no expert on the relevant subject employed by the announcing university. To overcome this shortcoming, hiring committees regularly recruit experts from other universities with expertise in the field of a new professorship.

The process for finally identifying the three most suitable candidates by a hiring committee consists of several stages and is heavily based on applicants' publications and on relevant journal rankings (Hüther and Krücken 2018).⁷ Based on all the received applications, a hiring committee has to decide which candidates to interview, a process that typically includes an oral presentation. To perform this task in an "efficient" manner, the publication lists of candidates are evaluated on the basis of a journal ranking, usually the JQL3 ranking in German business economics. Usually, a hiring committee defines quantitative thresholds for applicants to be eligible for the next stage of the hiring process, such as their number of A publications.⁸

Candidates, who meet or exceed these thresholds are usually screened in detail concerning their area of expertise and the quality of their research. Finally, approximately five to eight candidates are invited to present themselves and their research to the relevant business economics department (Hüther and Krücken 2018). After reviewing all the information and personal impressions of the candidates, the hiring committee selects around three candidates and requests two external referee reports on them (Seeber and Mampaey 2022). External referees are usually well-established professors in the field of the new professorship. While they may assess

⁶ In 2016, so-called Qualifikationsprofessuren were implemented in Germany, providing junior researchers with a tenure track comparable to the Anglo-American system. Notably, we do not include professors on this career path in the present paper.

⁷ Usually, a hiring committee receives approximately 40 to 60 applications to a job posting and then determines the three most suitable candidates for a new professorship.

⁸ Typically, hiring committees do not account for the amount of coauthors of the publications.

various aspects of applicants' qualifications, they typically refer to journal rankings to determine their final rankings of who should be offered the position (Hüther and Krücken 2018).

3 Data and variables

3.1 Sample and publication data

Our sample consists of 781 business economics professors who obtained tenure at a German university between 1990 and 2018, held a tenured professorship in a DACH country in 2018, and provided CV information on the web.⁹ We manually gathered CV information for each professor.¹⁰ For this purpose, we browsed the CVs of professors that are freely available on the webpages of universities or professors' personal webpages. We collected information (year and institution) regarding each professor's career steps (graduation, doctorate, habilitation, first tenured professorship). Unfortunately, not every professor had reported all the necessary information. We omitted professors with missing data on the year they obtained their first tenured professorship, the year they were born, the university they initially graduated from and the university where they obtained their PhD.¹¹

To address our dimensions regarding publication patterns, we merge data on the publications of the professors with our initial CV dataset. The online research-monitoring portal *Forschungsmonitoring* provides us with this publication data. The *German Economic Association* first commenced *Forschungsmonitoring*; today, it is quality-approved by both the *Düsseldorf Institute for Competition Economics (DICE)* at Heinrich-Heine University Düsseldorf and the *Konjunkturforschungssstelle KOF* at ETH Zurich. Data from *Forschungsmonitoring* have been used recently in many papers on (business) economics researchers in Austria, Germany, and Switzerland (e.g., Ayaita et al. (2019), Backes-Gellner et al. (2018), Bäker et al. (2021), Joecks et al. (2014)). Among these publication data, we use only publications classified as 'research articles' because we focus on journal publications, the most common and widely accepted form of disseminating research (Ayaita et al. 2019; Combes and Linnemer 2003; Sinatra et al. 2016). Additionally, we exclude conference presentations and conference proceedings.

⁹ As our study focuses on the research outputs of newly tenured professor, our dataset is restricted to professors with at least one journal publication when they receive tenure, as journal publications are typically cited as a necessary qualification in any academic job advertisement. Notably, in the early years of our investigation period, Habilitationsschriften were common. In particular, 42 of the newly tenured professors had no journal publication until the year of receiving tenure, thus, they are not part of our final dataset.

¹⁰ We collected our data at the end of 2018 and received the publication data at the same time. Hence, the end of our observation period is the year 2018.

¹¹ The availability of a professor's CV is a crucial determinant for the size of our sample. In particular, we omit 132 professors due to incomplete CVs. A thorough discussion of the limitations associated with the way we organize our data is provided in Sect. 6.

3.2 Variables

With our hand-collected CV data, we create the following variables to capture the relevant characteristics of the professors in our data. First, we estimate Age at Tenure, i.e., the difference in years between a professor's birth and the year he or she obtains his or her first tenured professorship. The average Age at Tenure in our sample is approximately 37 years, as shown in Table 1. Second, we construct a dummy variable called Female that equals 1 if a professor is a woman. Seventeen percent of the professors are female. Third, we create a dummy variable called PhD Top Reputation University, which equals 1 if a professor obtains his or her PhD at a university with a particularly high reputation in terms of educating business economics professors (41% of the professors). We classify these universities based on the number of professors educated at these universities in our dataset.¹² Fourth, we introduce a dummy variable called International PhD that equals 1 if a professor obtains a PhD in any country other than Germany (11% of the professors). Fifth, we define a dummy variable called Same University Graduation and PhD that equals 1 if a professor in our dataset graduates (e.g., with a diploma or master's degree) and obtains a PhD from the same university (57% of the professors).

Next, we utilize our merged publication dataset to calculate two variables that capture the professors' networks. First, we create a variable called *# of Different Coauthors*. To calculate this variable, we count the number of different coauthors that a professor collaborated with before he or she obtained his or her first tenured professorship. More precisely, we count the number of unique coauthors who these professors collaborated with in their publications prior to obtaining their first tenured professorship. Second, we introduce a variable called *Average # of Authors per Publication*. This variable is defined as the average number of authors across all the publications that a professor published before he or she obtained his or her first tenured professorship. Our data reveal that the average paper among newly tenured professors has two authors (including him- or herself).

Then, we define four variables to measure the national focus of the professors. First, we use Google's Compact Language Detector 2 (Ooms 2018) to identify publications with a German title. Next, we calculate the percentage of *Publications with a German Title* for any professor in our data prior to obtaining their first tenured professorship. Second, we measure the percentage of *Publications in DACH Journals*, by processing all the journals included in the publication data by hand and tagging those that originate from a DACH country. Third, we calculate the percentage of *Publications in German Business Economics (GBE) Journals*, i.e., publications in the *Journal of Business Economics* (formerly *Zeitschrift für Betriebswirtschaft*), the *Schmalenbach Business Review* (now the *Schmalenbach Journal of Business*

¹² More precisely, we counted the universities where the professors in our dataset most frequently obtained their PhD. The ten universities with the most PhD graduates are defined as a PhD Top Reputation University in our paper. This list comprises the following institutions: University of Mannheim, Goethe University Frankfurt, University of Münster, University of Cologne, Ludwig Maximilian University of Munich, University of St. Gallen, University of Augsburg, Free University of Berlin, Karlsruhe Institute of Technology, and University of Hamburg.

Table 1 Descriptive statistics

Variable	N	Mean	Standard deviation	25% quantile	Median	75% quantile
Changin' characteristics						
Age at tenure	781	37.11	3.37	35.00	37.00	39.00
Female	781	0.17	0.38	0.00	0.00	0.00
PhD Top Reputation University	781	0.41	0.49	0.00	0.00	1.00
International PhD	781	0.11	0.32	0.00	0.00	0.00
Same University Graduation and PhD	781	0.57	0.49	0.00	1.00	1.00
Changin' networks						
# of Different Coauthors	781	6.99	6.59	2.00	5.00	9.00
Average # of Authors per Publication	781	2.07	0.71	1.54	2.00	2.50
Changin' national focus						
Publications with German title	781	0.53	0.35	0.22	0.55	0.85
Publications in DACH journals	781	0.62	0.34	0.33	0.67	0.96
Publications in GBE journals	781	0.14	0.19	0.00	0.08	0.20
At Least One GBE journal	781	0.58	0.49	0.00	1.00	1.00
Changin' top publications						
# Jourqual A	781	0.88	1.56	0.00	0.00	1.00
At Least One Jourqual A	781	0.39	0.49	0.00	0.00	1.00
# Jourqual A+	781	0.16	0.54	0.00	0.00	0.00
At Least One Jourqual A+	781	0.10	0.30	0.00	0.00	0.00
# FT50	781	0.43	1.05	0.00	0.00	0.00
At Least One FT50	781	0.22	0.41	0.00	0.00	0.00

This table reports summary statistics regarding the variables used in this study. Age at Tenure is defined as the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship. Female is a dummy variable that equals 1, if a professor is a woman. PhD Top Reputation University is a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors. International PhD is a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany. Same University Graduation and PhD is a dummy variable that equals 1, if a professor obtained the graduation and the PhD from the same university. # of Different Coauthors is defined as the number of unique coauthors that the professors collaborated with based on their publications until they obtained their first professorship. Average # of Authors per Publication is defined as the average number of authors over all publications that the professors have published until they obtained their first tenured professorship. Publications with German Title is defined as the fraction of publications that have a German title in all publications that a professor has published until obtaining the first tenured professorship. Publications in DACH Journals is defined as the fraction of publications in journals that originate from one of the three DACH countries in all publications that a professor has published until obtaining the first tenured professorship. Publications in GBE Journals is defined as the fraction of publications in traditional German business economics journals in all publications that a professor has published until obtaining the first tenured professorship. At Least One GBE Journal is defined as the fraction of professors who have published at least once in a German business economics journals until obtaining the first tenured professorship. # Jourqual A is defined as the number of publications in A journals (according to the Jourqual 3) a professor has published until obtaining the first tenured professorship. At Least One Jourqual A is defined as the fraction of professors that has published at least once in an A journal (according to the Jourqual 3) until obtaining the first tenured professorship. # Jourqual A+ is the number of publications in A+ journals (according to the Jourqual 3) a professor has published until obtaining the first tenured professorship. At Least One Jourqual A+ is defined as the fraction of professors that has published at least once in an A+ journal (according to the Jourqual 3) until obtaining the first tenured professorship. # FT50 is defined as the number of publications in FT50 journals a professor has published until obtaining the first tenured professorship. At Least One FT50 is defined as the fraction of professors that has published at least once in an FT50 journal until obtaining the first tenured professorship.

Research), the *Zeitschrift für betriebswirtschaftliche Forschung*, and *Die Betriebswirtschaft*. Again, we estimate the percentage of these journals with all the publications that a professor published before obtaining his or her first tenured professorship. Fourth, we define a dummy variable that equals 1 if a professor published at least once in one of the journals listed above before he or she obtained his or her first tenured professorship. Based on this dummy, we calculate the percentage of professors with *At Least One GBE Journal* publication.

Finally, we define six variables to capture so-called top publications, i.e., publications in highly renowned journals. For the first four variables, we use the journal rating Jourqual 3 (JQL3), which is issued by the *German Academic Association of Business Research (VHB)*. First, we calculate the number of publications in A journals¹³ (*# Jourqual A*) of each professor before obtaining his or her first tenured professorship. Second, we define a dummy variable that equals 1 if a professor had at least one such publication before he or she obtained his or her first tenured professorship. Based on this dummy, we calculate the percentage of professors with *At Least One Jourqual A* publication. We perform similar calculations using publications in A+ journals.¹⁴ In addition, we calculate the number of publications in journals included in the Financial Times' Top 50 journals (*# FT50*)¹⁵ before a professor obtained his or her first tenured professorship as well as a dummy variable that equals 1, if a professor published at least once in such a journal before obtaining his or her first tenured position. Again, we use this variable to calculate the percentage of professors with *At Least One FT50* publication.

To investigate the relevant changes over time, we assign each professor in our data to one of three groups based on the year he or she obtained his or her first tenured professorship. The first group consists of professors who obtained *Tenure in the 1990s*. We use this group as the reference group in our regression models. The other two groups consist of professors who obtained *Tenure in the 2000s* or *Tenure in the 2010s*.

¹³ A journals are defined as leading scientific journal in the field of business economics or its sub disciplines.

¹⁴ A+ journals are defined as outstanding, world-leading scientific journal in the field of business economics or its sub disciplines.

¹⁵ Fassin (2021) and Vidgen et al. (2019) provide more information on FT50 journals.

4 Results

4.1 Changin' characteristics of professors

Table 2 provides univariate evidence on how the characteristics of newly tenured business economics professors in Germany changed from the 1990s to the 2010s. We apply a series of Bonferroni-adjusted t tests to identify significant differences among the professors who obtained tenure in one of the three decades in our observation period. Our main findings are as follows: First, the age professors obtain their first tenured professorship is rather constant—approximately 37 years in all three decades. Second, we find that the share of newly tenured female professors is low in the total sample (16.90%) but has increased over time. In particular, we document a statistically significant increase, by a factor of 2.5, from the 1990s (8.97%) to the 2010s (24.18%). Third, the clustering of professors who received their PhD from a top reputation university is rather high (41.10%). Among the professors who obtained tenure in the 1990s, this percentage is the highest (46.79%), but it is not significantly different from that in the following two decades. Fourth, while not statistically significant, we find that the percentage of professors who obtained an international PhD from the 1990s (8.33%) to the 2010s (13.55%) has increased. Finally, we document that the percentage of professors who stayed at their *alma mater* to obtain their PhD decreased significantly from the 1990s (74.36%) to the 2010s (55.31%). This finding documents an increasing preference of hiring committees for hiring people with some mobility experience in more recent generations.

Next, we run a series of Ordinary Least Squares (OLS) respectively Linear Probability Model (LPM) regressions¹⁶ to determine whether these differences persist if we include a set of control variables. In particular, we control for the field of business economics (e.g., accounting or marketing) where the professors are active, as there might be field-specific differences among the professors' characteristics. To assign the professors in our data to a field of business economics, we follow Eisend and Schuchert-Güler (2015) and assign them to one of the following seven fields: accounting, business information systems (BIS), finance, management, marketing, operations, or other. Since management professors constitute the largest group, we use them as the reference group in all our regression models.

Table 3 reports the corresponding results. Our regression results show that at the time they obtained tenure, the professors who did so in the 2000s were approximately a year (1.29) older than their peers in the 1990s. Furthermore, our results highlight how the share of newly appointed female professors increased significantly from the 1990s to the 2010s. Our regression model indicates that this percentage increased by approximately 5 percentage points between the 1990s and the 2000s and by approximately 14 percentage points between the 1990s and the 2010s. This

¹⁶ As four of our dependent variables (Female, PhD Top Reputation University, International PhD, and Same University Graduation and PhD) are dummy variables, we re-estimate our models as Logit models. Our results remain robust and are available upon request.

Table 2 Changin' characteristics

	N	Age at tenure	Female (%)	PhD Top Reputation University (%)	International PhD (%)	Same University Graduation and PhD (%)
Total Sample	781	37.11	16.90	41.10	11.27	57.49
[1] Tenure in the 1990s	156	36.38	8.97	46.79	8.33	74.36
[2] Tenure in the 2000s	352	37.71	14.77	37.22	10.79	51.70
[3] Tenure in the 2010s	273	36.75	24.18	42.86	13.55	55.31
Difference [2] – [1]		1.33***	5.76	– 9.40	2.43	– 22.80***
Difference [3] – [2]		– 0.96***	9.44***	5.46	2.79	3.75
Difference [3] – [1]		0.37	15.20***	– 3.94	5.22	– 19.05***

This table reports summary statistics regarding the characteristics of the newly tenured professors in our total sample (first row). In addition, this table reports summary statistics for the variables regarding the characteristics of the newly tenured professors dependent on the decade in which the professors obtained their first tenured professorship (second to fourth row). Age at Tenure is defined as the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship. Female is a dummy variable that equals 1, if a professor is a woman. PhD Top Reputation University is a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors. International PhD is a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany. Same University Graduation and PhD is a dummy variable that equals 1, if a professor obtained the graduation and the PhD from the same university. Finally, this table reports the differences between the average values of the professors who obtained tenure in the different decades (fifth to seventh row). We apply a series of Bonferroni-adjusted t tests in order to determine whether the reported differences are statistically significant from each other. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

finding complements evidence on an increasing percentage of female economics professors in the DACH region (Hilber et al. 2021).

In addition, we find that the percentage of professors who received their PhD at a top reputation university decreased slightly (8.65 percentage points) from the 1990s to the 2000s. However, we do not observe a continuing trend of higher heterogeneity in PhD-granting institutions for prospective professors in the most recent decade. In terms of mobility, our results show that the professors who obtained tenure more recently have been more mobile than their predecessors. If we focus on the percentage of professors who obtained their PhD internationally, we document a significant increase of 5.27 percentage points between the 1990s and the 2010s. Regarding the percentage of professors who graduated and then obtained their PhD at the same university, our results show significant differences between the 1990s and the 2000s (22.54 percentage points) and the 1990s and the 2010s (17.58 percentage points).

Regarding the various fields of business economics, we find that accounting, business information systems, and finance professors are less likely to be female than management professors—our reference group in the regressions. Finance and

Table 3 Changin' characteristics—regressions

Dependent variable	Age at Tenure	Female	PhD Top Reputation University	International PhD	Same University Graduation and PhD
	(1)	(2)	(3)	(4)	(5)
Mean left-hand side	37.1076	0.1690	0.4110	0.1127	0.5749
<i>Tenure in the 2000s</i>	1.2881*** (0.2834)	0.0539* (0.0297)	− 0.0865* (0.0476)	0.0219 (0.0276)	− 0.2254*** (0.0444)
<i>Tenure in the 2010s</i>	0.3492 (0.3147)	0.1428*** (0.0347)	− 0.0143 (0.0499)	0.0527* (0.0303)	− 0.1758*** (0.0466)
Accounting	− 0.2301 (0.3557)	− 0.0766* (0.0413)	0.0680 (0.0511)	− 0.1204*** (0.0306)	0.1242** (0.0509)
BIS	− 0.0647 (0.4696)	− 0.1707*** (0.0435)	0.0574 (0.0718)	− 0.0664 (0.0462)	0.0519 (0.0724)
Finance	− 0.3493 (0.3657)	− 0.1169*** (0.0415)	0.1631*** (0.0574)	− 0.0087 (0.0422)	0.1168** (0.0563)
Marketing	− 0.8032** (0.3983)	− 0.0633 (0.0489)	0.1934*** (0.0609)	− 0.0616 (0.0402)	0.0328 (0.0593)
Operations	− 0.0842 (0.3899)	− 0.0565 (0.0493)	− 0.1163** (0.0554)	− 0.0813** (0.0386)	− 0.0308 (0.0607)
Other	1.9396*** (0.7197)	− 0.1107* (0.0612)	− 0.0869 (0.0858)	− 0.0105 (0.0683)	− 0.0124 (0.0925)
Constant	36.5421*** (0.3015)	0.1625*** (0.0370)	0.4059*** (0.0508)	0.1355*** (0.0321)	0.6901*** (0.0481)
p value for test: <i>Tenure in the 2000s = Tenure in the 2010s</i>	0.0008***	0.0066***	0.0665*	0.2449	0.2194
Observations	781	781	781	781	781
R ²	0.0498	0.0413	0.0455	0.0255	0.0445
Adjusted R ²	0.0399	0.0313	0.0356	0.0154	0.0346
F Statistic	5.0523***	4.1548***	4.6041***	2.5225**	4.4893***

This table reports the results of five OLS/LPM regressions. The dependent variables concern the characteristics of the newly tenured professors and are introduced in Sect. 3. Age at Tenure is defined as the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship. Female is a dummy variable that equals 1, if a professor is a woman. PhD Top Reputation University is a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors. International PhD is a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany. Same University Graduation and PhD is a dummy variable that equals 1, if a professor obtained the graduation and the PhD from the same university. Tenure in the 2000s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. Tenure in the 2010s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2010s. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). All models are estimated using heteroscedasticity-robust standard errors. Additionally, we report p values from Wald F Tests, which test the equality of coefficients on Ten-

Table 3 (continued)

ure in the 2000s and Tenure in the 2010s. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 4 Changin' networks

	N	# of Different Coauthors	Average # of Authors per Publication
Total Sample	781	6.99	2.07
[1] Tenure in the 1990s	156	3.28	1.56
[2] Tenure in the 2000s	352	6.23	1.95
[3] Tenure in the 2010s	273	10.10	2.52
Difference [2] – [1]		2.95***	0.39***
Difference [3] – [2]		3.87***	0.57***
Difference [3] – [1]		6.82***	0.96***

This table reports summary statistics regarding the networks of the newly tenured professors in our total sample (first row). In addition, this table reports summary statistics for the variables regarding the networks of the newly tenured professors dependent on the decade in which the professors obtained their first tenured professorship (second to fourth row). # of Different Coauthors is defined as the number of unique coauthors that the professors collaborated with based on their publications until they obtained their first professorship. Average # of Authors per Publication is defined as the average number of coauthors over all publications that the professors have published until they obtained their first tenured professorship. Finally, this table reports the differences between the average values of the professors who obtained tenure in the different decades (fifth to seventh row). We apply a series of Bonferroni-adjusted t tests in order to determine whether the reported differences are statistically significant from each other. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

marketing professors are more likely to be educated at a top reputation university than management professors—again, our reference group in the regressions. Furthermore, operations professors are less likely to obtain their PhD at a top reputation university than their peers in management. Finally, accounting and operations professors are less likely to obtain their PhD internationally than management professors.

4.2 Changin' networks

Table 4 presents univariate evidence on the changes in professional networks over time. Again, we apply Bonferroni-adjusted t tests to determine whether the professors who obtained tenure in the three decades differ in terms of their networks. In general, we find that professional networks increased over time. For example, while newly tenured professors in the 1990s collaborated with 3.28 different coauthors before they obtained tenure, this value roughly tripled until the 2010s, where the

Table 5 Changin' networks—regressions

Dependent variable	# of Different Coauthors	Average # of Authors per Publication
	(1)	(2)
Mean left-hand side	6.9923	2.0741
<i>Tenure in the 2000s</i>	3.2414*** (0.4456)	0.4281*** (0.0547)
<i>Tenure in the 2010s</i>	6.9210*** (0.5336)	0.9549*** (0.0586)
Accounting	− 0.1783 (0.5479)	− 0.1634*** (0.0567)
BIS	5.0264*** (1.1124)	0.3884*** (0.1000)
Finance	− 0.2625 (0.5335)	− 0.0520 (0.0650)
Marketing	2.0838*** (0.7084)	0.3302*** (0.0776)
Operations	1.9402** (0.8842)	0.2010*** (0.0718)
Other	− 0.2741 (0.9030)	0.0305 (0.1223)
Age at tenure	− 0.0425 (0.0691)	− 0.0101 (0.0068)
Female	− 1.4563*** (0.5237)	− 0.0073 (0.0602)
PhD Top Reputation University	0.4262 (0.4188)	0.0657 (0.0445)
International PhD	0.9054 (0.6754)	− 0.0029 (0.0652)
Constant	3.8322 (2.6315)	1.8402*** (0.2601)
p value for test: <i>Tenure in the 2000s</i> = <i>Tenure in the 2010s</i>	0.0000***	0.0000***
Observations	781	781
R ²	0.2137	0.3343
Adjusted R ²	0.2014	0.3239
F Statistic	17.3888***	32.1361***

This table reports the results of two OLS regressions. The dependent variables concern the networks of the newly tenured professors and are introduced in Sect. 3. # of Different Coauthors is defined as the number of unique coauthors that the professors collaborated with based on their publications until they obtained their first professorship. Average # of Authors per Publication is defined as the average number of coauthors over all publications that the professors have published until they obtained their first tenured professorship. *Tenure in the 2000s* is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. *Tenure in the 2010s* is a dummy variable that equals 1, if a

Table 5 (continued)

professor obtained the first tenured professorship in the 2010s. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), and International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany). All models are estimated using heteroscedasticity-robust standard errors. Additionally, we report p values from Wald F Tests, which test the equality of coefficients on Tenure in the 2000s and Tenure in the 2010s. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

average number of different coauthors equals 10.10. We observe a similar pattern if we focus on the average number of authors per paper. In the 1990s, an average paper was written by 1.56 authors. This value increased by roughly one additional coauthor until the 2010s (2.52).

Again, we estimate two OLS regressions to determine whether these results persist if we account for a series of control variables. In addition to the business economics fields, we control for the characteristics of the professors we introduced in the previous section. We control for the business economics fields because there is evidence suggesting that publication behavior might differ among different business economics fields (see, e.g., Eisend and Schmidt (2014) or Eisend and Schuchert-Güler (2015)). We include control variables regarding the professors' characteristics because there is evidence that international visits might increase the network of researchers (Bäker et al. 2016, 2021) or that there are gender differences in network sizes and structures (Essen and Smith 2022; Ghosh and Liu 2020; McDowell et al. 2006; Spurk et al. 2015).

Table 5 displays the results of these OLS regressions. After including the set of control variables, we document a significant increase in the two variables that capture the professional networks of the professors. The difference in the number of different coauthors between professors tenured in the 1990s and their peers tenured in the 2000s is 3.24, which is also statistically significant. The difference between professors who received tenure in the 2010s and those who received tenure in the 1990s is 6.92 and is also statistically significant. We document a similar trend for the average number of authors per paper. The difference between professors tenured in the 1990s and the 2000s (0.43) is statistically significant, which also holds true for the difference between professors tenured in the 1990s and the 2010s (0.95). These results are in line with previous research that has documented the increasing importance of scientific collaboration (Acedo et al. 2006; Jones 2021; Wuchty et al. 2007).

Concerning the control variables, our results show that, in particular professors in the fields of business information systems, marketing, and operations operate in significantly larger professional networks than their peers in management, our reference group. Furthermore, we find that women maintain smaller professional networks than men, which is in line with previous studies (Ghosh and Liu 2020; McDowell et al. 2006).

Table 6 Changin' national focus

	<i>N</i>	Publications with German title (%)	Publications in DACH journals (%)	Publications in GBE journals (%)	At least one GBE journal (%)
Total Sample	781	52.80	62.14	13.88	57.87
[1] Tenure in the 1990s	156	80.26	86.81	20.64	67.95
[2] Tenure in the 2000s	352	58.61	69.66	14.71	59.66
[3] Tenure in the 2010s	273	29.60	38.34	8.93	49.82
Difference [2] – [1]		– 21.64***	– 17.15***	– 5.93***	– 8.29
Difference [3] – [2]		– 29.01***	– 31.33***	– 5.78***	– 9.84**
Difference [3] – [1]		– 50.65***	– 48.48***	– 11.70***	– 18.13***

This table reports summary statistics regarding the national focus of the newly tenured professors in our total sample (first row). In addition, this table reports summary statistics for the variables regarding the national focus of the newly tenured professors dependent on the decade in which the professors obtained their first tenured professorship (second to fourth row). Publications with German Title is defined as the fraction of publications that have a German title in all publications that a professor has published until obtaining the first tenured professorship. Publications in DACH Journals is defined as the fraction of publications in journals that originate from one of the three DACH countries in all publications that a professor has published until obtaining the first tenured professorship. Publications in GBE Journals is defined as the fraction of publications in traditional German business economics journals in all publications that a professor has published until obtaining the first tenured professorship. At Least One GBE Journal is defined as the fraction of professors who have published at least once in a German business economics journals until obtaining the first tenured professorship. Finally, this table reports the differences between the average values of the professors who obtained tenure in the different decades (fifth to seventh row). We apply a series of Bonferroni-adjusted *t* tests in order to determine whether the reported differences are statistically significant from each other. Significance levels are denoted as follows: **p* < 0.1; ***p* < 0.05; ****p* < 0.01

4.3 Changin' national focus

Table 6 reports changes regarding the national focus among the professors in our data, which we test for statistical difference using a series of Bonferroni-adjusted *t* tests. Generally, we find strong evidence for a decreasing national focus. More precisely, we find that the mean percentage of papers with a German title in newly tenured professor's publication list decreased substantially, from 80.26% (1990s) to 29.60% (2010s). The same effect is documented for publications in DACH journals. Professors who obtained tenure in the 1990s published 86.81% of their papers in such journals before receiving tenure, whereas the professors who obtained tenure in the 2010s only published an average of 38.34% of their papers in DACH journals. Additionally, we document that the percentage of papers in traditional German business economics journals decreased from the 1990s (20.64%) to the 2010s (8.93%). However, we find that the percentage of professors with at least one publication in a traditional German business economics journal when obtaining his or her first tenured professorship was at a high level initially and then decreased less severely, from 67.95% (1990s) to 49.82% (2010s). Therefore, our results show that approximately one in two professors who obtained tenure in the 2010s had published at least once

in one of the traditional German business economics journals before obtaining a tenured professorship.¹⁷

Next, we estimate a series of OLS/LPM¹⁸ regressions, again, to determine whether these results persist if we include a series of control variables. In addition to the controls in our previous model, we control for the number of different coauthors that a professor collaborated with before he or she obtained his or her first tenured professorship. We include this variable because we assume that professors who collaborated more intensively published more often internationally, since the likelihood that they had international coauthors increases.

Table 7 shows the respective regression results, which corroborate our univariate evidence implying that the national focus has substantially decreased. Our regression estimates highlight how the percentage of papers with a German title is significantly lower among professors who obtained tenure in the 2000s (-0.21) and in the 2010s (-0.46) than for their peers who received tenure in the 1990s. The same holds true for the percentage of papers in DACH journals, where the regression coefficients indicate differences as large as -0.16 (Tenure in the 2000s) and -0.43 (Tenure in the 2010s). Furthermore, we find that the percentage of papers in traditional German business economics journals has also decreased. Our regression yields differences as large as -0.04 (Tenure in the 2000s) and -0.09 (Tenure in the 2010s). Finally, our results also show that the percentage of professors with at least one publication in a German business economics journal significantly decreased from the 1990s to the 2010s (-0.19). These results are in line with Buehling (2021) who provides evidence how German-based economics researchers began to focus more on international topics in the late 2000s. Our results are also in line with findings by Ayaita et al. (2019), who argue that changes in publication behavior have probably resulted from a focal shift toward publications in highly renowned international journals.

With respect to our control variables, we find that accounting professors in particular publish their work with a stronger national focus than management professors, our reference group. In contrast, business information systems professors and operations professors possess a weaker national focus than management professors. Furthermore, we find that professors who obtained their PhD internationally have a weaker national focus in regard to publishing their work. Finally, professors with larger professional networks, based on their number of different coauthors, also possess a weaker national focus.

¹⁷ Please find the most common journal outlets among the professors dependent on the decade in which they obtained their first tenured professorship in Appendix E. Among the most common journal outlets in all three groups, traditional German business economics journals such as the *Journal of Business Economics* rank among the top.

¹⁸ As one of our dependent variables (At Least One GBE Journal) is a dummy variable, we re-estimate this model as a Logit model. Our results remain robust and are available upon request.

Table 7 Changin' national focus—regressions

Dependent variable	Publications with German Title	Publications in DACH Journals	Publications in GBE Journals	At Least One GBE Journal
	(1)	(2)	(3)	(4)
Mean left-hand side	0.5280	0.6214	0.1388	0.5787
<i>Tenure in the 2000s</i>	– 0.2120*** (0.0249)	– 0.1605*** (0.0227)	– 0.0395* (0.0211)	– 0.0612 (0.0466)
<i>Tenure in the 2010s</i>	– 0.4598*** (0.0270)	– 0.4310*** (0.0256)	– 0.0867*** (0.0207)	– 0.1886*** (0.0519)
Accounting	0.1925*** (0.0272)	0.2020*** (0.0247)	0.0379* (0.0216)	0.1324*** (0.0498)
BIS	– 0.0638 (0.0429)	– 0.0436 (0.0402)	– 0.0936*** (0.0187)	– 0.3300*** (0.0686)
Finance	– 0.0817*** (0.0313)	– 0.0357 (0.0314)	– 0.0317 (0.0204)	– 0.0312 (0.0567)
Marketing	0.0069 (0.0313)	– 0.0326 (0.0295)	0.0030 (0.0216)	0.0914 (0.0575)
Operations	– 0.1221*** (0.0315)	– 0.1219*** (0.0298)	– 0.0259 (0.0207)	– 0.0405 (0.0586)
Other	0.0219 (0.0548)	– 0.0122 (0.0488)	– 0.0724*** (0.0227)	– 0.1372 (0.0895)
Age at tenure	0.0088*** (0.0030)	0.0041 (0.0029)	– 0.0037** (0.0017)	– 0.0167*** (0.0050)
Female	– 0.0432 (0.0267)	– 0.0205 (0.0248)	– 0.0096 (0.0164)	– 0.0795* (0.0443)
PhD Top Reputation University	0.0155 (0.0196)	0.0225 (0.0187)	0.0367*** (0.0134)	0.0666* (0.0348)
International PhD	– 0.1640*** (0.0319)	– 0.2234*** (0.0317)	– 0.0730*** (0.0129)	– 0.2052*** (0.0556)
# of Different Coauthors	– 0.0038** (0.0015)	– 0.0042*** (0.0014)	– 0.0033*** (0.0009)	0.0061* (0.0034)
Constant	0.4943*** (0.1152)	0.7257*** (0.1096)	0.3533*** (0.0637)	1.2595*** (0.1885)
p value for test: <i>Tenure in the 2000s</i> = <i>Tenure in the 2010s</i>	0.0000***	0.0000***	0.0002***	0.0016***
Observations	781	781	781	781
R ²	0.4409	0.4730	0.1408	0.1218
Adjusted R ²	0.4314	0.4641	0.1263	0.1069
F Statistic	46.5223***	52.9512***	9.6722***	8.1797***

This table reports the results of four OLS/LPM regressions. The dependent variables concern the national focus of the newly tenured professors and are introduced in Sect. 3. Publications with German Title is defined as the fraction of publications that have a German title in all publications that a professor has published until obtaining the first tenured professorship. Publications in DACH Journals is defined

Table 7 (continued)

as the fraction of publications in journals that originate from one of the three DACH countries in all publications that a professor has published until obtaining the first tenured professorship. Publications in GBE Journals is defined as the fraction of publications in traditional German business economics journals in all publications that a professor has published until obtaining the first tenured professorship. At Least One GBE Journal is defined as the fraction of professors who have published at least once in a German business economics journals until obtaining the first tenured professorship. Tenure in the 2000s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. Tenure in the 2010s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2010s. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany), and the # of Different Coauthors. All models are estimated using heteroscedasticity-robust standard errors. Additionally, we report p values from Wald F Tests, which test the equality of coefficients on Tenure in the 2000s and Tenure in the 2010s. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

4.4 Changin' top publications

Table 8 reports our univariate findings—based on a series of Bonferroni-adjusted t tests—in terms of shifting concerns with publishing in highly renowned journals. In general, we document an increased focus on top publications over time. For example, professors who obtained tenure in the 1990s on average published 0.37 papers (not adjusted for coauthorship) in A journals according to the JQL3 before receiving tenure. This number increases fourfold for professors who received tenure in the 2010s, who published 1.58 papers in A journals before they obtained their first tenured professorship. We document a similar pattern if we focus on the percentage of professors who published at least one paper in an A journal before they obtained their first tenured professorship. In the 1990s only 17.31% of the professors in our data had at least one such publication, whereas 60.44% of the professors who obtained tenure in the 2010s published at least one paper in an A journal before receiving tenure. Similar effects can be found for publications in A+ journals and FT50 journals. For example, the average professor in the 1990s published 0.08 papers in an FT50 journal. This number increased approximately tenfold, to 0.89, in the 2010s.

To corroborate that these results persist if we add our set of control variables, we again run a series of OLS/LPM regression models.¹⁹ We apply the same set of controls as in our previous model.

Table 9 presents the results of these regression models, which corroborate our univariate evidence. In particular, we find that the professors who obtained tenure in the 2000s and 2010s published significantly more papers in top journals than their peers who obtained tenure in the 1990s. For example, professors who obtained their

¹⁹ As three of our dependent variables (At Least One Jourqual A, At Least One Jourqual A+, and At Least One FT50) are dummy variables, we re-estimate our models as Logit models. Our results remain robust and are available upon request.

Table 8 Changin' top publications

	N	# Jourqual A	At least one Jourqual A (%)	# Jourqual A+	At least one Jourqual A+ (%)	# FT50	At least one FT50 (%)
Total Sample	781	0.88	38.54	0.16	10.11	0.43	21.64
[1] Tenure in the 1990s	156	0.37	17.31	0.06	4.49	0.08	5.77
[2] Tenure in the 2000s	352	0.56	30.97	0.10	7.39	0.22	14.49
[3] Tenure in the 2010s	273	1.58	60.44	0.29	16.85	0.89	39.93
Difference [2] – [1]		0.19	13.66***	0.04	2.90	0.14	8.72
Difference [3] – [2]		1.02***	29.47***	0.19***	9.46***	0.67***	25.44***
Difference [3] – [1]		1.20***	43.13***	0.24***	12.36***	0.81***	34.16***

This table reports summary statistics regarding the top publications of the newly tenured professors in our total sample (first row). In addition, this table reports summary statistics for the variables regarding the top publications of the newly tenured professors dependent on the decade in which the professors obtained their first tenured professorship (second to fourth row). # Jourqual A is defined as the number of publications in A journals (according to the Jourqual 3) a professor has published until obtaining the first tenured professorship. At Least One Jourqual A is defined as the fraction of professors that has published at least once in an A journal (according to the Jourqual 3) until obtaining the first tenured professorship. # Jourqual A+ is the number of publications in A+ journals (according to the Jourqual 3) a professor has published until obtaining the first tenured professorship. At Least One Jourqual A+ is defined as the fraction of professors that has published at least once in an A+ journal (according to the Jourqual 3) until obtaining the first tenured professorship. # FT50 is defined as the number of publications in FT50 journals a professor has published until obtaining the first tenured professorship. At Least One FT50 is defined as the fraction of professors that has published at least once in an FT50 journal until obtaining the first tenured professorship. Finally, this table reports the differences between the average values of the professors who obtained tenure in the different decades (fifth to seventh row). We apply a series of Bonferroni-adjusted t tests in order to determine whether the reported differences are statistically significant from each other. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 9 Changin' top publications—regressions

Dependent variable	# Jourqual A	At Least One Jourqual A	# Jourqual A+	At Least One Jourqual A+	At Least One Jourqual A+	# FT50	At Least One FT50
	(1)	(2)	(3)	(4)	(5)	(6)	
Mean left-hand side	0.8758	0.3854	0.1601	0.1011	0.4302	0.2164	
<i>Tenure in the 2000s</i>	0.0459 (0.1193)	0.1219*** (0.0415)	0.0746** (0.0365)	0.0472** (0.0240)	0.1086* (0.0601)	0.0840*** (0.0288)	
<i>Tenure in the 2010s</i>	0.7355*** (0.1688)	0.3465*** (0.0504)	0.2446*** (0.0555)	0.1225*** (0.0311)	0.6441*** (0.1008)	0.2984*** (0.0404)	
Accounting	−0.3638*** (0.1210)	−0.0997*** (0.0463)	0.0142 (0.0295)	−0.0077 (0.0221)	−0.2229*** (0.0790)	−0.1229*** (0.0372)	
BIS	−0.0634 (0.2527)	−0.0035 (0.0656)	0.0629 (0.0738)	−0.0163 (0.0325)	−0.3438*** (0.1234)	−0.1803*** (0.0478)	
Finance	0.1068 (0.1581)	0.1070** (0.0525)	0.1786** (0.0701)	0.0628* (0.0344)	−0.0560 (0.1011)	−0.0491 (0.0448)	
Marketing	0.0320 (0.1633)	0.1144** (0.0555)	0.3750*** (0.0764)	0.2270*** (0.0468)	0.2487* (0.1292)	0.1099** (0.0530)	
Operations	0.7026*** (0.2208)	0.1564*** (0.0565)	0.1074* (0.0575)	0.0348 (0.0325)	0.2475 (0.1606)	0.0003 (0.0503)	
Other	−0.3321** (0.1469)	−0.0682 (0.0722)	0.0775 (0.0811)	0.0464 (0.0559)	−0.0875 (0.1308)	−0.0149 (0.0704)	
Age at Tenure	−0.0303** (0.0138)	−0.0075 (0.0050)	−0.0064 (0.0048)	−0.0065** (0.0030)	−0.0076 (0.0103)	−0.0046 (0.0044)	
Female	−0.1037 (0.1280)	−0.0049 (0.0446)	−0.0884** (0.0438)	−0.0432 (0.0281)	−0.1649 (0.1008)	−0.0618 (0.0378)	
PhD Top Reputation University	−0.0776 (0.1000)	0.0347 (0.0328)	0.0658* (0.0370)	0.0345* (0.0206)	0.0862 (0.0695)	0.0353 (0.0279)	
International PhD	0.0744	0.0237	0.3021***	0.1816***	0.3565***	0.1728***	

Table 9 (continued)

Dependent variable	# Journal A	At Least One Journal A	# Journal A+	At Least One Journal A+	At Least One Journal A+	# FT50	At Least One FT50
Mean left-hand side	(1)	(2)	(3)	(4)	(5)	(6)	
	0.8758	0.3854	0.1601	0.1011	0.4302	0.2164	
	(0.1772)	(0.0561)	(0.0854)	(0.0476)	(0.1335)	(0.0528)	
# of Different Coauthors	0.0632***	0.0122***	0.0009	0.0012	0.0223**	0.0060**	
	(0.0181)	(0.0041)	(0.0028)	(0.0018)	(0.0100)	(0.0029)	
Constant	1.3035**	0.3590*	0.1260	0.2003*	0.2565	0.2156	
	(0.5359)	(0.1910)	(0.1854)	(0.1127)	(0.3991)	(0.1663)	
p value for test: <i>Tenure in the 2000s = Tenure in the 2010s</i>	0.0000***	0.0000***	0.0004***	0.0036***	0.0000***	0.0000***	
Observations	781	781	781	781	781	781	
R ²	0.2297	0.1890	0.1314	0.1453	0.1759	0.1855	
Adjusted R ²	0.2166	0.1753	0.1167	0.1308	0.1620	0.1717	
F Statistic	17.5918***	13.7495***	8.9289***	10.0295***	12.5953***	13.4352***	

This table reports the results of six OLS/LPM regressions. The dependent variables concern the top publications of the newly tenured professors and are introduced in Sect. 3. # Journal A is defined as the number of publications in A journals (according to the Journal 3) a professor has published until obtaining the first tenured professorship. At Least One Journal A is defined as the fraction of professors that has published at least once in an A journal (according to the Journal 3) until obtaining the first tenured professorship. # Journal A+ is the number of publications in A+ journals (according to the Journal 3) a professor has published until obtaining the first tenured professorship. At Least One Journal A+ is defined as the fraction of professors that has published at least once in an A+ journal (according to the Journal 3) until obtaining the first tenured professorship. # FT50 is defined as the number of publications in FT50 journals a professor has published until obtaining the first tenured professorship. At Least One FT50 is defined as the fraction of professors that has published at least once in an FT50 journal until obtaining the first tenured professorship. Tenure in the 2000s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. Tenure in the 2010s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2010s. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany), and the # of Different Coauthors. All models are estimated using heteroscedasticity-robust standard errors. Additionally, we report p values from Wald F Tests, which test the equality of coefficients on Tenure in the 2000s and Tenure in the 2010s. Significance levels are denoted as follows: *p<0.1; **p<0.05; ***p<0.01

first tenured professorship in the 2010s published significantly more in A journals (0.74) than their peers who obtained their first tenured professorship in the 1990s. This result is confirmed if we focus on the share of professors with at least one publication in highly renowned journals. Among the professors who obtained tenure in the 2000s and the 2010s, the percentage with at least one A, A+, or FT50 publication is significantly higher than among the professors who obtained tenure in the 1990s. For instance, the percentage of professors with at least one A publication is significantly larger among the professors who obtained tenure in the 2000s (approximately 12 percentage points) and among the professors who obtain tenure in the 2010s (approximately 35 percentage points) than among our reference group. These results confirm anecdotal evidence that suggests there has been an increasing focus on publications in highly renowned journals among German business and economics researchers.

With respect to the differences across the business economics fields, we find mixed patterns. For example, accounting professors publish less frequently in A journals and FT50 journals than management professors, our reference group. Finance professors publish more (often) in A journals and A+ journals than management professors. Marketing professors publish more (often) in highly renowned journals than management professors in general. Operations professors publish more (often) in A and A+ journals than management professors. In addition, our results highlight how professors who have obtained their PhD internationally have more top publications than their peers who have obtained their PhD in Germany. Furthermore, we find a significantly positive relationship between the size of a professor's professional network and his or her number of top publications.

5 Further analyses

5.1 How did the introduction of *Jourqual 1* impact the publication behavior of business economics professors?

Since our paper implicitly analyzes the effects that the introduction of market-based structures and journal rankings have had on the academic job market, the question of how the introduction of the first business economics journal ranking in Germany, the *Jourqual 1* (JQL1) in 2003, has impacted the academic job market is not far to seek. In an ideal setting, one would be able to causally investigate this question. However, to do so, one would need an adequate control group, i.e., researchers who have not been affected by the introduction of this ranking (e.g., business economics professors who obtained their first tenured professorship in the Netherlands or France). However, our data do not allow such an analysis. Nevertheless, in this section, we provide some initial—yet by no means causal—evidence on how the introduction of the JQL1 might have impacted the academic job market in Germany.

Based on our sample, we build a subsample of professors who did obtain tenure until 2008 ($n=465$), i.e., the year of the introduction of the updated journal ranking *Jourqual 2*. Our empirical strategy is to estimate the impact of the introduction of this first widely employed journal ranking in Germany on the publication behavior

of the cohort of professors tenured in the period 2004–2008. For these professors, based on the JQL1, we define four additional variables, similar to those that we used in Sect. 4.4²⁰ and then enter them into four regression models as the left-hand side variables. Our variable of interest is a newly defined dummy variable, *Tenure Post JQL1*, which equals 1 if a professor obtained his or her first tenured professorship between 2004 and 2008. Additionally, we control for the same set of control variables as in the previous section.²¹ Our analyses indicate that the percentage of professors who published at least once in an A journal according to the JQL1 before obtaining their first tenured professorship has increased significantly. The magnitude of the coefficient equals 0.16, which is also economically meaningful, given that only approximately 27% of the professors in this subsample published at least once in an A journal according to the JQL1. With respect to our other three dependent variables our regressions yield no significant differences (even though the coefficient sizes are economically meaningful) between the professors who obtained their first tenured professorship after the introduction of the JQL1 and those who obtained their first tenured professorship beforehand.

In summary, our analyses suggest that the introduction of the JQL1 has impacted the academic job market in German business economics, at least to some extent. However, since our results lack causality they should be interpreted carefully. Nevertheless, causal evidence provided by Buehling (2021) shows that the introduction of the *Handelsblatt* ranking in Germany caused German economists to shift their research topics. Hence, we expect that the introduction of the JQL1 has also impacted German business economics.

5.2 Differing hiring standards at universities

Another factor that could impact our results might be the heterogeneity of university departments. For example, some of our results might have been driven by the fact that particularly renowned university departments have different standards or selection criteria than departments in less renowned universities. To address this issue, we define a dummy variable called *Tenure at Renowned University* that equals 1 if a professor in our sample obtained his or her first tenured professorship at a particularly renowned university, as defined by Clermont (2016).²² We re-estimate all our

²⁰ First, we calculate the number of the publications in A journals (# Jourqual 1 A) of each professor before obtaining his or her first tenured professorship. Second, we define a dummy variable that equals 1 if a professor had at least one such publication before he or she obtained his or her first tenured professorship. Based on this dummy, we calculate the percentage of professors with At Least One Jourqual 1 A publication. We perform similar calculations with the publications in A+ journals.

²¹ The relevant results are listed in Appendix B.

²² We define the following universities as particularly renowned for their business economics departments: Free University of Berlin, Humboldt University of Berlin, Goethe University Frankfurt, Kiel University, University of Mannheim, Ludwig Maximilian University of Munich, Technical University of Munich, University of Münster, WHU—Otto Beisheim School of Management.

regression models after adding this new dummy variable²³ and find that all our main findings are robust to its inclusion. Concerning the reputation of the hiring university, we find that the professors who have obtained tenure at a renowned university on average are younger, less likely to be a woman, less likely to have obtained their PhD at a university with a high reputation, and more likely to have received their PhD internationally. Additionally, we find that the professors who have obtained tenure at a renowned university possess larger networks, as measured by both our variables. Regarding their national focus, we find that these professors publish less often using German titles and less often in DACH journals. Finally, we find that professors who have obtained their first tenured professorship at a renowned university have more publications in highly renowned international journals, i.e., more publications in A, A+, and FT50 journals.

In an additional analysis, we also investigate the heterogeneity in the size of the appointing department. To do so, we rank the university departments in our data based on the number of tenured professors in our sample and define a dummy variable called *Tenure at Large University* that equals 1 if a professor in our sample obtains his or her first tenured professorship at one of the ten largest universities as defined by this measure.²⁴ Again, we re-estimate all our regression models adding this dummy variable²⁵ and find that all our main findings are robust to the inclusion of this new dummy variable. With regard to the size of the hiring department, we find that professors who obtain tenure at a large university, on average, are younger and possess larger networks, as measured by both our variables. Regarding the national focus, we find that these professors publish less often with German titles and less often in GBE journals. Finally, we find that professors who obtain their first tenured professorship at a large university have more publications in very renowned international journals, i.e., more publications in A+ and FT50 journals.

Our findings should be treated with some caution, however, since our analyses are not free of limitations. First, there are potentially better measures for defining the reputation of a university, such as its research output. However, we believe that the universities captured in our list are generally considered to have a good reputation in the German business economics community. Second, a similar argument could be made concerning our measure for a university's size. Nevertheless, we, again, consider the universities in our list as large based on their business economics department.²⁶

²³ The relevant results are listed in Appendix C.

²⁴ The following ten institutions—no particular order—the most professors: University of Hamburg, WHU—Beisheim School of Management, University of Mannheim, University of Cologne, Goethe University Frankfurt, Ludwig Maximilian University of Munich, University of Bayreuth, University of Duisburg-Essen, Frankfurt School of Finance & Management, and University of Erlangen–Nuremberg.

²⁵ The relevant results are listed in Appendix D.

²⁶ To mitigate these concerns to some extent, we conduct an additional set of robustness checks. We rely on the publicly available data provided by Forschungsmonitoring (<https://www.forschungsmonitoring.org/ranking/bwl/university>) and define the ten universities with the highest scores as particularly renowned. Our results remain robust and are available upon request.

6 Discussion

6.1 Summary of results

Based on our unique, hand-collected dataset, our study documents how the profiles of newly tenured business economics professors in Germany changed in multiple ways over the past thirty years. We document significant changes with regard to these professors' general characteristics, professional networks, national focus, and focus on top publications. Our results are generally in line with those in previous research and anecdotal evidence, as we document how business economics professors have become more diverse (i.e., in terms of their gender, the internationality of their education, or their mobility). More recently, tenured professors have built larger professional networks and have begun to conduct their research with a stronger international focus while also publishing more frequently in highly renowned international journals. In particular, our finding that German business economics professors now publish more frequently in highly renowned international journals allows us to, at least implicitly, draw conclusions of the development regarding tenure requirements over time.

6.2 Limitations

Our work is not without limitations, of course. For instance, our dataset is based on CV data, which are publicly available on the internet and thus made available by the professors themselves. The lack of obligations and common standards for reporting CV information entails a potential selection bias. Professors who are more successful might collectively share more information about themselves online than less successful professors.

A second limitation of our approach is that we capture only professors who were still active in the German university system at the end of 2018, the date of the initial compilation of our dataset. Thus, we include a higher percentage of newly appointed professors in the recent years of our three-decade investigation period. For example, it might be possible that two professors obtained their first tenured position in 1990 at the same university and that one of them still works there (we capture this person). If the other one is no longer part of the German university system for various reasons (e.g., emeritus status, left Germany, or deceased), we cannot capture this person using our approach. Unfortunately, we cannot precisely calculate the likelihood of such events, but there are reasons to believe (e.g., high level of job satisfaction, cohesive job market) that few business economics professors leave the German university system.

Third, we lack information on all the postdoctoral researchers who have sought to become tenured professors. Hence, we cannot control for competition in the job market. However, the number of applicants per tenured professorship could influence our results. Anecdotal evidence suggests that there were more applicants for professorships in the 2010s than in the 1990s. In this period, due to the German unification, a large number of newly created professorships in the eastern part of

Germany were probably associated with less harsh competition for tenured professorships. Since the 2000s, higher job market competition has caused professors to need stronger publication records before they are able to become tenured. An alternative explanation, however, could be that there were more postdoctoral researchers in the system in the later years of our observation period, allowing hiring committees to be more selective than in earlier years. However, to the best of our knowledge, there is no empirical evidence on this matter, which could be addressed in future research.

Finally, our findings might not be generalizable to different country contexts or different academic disciplines. For example, Backes-Gellner and Schlinghoff (2010) elaborate on the differences in the incentive structure of the (traditional) German and U.S. systems. In this context, they also find differences regarding publication output during different career phases among researchers in Germany and U.S. Additionally, Auranen and Nieminen (2010) show that the university funding system in Germany differs from those in other countries, which might also undermine the generalizability of our findings to different country contexts. Regarding the generalizability to different academic disciplines, prior research has highlighted how disparate tenure standards appear to apply in different academic fields, such as sociology (Lutter and Schröder 2016), psychology (Lutter et al. 2022), or political science (Schröder et al. 2021). Hence, we assume that our findings might not be transferable to other academic fields without further ado.

6.3 Implications for research

Even though we do not provide any causal evidence, we believe that the documented changes are related to the shifts in the economic incentives for junior researchers caused by NPM (Schmoch and Schubert 2010; Schubert 2009) and the introduction of journal rankings (Buehling 2021; Vogel et al. 2017). These have partly been driven by the use of performance-based indicators at universities to allocate funds or make tenure decisions based on the research outputs of professors and junior researchers (Rabovsky 2014). Schubert (2009), for example, documents how these reforms have actually increased research efficiency among German research units. Additionally, Ayaita et al. (2019) link their finding that younger researchers rely more heavily on journal publications than their predecessors to reforms associated with NPM. Our results extend this literature by highlighting additional changes in the profiles of the newly tenured business economics professors who have been exposed to these reforms. Furthermore, our analyses regarding the introduction of the JQL1 provide further insights concerning the question of how the introduction of journal rankings has affected business economics researchers.

Our paper also adds to the discussion on the intended and unintended effects of the use of personal and journal rankings (Osterloh and Frey 2015; Rost and Frey 2011). On the one hand, the critics of such rankings argue that they lead to less creativity and diversity in research. While our paper provides no direct evidence to support this claim, our results indicate that German business economics professors have indeed converged toward international research outlets, which might ultimately

have resulted in less creativity and diversity in terms of their research. On the other hand, we find that German business economics researchers have become increasingly internationally competitive. This competitiveness is intended by policymakers in Germany, who, for example, have initiated the so-called excellence initiative to make the German university system internationally more competitive (Civera et al. 2020; Menter et al. 2018).

6.4 Implications for practice

First, we provide guidance for postdoctoral researchers striving for a tenured professorship. The present paper displays the standards for the publication records of newly tenured professors in German business economics, helping young researchers identify the goals they have to accomplish. Furthermore, our paper allows us to draw conclusions regarding other aspects, such as international visits or professional networks that might help to obtain a tenured professorship. In particular, our results highlight the growing importance of publishing in larger coauthor networks. This might, among other aspects, be caused by the fact that hiring committees typically do not account for the number of coauthors when assessing a researcher's publication portfolio. Second, we provide information for the hiring committees that must assess the achievements of researchers who apply for a tenured professorship, as our paper describes several relevant benchmarks.

Finally, our paper has important practical implications for the publication strategies of junior researchers in German business economics. Despite the decreased focus on traditional German business economics journals, the fact that approximately 50% of the professors who obtained tenure in the 2010s published at least once in such a journal highlights the continuing relevance of these journals for today's business economics researchers. The persisting relevance of traditional German business economics journals is tangible when reviewing at the most common journal outlets where the professors in our sample published research before obtaining tenure (Appendix E). Our results show that traditional German business economics journals persist among the most common journal outlets for published research in the most recent decade. Thus, we find that junior business economics researchers still find it attractive to publish in "general interest" journals, such as the *Journal of Business Economics* or the *Schmalenbach Business Review* (now the *Schmalenbach Journal of Business Research*). Publishing in these journals guarantees a broad readership and might also allow more creativity and diversity in regard to research themes.

Appendix A: Correlation matrix

	Age at Tenure	Female	PhD Top Repu- tation Univer- sity	Interna- tional PhD	Same Uni- versity Gradu- ation and PhD	# of Dif- ferent Coau- thors	Aver- age # of authors per publica- tion	Publica- tions with German title	Publica- tions in DACH Journals	Publi- cations in GBE journals	At least one GBE journal	# Jour- qual A	At least one Jour- qual A	# Jour- qual A+	At least one Jour- qual A+	# FT50	At least one FT50
Age at tenure																	
Female	- 0.06																
PhD Top Reputa- tion Univer- sity	- 0.05	0.00															
Interna- tional PhD	- 0.04	0.01	- 0.03														
Same Uni- versity Gradua- tion and PhD	0.05	0.01	0.12	- 0.12													
# of dif- ferent coau- thors	- 0.03	- 0.03	0.03	0.06	- 0.07												

	Age at Tenure	Female	PhD Top Repu- tation Univer- sity	Interna- tional PhD	Same Uni- versity Gradu- ation and PhD	# of Dif- ferent Coau- thors	Aver- age # of authors per publica- tion	Publica- tions with German title	Publica- tions in DACH Journals	Publi- cations in GBE journals	At least one GBE journal	# Jour- qual A	At least one Jour- qual A	# Jour- qual A+	At least one Jour- qual A+	# FT50	At least one FT50
Average # of authors per publica- tion	- 0.06	0.07	0.05	0.03	- 0.08	0.64											
Publica- tions with German title	0.10	- 0.12	0.04	- 0.21	0.10	- 0.30	- 0.44										
Publica- tions in DACH journals	0.06	- 0.10	0.05	- 0.27	0.10	- 0.32	- 0.45	0.90									
Publica- tions in GBE journals	- 0.07	- 0.02	0.11	- 0.15	- 0.02	- 0.21	- 0.18	0.35	0.41								

Age at Tenure	Female	PhD Top Repu- tation Univer- sity	Interna- tional PhD	Same Uni- versity Gradu- ation and PhD	# of Dif- ferent Coau- thors	Aver- age # of authors per publica- tion	Publica- tions in DACH Journals with German title	Publica- tions in GBE journals	At least one GBE journal	# Jour- qual A	At least one Jour- qual A	# Jour- qual A+	At least one Jour- qual A+	At least one FT50
At least one GBE journal	-0.12	-0.07	0.09	-0.15	-0.04	-0.01	-0.11	0.31	0.37	0.63				
# Jourqual A	-0.09	0.01	-0.03	0.05	-0.10	0.37	0.32	-0.46	-0.17	-0.07				
At least one jourqual A	-0.08	0.04	0.04	0.05	-0.05	0.29	0.32	-0.50	-0.49	-0.16	-0.04	0.71		
# Jourqual A+	-0.07	-0.04	0.09	0.19	-0.05	0.11	0.19	-0.24	-0.30	-0.06	-0.04	0.15	0.22	
At least one Jourqual A+	-0.10	-0.03	0.08	0.20	-0.08	0.11	0.19	-0.23	-0.30	-0.03	-0.04	0.16	0.21	0.89
# FT50	-0.05	-0.01	0.04	0.14	-0.11	0.25	0.28	-0.34	-0.41	-0.09	-0.04	0.43	0.40	0.66
At least one FT50	-0.06	0.00	0.05	0.17	-0.10	0.22	0.25	-0.38	-0.45	-0.06	-0.02	0.38	0.45	0.57
														0.65
														0.78

This table displays a correlation matrix of the dependent variables used in the study. Bold values indicate correlations that are statistically significant on the 0.05 level

Appendix B: The effect of the introduction of *Jourqual 1* for professors tenured until 2008

Dependent variable	# Jourqual 1 A	At least one Jourqual 1 A	# Jourqual 1 A+	At least one Jourqual 1 A+
	(1)	(2)	(3)	(4)
Mean left-hand side	0.5333	0.2667	0.0989	0.0710
<i>Tenure post JQL1</i>	0.1992 (0.1243)	0.1624*** (0.0453)	0.0405 (0.0418)	0.0205 (0.0263)
Controls	Yes	Yes	Yes	Yes
Observations	465	465	465	465
R ²	0.0750	0.0864	0.0972	0.1106
Adjusted R ²	0.0504	0.0622	0.0732	0.0870
F Statistic	3.0541***	3.5625***	4.0561***	4.6824***

This table reports the results of four OLS/LPM regressions. The dependent variables concern the reaction of the newly tenured professors to the introduction of Jourqual 1 and are introduced in Sect. 5.1. # Jourqual 1 A is defined as the number of publications in A journals (according to the Jourqual 1) a professor has published until obtaining the first tenured professorship. At Least One Jourqual 1 A is defined as the fraction of professors that has published at least once in an A journal (according to the Jourqual 1) until obtaining the first tenured professorship. # Jourqual 1 A+ is the number of publications in A+ journals (according to the Jourqual 1) a professor has published until obtaining the first tenured professorship. At Least One Jourqual 1 A+ is defined as the fraction of professors that has published at least once in an A+ journal (according to the Jourqual 1) until obtaining the first tenured professorship. Tenure Post Jourqual 1 is a dummy variable that equals 1, if a professor obtained the first tenured professorship between 2004 and 2008. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany), and the # of Different Coauthors. All models are estimated using heteroscedasticity-robust standard errors. Significance levels are denoted as follows: *p<0.1; **p<0.05; ***p<0.01.

Appendix C: University heterogeneity regarding reputation

Panel A: Changin' characteristics

Dependent variable	Age at Tenure	Female	PhD Top Reputation University	International PhD	Same University Graduation and PhD
	(1)	(2)	(3)	(4)	(5)
Mean left-hand side	37.1076	0.1690	0.4110	0.1127	0.5749
Tenure in the 2000s	1.4131*** (0.2828)	0.0597** (0.0301)	- 0.0787* (0.0477)	0.0093 (0.0272)	- 0.2192*** (0.0447)
Tenure in the 2010s	0.4542 (0.3154)	0.1476*** (0.0349)	- 0.0078 (0.0500)	0.0421 (0.0302)	- 0.1706*** (0.0469)
<i>Tenure at Renowned University</i>	- 1.2352*** (0.2895)	- 0.0567* (0.0334)	- 0.0768* (0.0454)	0.1249*** (0.0377)	-0.0614 (0.0471)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	781	781	781	781	781
R ²	0.0678	0.0444	0.0488	0.0464	0.0465
Adjusted R ²	0.0569	0.0332	0.0377	0.0353	0.0354
F Statistic	6.2282***	3.9759***	4.3957***	4.1683***	4.1801***

Panel B: Changin' networks

Dependent variable	# of Different Coauthors	Average # of Authors per Publication
	(1)	(2)
Mean left-hand side	6.9923	2.0741
Tenure in the 2000s	3.0767*** (0.4410)	0.4145*** (0.0544)
Tenure in the 2010s	6.7939*** (0.5429)	0.9445*** (0.0587)
<i>Tenure at Renowned University</i>	1.4056** (0.6016)	0.1156* (0.0593)
Controls	Yes	Yes
Observations	781	781
R ²	0.2195	0.3377
Adjusted R ²	0.2063	0.3265
F Statistic	16.5912***	30.0855***

Panel C: Changin' national focus

Dependent variable	Publications with German Title	Publications in DACH Journals	Publications in GBE Journals	At Least One GBE Journal
	(1)	(2)	(3)	(4)
Mean left-hand side	0.5280	0.6214	0.1388	0.5787
Tenure in the 2000s	– 0.2067*** (0.0248)	– 0.1548*** (0.0228)	– 0.0409* (0.0212)	– 0.0559 (0.0470)
Tenure in the 2010s	– 0.4570*** (0.0270)	– 0.4279*** (0.0258)	– 0.0874*** (0.0208)	– 0.1858*** (0.0521)
<i>Tenure at Renowned University</i>	– 0.0532** (0.0238)	– 0.0572** (0.0223)	0.0135 (0.0147)	– 0.0530 (0.0444)
Controls	Yes	Yes	Yes	Yes
Observations	781	781	781	781
R ²	0.4439	0.4767	0.1415	0.1232
Adjusted R ²	0.4337	0.4671	0.1258	0.1072
F Statistic	43.6743***	49.8330***	9.0181***	7.6895***

Panel D: Changin' top publications

Dependent variable	# Jourqual A	At Least One Jourqual A	# Jourqual A+	At Least One Jourqual A+	# FT50	At Least One FT50
	(1)	(2)	(3)	(4)	(5)	(6)
Mean left-hand side	0.8758	0.3854	0.1601	0.1011	0.4302	0.2164
Tenure in the 2000s	0.0197 (0.1176)	0.1187*** (0.0415)	0.0449 (0.0368)	0.0301 (0.0237)	0.0572 (0.0624)	0.0679** (0.0286)
Tenure in the 2010s	0.7214*** (0.1679)	0.3449*** (0.0502)	0.2286*** (0.0534)	0.1133*** (0.0303)	0.6165*** (0.0988)	0.2897*** (0.0398)
<i>Tenure at Renowned University</i>	0.2616* (0.1548)	0.0312 (0.0442)	0.2968*** (0.0752)	0.1706*** (0.0373)	0.5137*** (0.1374)	0.1610*** (0.0425)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	781	781	781	781	781	781
R ²	0.2333	0.1895	0.1703	0.1859	0.2062	0.2049
Adjusted R ²	0.2193	0.1747	0.1551	0.1711	0.1917	0.1904
F Statistic	16.6471***	12.7941***	11.2286***	12.4976***	14.2100***	14.0998***

This table reports the results of seventeen OLS/LPM regressions. The dependent variables are similar to those that we used in our main analyses and are introduced in Sect. 3. Tenure in the 2000s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. Tenure in the 2010s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2010s. Tenure at Renowned University is a dummy variable that equals 1, if a professor obtained the first tenured professorship at one of the renowned business economics universities as defined by Clermont

(2016). We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany), and the # of Different Coauthors. All models are estimated using heteroscedasticity-robust standard errors. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix D: University heterogeneity regarding size

Panel A: Changin' characteristics

Dependent variable	Age at Tenure	Female	PhD Top Reputation University	International PhD	Same University Graduation and PhD
	(1)	(2)	(3)	(4)	(5)
Mean left-hand side	37.1076	0.1690	0.4110	0.1127	0.5749
Tenure in the 2000s	1.3257***	0.0562*	− 0.0881*	0.0208	− 0.2241***
	(0.2831)	(0.0298)	(0.0476)	(0.0274)	(0.0445)
Tenure in the 2010s	0.4269	0.1475***	− 0.0177	0.0504*	− 0.1732***
	(0.3123)	(0.0351)	(0.0500)	(0.0303)	(0.0469)
Tenure at Large University	− 0.7015**	− 0.0425	0.0304	0.0209	− 0.0234
	(0.3056)	(0.0311)	(0.0421)	(0.0287)	(0.0421)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	781	781	781	781	781
R ²	0.0570	0.0434	0.0462	0.0262	0.0448
Adjusted R ²	0.0460	0.0323	0.0350	0.0148	0.0337
F Statistic	5.1815***	3.8903***	4.1478***	2.3053**	4.0206***

Panel B: Changin' networks

Dependent variable:	# of Different Coauthors	Average # of Authors per Publication
	(1)	(2)
Mean left-hand side	6.9923	2.0741
Tenure in the 2000s	3.1235*** (0.4478)	0.4183*** (0.0544)
Tenure in the 2010s	6.7228*** (0.5193)	0.9385*** (0.0587)
<i>Tenure at Large University</i>	1.6268** (0.6583)	0.1343*** (0.0515)
Controls	Yes	Yes
Observations	781	781
R ²	0.2238	0.3403
Adjusted R ²	0.2106	0.3291
F Statistic	17.0111***	30.4357***

Panel C: Changin' national focus

Dependent variable:	Publications with German Title	Publications in DACH Journals	Publications in GBE Journals	At Least One GBE Journal
	(1)	(2)	(3)	(4)
Mean left-hand side	0.5280	0.6214	0.1388	0.5787
Tenure in the 2000s	- 0.2102*** (0.0249)	- 0.1588*** (0.0227)	- 0.0388* (0.0211)	- 0.0578 (0.0465)
Tenure in the 2010s	- 0.4572*** (0.0271)	- 0.4286*** (0.0258)	- 0.0856*** (0.0207)	- 0.1837*** (0.0520)
<i>Tenure at Large University</i>	- 0.0395* (0.0217)	- 0.0355 (0.0216)	- 0.0162 (0.0131)	- 0.0738* (0.0418)
Controls	Yes	Yes	Yes	Yes
Observations	781	781	781	781
R ²	0.4430	0.4748	0.1421	0.1254
Adjusted R ²	0.4329	0.4652	0.1264	0.1094
F Statistic	43.5213***	49.4668***	9.0598***	7.8467***

Panel D: Chargin' top publications

Dependent variable:	# Jourqual A	At Least One Jourqual A	# Jourqual A +	At Least One Jourqual A +	# FT50	At Least One FT50
	(1)	(2)	(3)	(4)	(5)	(6)
Mean left-hand side	0.8758	0.3854	0.1601	0.1011	0.4302	0.2164
Tenure in the 2000s	0.0424 (0.1190)	0.1204*** (0.0416)	0.0662* (0.0364)	0.0412* (0.0237)	0.0971 (0.0604)	0.0793*** (0.0288)
Tenure in the 2010s	0.7305*** (0.1700)	0.3444*** (0.0506)	0.2326*** (0.0547)	0.1140*** (0.0308)	0.6277*** (0.1003)	0.2916*** (0.0404)
Tenure at Large University	0.0743 (0.1269)	0.0316 (0.0405)	0.1790*** (0.0556)	0.1270*** (0.0310)	0.2447** (0.1045)	0.1010*** (0.0360)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	781	781	781	781	781	781
R ²	0.2301	0.1897	0.1497	0.1744	0.1848	0.1953
Adjusted R ²	0.2160	0.1749	0.1341	0.1593	0.1699	0.1806
F Statistic	16.3485***	12.8084***	9.6307***	11.5578***	12.4019***	13.2827***

This table reports the results of seventeen OLS/LPM regressions. The dependent variables are similar to those that we used in our main analyses and are introduced in Sect. 3. Tenure in the 2000s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2000s. Tenure in the 2010s is a dummy variable that equals 1, if a professor obtained the first tenured professorship in the 2010s. Tenure at Large University is a dummy variable that equals 1, if a professor obtained the first tenured professorship at one of the ten largest business economics universities in our data. We control for the field of business economics in which the professors are active that we assign based on the classification provided by Eisend and Schuchert-Güler (2015). Furthermore, we control for Age at Tenure (the difference in years between a professor's birth and the year in which the professor obtained the first tenured professorship), Female (a dummy variable that equals 1, if a professor is a woman), PhD Top Reputation University (a dummy variable that equals 1, if a professor obtained the PhD at university with a particularly high reputation in terms of educating business economics professors), International PhD (a dummy variable that equals 1, if a professor obtained the PhD in any other country than Germany), and the # of Different Coauthors. All models are estimated using heteroscedasticity-robust standard errors. Significance levels are denoted as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix E: Most common journal outlets

Rank	Journal	# of Publications
Panel A: Tenure in the 1990s		
1	Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung	99
2	Journal of Business Economics	95
3	European Journal of Operational Research	21
4	Business & Information Systems Engineering	18
5	OR Spectrum	17
Panel B: Tenure in the 2000s		
1	Journal of Business Economics	230
2	Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung	152
3	Business & Information Systems Engineering	66
4	Schmalenbach Business Review	39
5	European Journal of Operational Research	36
Panel C: Tenure in the 2010s		
1	Journal of Business Economics	130
2	Business & Information Systems Engineering	54
3	Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung	51
4	European Journal of Operational Research	46
5	Schmalenbach Business Review	34

This table reports the most common journal outlets in which the professors in our sample publish until they obtain their first tenured professorship, dependent on the decade in which they obtained their first tenured professorship

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Declarations

Conflict of interest The authors declare that they have no competing interests.

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