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Academic Inbreeding and Research Productivity in Australian Law Schools

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Abstract

This study compares the research productivity of inbred and non-inbred faculty employed at Australian law schools. The sample consists of 429 academics, employed at 21 law schools. To measure research productivity we use both articles and pages published in top law journals, defined in six different ways, as well as total citations and two different citation indices. We report results including, and excluding, publications in the home law review. We find evidence that silver-corded faculty outperform other faculty on one of the measures of research productivity, once the endogeneity of academic seniority and grant history is addressed, but this finding is not robust across alternative measures of research productivity. We find that there is no statistically significant difference between the research productivity of inbred and non-inbred faculty. This finding is robust to a range of different ways of measuring research productivity and alternative econometric approaches, including using two-stage least squares to address the endogeneity of academic seniority and grant history.

Key Words: Research productivity, law schools, Australia, academic inbreeding

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1. Introduction

Academic inbreeding refers to the practice of hiring former students of an institution as faculty members. Its prevalence differs across countries and disciplines. Academic inbreeding is common in some European countries, such as France, Portugal and Spain, and Asian countries, such as China, Japan and Korea (Cruz-Castro & Sanz-Menendez, 2010). In the United Kingdom and United States academic inbreeding is typically less than 20 per cent and often less than 10 per cent (Horta *et al.*, 2010; Navarro & Rivero, 2001). However, in the Ivy League schools in the United States, the prevalence of academic inbreeding is generally much higher (Burris, 2004).

In the discipline of law, the proportion of inbred entry-level faculty at the Harvard Law School is 81 per cent, at the Yale Law School it is 73 per cent and at Columbia Law School it is 46 per cent (Eisenberg & Wells, 2000). The Harvard Law School has a long standing tradition of offering the top graduate in each year's class the opportunity to join the Faculty (Pjesky & Sutter, 2011). At other leading law schools in the United States (eg. Berkeley, Chicago, Michigan, NYU) inbred staff represent between 20 per cent and 35 per cent of the faculty and in lesser ranked schools, the corresponding figure is generally less than 10 per cent (Eisenberg & Wells, 2000). There are no independent figures on inbreeding in Australia, but based on the sample for this project, inbreeding in Australian law schools is 7.2 per cent.

The inbreeding metaphor comes from biology, where endogamy has been known for centuries to have deleterious effects on the fitness of offspring in

animals (Kristensen & Sorenson, 2005) and humans (Bittles & Neal, 1994). Academic inbreeding is often considered to have damaging effects on scholarly achievement. One time President of Harvard, Charles Eliot (1908, p.90) stated that hiring one's own graduates was "unwise" and that academic inbreeding "has grave dangers for a university". More recently, academic inbreeding in Asia and Europe has been heavily criticized in a series of editorials in *Nature* and *Science* (see eg. Nature, 1992, 1993, 1998; Science, 1998, 2003, 2006). There is, however, relatively little empirical evidence attesting to the merits, or otherwise, of academic inbreeding. Several of the studies on academic inbreeding are largely descriptive in nature (see eg. McNeely, 1932; Reeves *et al.,* 1933; Hollingshead, 1938; Eells & Cleveland 1935a, 1935b; Horta *et al,* 2011). And, of those studies that do attempt to assess the relationship between academic inbreeding and research performance using quantitative techniques, many are exploratory, typically relying on univariate methods that do not control for a range of factors expected to be correlated with research performance (see eg. Eells & Cleveland, 1935a, 1935b; McGee, 1960; McNeely, 1932; Soler, 2001).

Many of the extant studies on academic inbreeding and research performance have other limitations (see Wyer & Conrad, 1984, for a fuller discussion). First, when measuring research performance, many existing studies focus on quantity without regard to quality of publications. Second, most studies use only one measure of productivity – ie. citations *or* publications. Third, many of the existing studies focus on staff drawn from a single university or few universities (see eg. Reeves *et al.,* 1933 - Chicago; Hollingshead, 1938 -

Indiana; McGee, 1960 - Texas). Fourth, studies, which do control for factors such as grant history and seniority when assessing the relationship between academic inbreeding and research performance in a multivariate setting, fail to address the fact that these variables are potentially endogenous. These are methodological issues that we seek to address in this paper.

A fuller understanding of the relationship between academic inbreeding and research performance is important for several reasons. First, universities are central elements in the knowledge-based economy and, in particular, have direct relevance for regional innovation (Nelson, 1993). Thus, the relationship between academic inbreeding and university research output is related to regional economic and knowledge-based outcomes (Horta *et al.,* 2010). Second, there is a growing literature on the role of mobility in facilitating inter-firm knowledge transfer (see eg. Song *et al.,* 2003). Examining the relationship between academic inbreeding and research performance contributes to our understanding of the importance of an influx of academic talent from outside on knowledge transfers and research performance in a university environment (Horta *et al.*, 2010). Third, research performance has been shown to be positively correlated with wellbeing at work in universities (Torrisi, 2012). Thus, findings of a study, such as this, have implications for the job satisfaction of staff hired from within versus those hired from universities other than that from which they graduated.

In this study we examine the relationship between academic inbreeding and research performance in Australian law schools. The main finding is that there is no significant difference in research performance between inbred and

non-inbred staff. This result remains robust, irrespective of whether we use citations, citation indices, articles or pages published to measure research productivity, whether we include or exclude publications in the home law review and after controlling for endogeneity of grant history and seniority.

2. Hypotheses Regarding Research Performance of Inbred Staff

Conceptually, academic inbreeding might be positively, or negatively, correlated with research performance. One reason suggesting a positive relationship between academic inbreeding and research performance centres on information advantages associated with hiring one's graduates. As Eisenberg and Wells (2000, p.369) noted: "A positive relation between information about candidates and hiring decisions ought to manifest itself especially strongly in hiring one's own graduates. …… The information-based view of hiring suggests that it would be remarkable if the collective legal academy does a poorer job of hiring those with whom we are most familiar".

There are other reasons why one might expect inbred staff to exhibit better research performance. Inbred staff incur less disruptions to their career in the critical early stages. Inbred staff may have more established professional ties in the local area than staff hired from outside, particularly if the latter are relocating from another city. Inbred staff may not have to invest as much resources in developing working relationships with new colleagues and understanding university requirements. As Datillo (1987, p.61) asked: "Conceptually, who would be better prepared to perpetuate an institution's mission or represent a field of knowledge more than individuals educated and

nurtured within its native environment?" All of these factors may allow inbred faculty to allocate more time to research (Wyer & Conrad, 1984).

There are, however, reasons why inbred staff may not perform as well as staff hired from outside. First, there is the potential for selection committees to be biased in favor of its own graduates and for this to compromise the quality of candidates hired from within. This will occur if selection committees cannot evaluate their own graduates as objectively as they evaluate graduates from other schools. This might occur if members of the selection committee are too close to their own graduates or face intense lobbying from other faculty. For example, graduates of the hiring school might have served as research assistants, performed well in class or otherwise be regarded as protégées of sponsors in the school who are pushing their case (Eisenberg & Wells, 2000).

Second, getting published in leading journals relies on the innovativeness of the research idea. It is sometimes posited that inbred staff are less creative or innovative than staff hired from outside (Peltz & Andrews, 1966). Students acquire knowledge and learning practices from the institution in which they study and will use this as a reference point to inform future students when they become faculty. When universities hire their own students, locally learned knowledge practices are reproduced, which stifles the introduction of new ideas and alternative research directions (Horta *et al.*, 2010).

Third, outside of the leading schools, most academic departments typically hire students from schools with programs ranked well above them – the so-called "trickle down effect". In a range of disciplines, it is common for

graduates to be hired by schools ranked 20 to 50 places below their alma mater on school rankings. For example, Stock *et al.* (2000) find that the vast majority of new economics Ph.Ds in 1995-96 moved to jobs in departments at least 50 ranks below their graduate department. Thus, one would expect those hired from higher ranked schools to perform better than those hired from within because the former are graduates from more selective programs.

Hence, we have the following competing hypotheses:

H1a: There will be a positive relationship between academic inbreeding and research performance.

H1b: There will be a negative relationship between academic inbreeding and research performance.

3. Findings from Existing Literature

Existing studies that examine the relationship between academic inbreeding and research performance use a range of measures of research productivity. These include publications (see eg. Hargens & Farr, 1973; Horta *et al.*, 2010; Wyer & Conrad, 1984); citations (see eg., Eisenberg & Wells 2000; Hargens & Farr 1973) and Hirsch's (2005) *h*-index (Inanc & Tuncer 2011). Most studies have focused on engineering and science (see eg. Horta *et al* 2010; Inanc & Tuncer 2011; Soler, 2001). There are, however, also studies for other disciplines, such as nursing (Dattilo, 1987; Sato, 1992), social work (Wells *et al.*, 1979) and sociology (Schmidt, 2011). There is only one study for law (Eisenberg & Wells, 2000), but there are other indirectly related studies. Merritt and Reskin (1997) examined the determinants of hiring in US law schools (including academic inbreeding). Pjesky and Sutter (2011) compared the research performance of graduates from top five law schools with that of

graduates from lower ranked law schools in the US. Eisenberg and Wells (1998) examined the determinants of research productivity in law schools.

In terms of geographical coverage, most of the existing studies have focused on the US (see eg. Eells & Cleveland, 1935a, 1935b; Eisenberg & Wells, 2000; Hargens & Farr, 1973; McGee, 1960; Sato, 1992; Wyer & Conrad, 1984). There are fewer studies for Europe (Cruz-Castro & Sanz-Menendez, 2010; Inanc & Tuncer 2011; Navarro & Rivero 2001; Soler 2001). There are also individual studies for other countries, such as Russia (Sivak & Yudkevich, 2012); Mexico (Horta *et al*, 2010) and Japan (Horta *et al.*, 2011).

The majority of studies have found that inbreeding has a negative effect on research productivity. Eisenberg and Wells (2000) found that inbred faculty members were cited between 7 and 13 per cent less than other faculty members. Inanc and Tuncer (2011) found that the *h*-index of inbred faculty was 89 per cent lower than other faculty. Horta *et al.* (2010) found that inbred faculty produced 15 per cent less peer-reviewed articles than other faculty. In a study of Russian academics, Sivak and Yudkevich (2012) found that inbred faculty were more likely to publish in lower-ranked "local" journals, while those hired from outside were more likely to publish in higher-ranked national journals. Other studies which have found that inbred faculty have lower research productivity than faculty hired from outside include Eells and Cleveland (1935a, 1935b), Hargens and Farr (1973) and Soler (2001).

There are, however, studies which suggest that inbred faculty are more productive than faculty hired from outside, as well as studies suggesting that

there is no statistically significant difference between the two groups. Cruz-Castro and Sanz-Menendez (2010) found that there was no significant difference in research performance between inbred and non-inbred faculty in Spain at the time of tenure. Using data from 21 land-grant universities in the US, Pan (1993) found no statistically significant difference in research productivity between inbred and non-inbred faculty. Dattilo (1987) and Sato (1992) found no significant difference in research productivity between inbred and non-inbred in nursing departments in the US. Wells *et al.* (1979) reached the same conclusion for a sample of social work departments. McGee (1960) found that inbred faculty produced more publications than other faculty at the University of Texas, although his methodology was criticized by Gold and Lieberson (1961) because he does not use a multivariate modeling approach. Employing data from the 1977 Survey of the American Professoriate, Wyer and Conrad (1984) did use multivariate modeling and found no difference in research productivity between inbred and non-inbred staff.

To summarize, there are more studies than not which find that academic inbreeding has a negative effect on research performance, but this finding is not universal. There are relatively few studies outside of Europe and the US and only one existing study for law, which is for US law schools. The lack of studies of the relationship between academic inbreeding and research performance in law schools outside the US is a gap this study addresses.

4. Methodological Issues

A Defining Inbred Staff

Put in its simplest terms academic inbreeding occurs when a university hires its own graduates. However, this simple definition raises a variety of issues. In

most cases academic inbreeding has been taken to refer to the situation in which a university hires its own Ph.D graduates. This, though, does not make a lot of sense in law in which a sizeable proportion of legal academics do not have a Ph.D. Thus, we follow the approach adopted in Eisenberg and Wells (2000) and define academic inbreeding as when a law school hires its own undergraduates – ie. those with an LLB – immediately following graduation.

Note, this definition does not include the situation where a law school hires its own LLB graduates after a period of time, during which the graduate is not affiliated with the law school or university. Examples include the situation in which the graduate has been hired by another law school, but returned to their alma mater; the graduate has pursued postgraduate studies at another law school and subsequently been hired by their alma mater following completion of those postgraduate studies; or the situation in which the graduate has spent time in private practice and subsequently returned to academia. In some studies, these have been treated as cases of academic inbreeding; however, they are better regarded as being silver corded (Berelson, 1960).

It is important to separate out inbred and silver cord faculty, because silver-corded faculty tend to be academically superior (Caplow & Magee, 1958). This potentially reflects one or more of the following: first, they have proved themselves in "open competition" (Caplow & McGee, 1958, p.53); second, they have additional human capital from a higher degree obtained from a different law school; or, third, they bring with them outside professional contacts and experience. Thus failing to distinguish inbred faculty from silver-

corded faculty can confound the results. We treat silver corded faculty and faculty with an LLB from a different law school as comparison groups.

B Measuring Research Productivity

Publications

Our first measure of research productivity is publications in top journals. We use several alternative rankings of journals to provide robustness to the results. The rankings used are (a) the Excellence in Research Australia (ERA) 2010 A* law journals; (b) the ERA 2010 A* Australian law journals; (c) the ERA 2010 A* and A Australian law journals; (d) the top 10 Australian law journals according to Ramsay and Stapledon (1997); (e) the top 10 Australian law journals according to Smyth (1998); and (f) the law reviews associated with the Group of Eight (Go8) law schools, which tend to be the leading Australian law schools. Publications over the period 2000-2010 were included.

The ERA 2010 rankings are used because they were the main reference point for the Australian national research assessment exercise (the ERA) in 2010. The A* journals represent a very select group of journals, while the A* and A journals combined represent a broader set of journals. Ramsey and Stapledon (1997) compiled their rankings based on a citation analysis of all articles published in 14 Australian law journals during the years 1994 and 1995. Smyth's (1998) rankings are based on citations to law journals in decisions of the High Court of Australia decided between 1993 and 1997. Several of the rankings have a focus on Australian law journals. This is appropriate given that most Australian legal academics publish in Australian law journals. As a

robust check, we also use publications in all ERA 2010 A* journals and the findings are similar to when we focus specifically on Australian journals.

We focus on publications in top law journals as opposed to all law journals for the following reasons. First, it responds to calls in the literature to focus on the quality, rather than the quantity, of publications (see eg. Wyer & Conrad, 1984). As Wyer and Conrad (1984, p.224) noted: "A widely shared prejudice against inbreeding is not that inbreds are less productive, but that they are [less original]". Originality is a key determinant of getting published in the top journals. Second, it is consistent with the emphasis in the ERA, and other national research assessment exercises, on research quality. Third, while including all journal articles and, indeed, other outputs such as books and conference papers would have benefits in terms of comprehensiveness, it is generally accepted that these vary considerably in quality and, thus, represent noisy measures of measure productivity (Horta *et al.*, 2010). Fourth, there is evidence that it is the quality, rather than the quantity, of one's publications which are important for academic reputation. For instance, Hamermesh and Pfann (2009) found that for a sample of academic economists, the quantity of output had no, or even a negative, effect on various proxies for reputation and that, instead, it was the quality of publications which determined how a scholar was viewed. Finally, our approach follows other studies in law (see eg. Pjesky & Sutter, 2011) and other disciplines (see eg. Goodwin & Sauer, 1995) in using a select list of top journals to control for publication quality.

We present separate results including, and excluding, publications in the home law review. Here, home law review is defined as the law review published by

the law school in which the person worked at the time the article was published. We follow this approach because it is generally recognized that "law reviews are more likely to publish works by home school authors" (Black & Caron, 2006, p.90). We present data on both number of articles and pages, but focus more on number of articles given the argument that people should not be rewarded for being longwinded (Eisenberg & Wells, 2000). For co-authored articles, article counts (and page counts) were adjusted for partial authorship by dividing through by the number of coauthors.

Citations

Our second measure of research productivity is citations. Citations represent an important alternative measure of research performance given that the proliferation of journals, multiple journal rankings and the reduced role of journals in information dissemination make the signal that a paper was published in a particular journal less meaningful (Ellison, 2010). There are a number of studies that have used citations to measure research productivity (see eg. Eisenberg & Wells, 2000). Citations have also been used to measure productivity in other areas; for example, citations to case law have been used to measure judicial productivity (see eg. Bhattacharya & Smyth, 2001)

One limitation of using citations is that they have a fat-tailed distribution so that a single paper can contribute a large share of a researcher's total citations. This might be problematic in cases where there is uncertainty in the case of co-authored papers about how much credit each author should receive (eg. when the most cited-paper is a paper coauthored as a student with his/her supervisor) (Ellison, 2010). Thus, in addition to total citations, we use the *h*-

index, proposed by Hirsch (2005) and the *g*-index, proposed by Egghe (2006). A researcher has h as his/her h index if h of his/her papers have at least h citations each and the other papers have no more than h citations each. The *h*-index has become widely accepted in scientometrics. It has the advantage that it is a single number incorporating both citation and publication data. Egghe (2006) criticized the *h*-index for failing to give credit to a researcher's highly cited papers. The reason is that once a paper receives h citations, additional citations are not counted even if citations double or treble. The *g*-index attempts to address this problem. The *g*-index is defined as the largest rank such that the first g papers have at least g squared citations. We report results using total citations, as well as the *h*-index and *g*-index to ensure robustness.

To measure citations, and to calculate the *h*-index and *g*-index, we use Google Scholar. We do so because Lexis and Westlaw tend to be US-centred and do not adequately capture the journals in which Australian legal academics primarily publish. Similarly, Scopus and Thomson ISI Web of Science contain few law journals. Indeed, it is generally accepted that the coverage in these databases is insufficient to assess the performance of scholars in disciplines other than the hard sciences (Amara & Landry, 2012; Tressler & Anderson, 2012). Google Scholar has been subjected to various criticisms (see eg. Jasco, 2010). However, there is now evidence that these criticisms have been addressed (Harzing, 2010, 2012). Consequently, Google Scholar has been suggested as a viable alternative to Scopus and ISI Web of Science to measure citations in disciplines other than the hard sciences (Harzing, 2012).

C Who is Included in the Study?

Academic staff Lecturer (Assistant Professor) or above, as listed on the staff web page of an Australian law school as of June 2011 were included in the study. Consistent with previous studies, staff listed as postdoctoral research fellows, holding adjunct appointments, holding education-focused appointments or as holding Emeritus appointments were not included (Eisenberg & Wells, 2000; McNally, 2010). Some Australian universities have offshore campuses. Staff listed as holding appointments on offshore campuses were not included. Staff holding senior administrative positions in the University were only included if listed on the staff web page.

5. Data

A. Collecting the Data

Using the above criteria, we identified 905 legal academics employed at 21 Australian law schools. This represents the population of legal academics employed at law schools in Australia. We collected information on their publications in top journals (variously defined) over the period 2000-2010 as well as citations and their *h*-index and *g*-index, based on Google Scholar. Background information (affiliation, gender, position, research field) was identified from their staff web page. Other information (years since first appointment, whether there was a delay before becoming an academic, grant history and educational background) was obtained via a survey, which was emailed to all 905 academics. The initial mail out occurred in September 2011, with a reminder email sent in February 2012. We received valid responses from 429 academics, representing a response rate of 47.4 per cent. Of the 429 academics in the sample, 31 (7.2 per cent) were inbred, 91 (21.2 per cent) were silver-corded and 307 were neither inbred, nor silver-corded.

In terms of key demographic variables, the sample is representative of the population of legal academics as a whole, based on data aggregated from staff web pages. In the sample 63.6 per cent of respondents were from Go8 universities, compared with 51.4 per cent for the population as a whole. In terms of seniority 31.7 per cent of respondents were Professors, 19.1 per cent were Associate Professors, 28 per cent were Senior Lecturers and 21.2 per cent were Lecturers. The corresponding figures for the population of academics at Australian law schools are Professor, 27.3 per cent; Associate Professor 20.8 per cent; Senior Lecturer, 28.6 per cent; and Lecturer, 23.3 per cent. In terms of gender, 51.9 per cent of respondents were male, while 51.5 per cent of academics employed at law schools in Australia are male.

B Descriptive Statistics

Table 1 presents descriptive statistics on the research performance of inbred staff, silver-corded staff and staff that are neither inbred, nor silver corded in the sample. There is no statistical difference between the research performance of inbred staff and staff whom are neither inbred, nor silver-corded, for any of the measures. However, silver-corded academics perform statistically better than academics whom are neither inbred, nor silver-corded on nine measures of research performance; articles in ERA 2010 A* journals; articles in ERA 2010 A* Australian journals; articles in ERA 2010 A* and A Australian journals, articles in Ramsey and Stapledon (1997) top 10 journals; articles in Smyth (1998) top 10 journals, pages in ERA 2010 A* Australian journals, pages in ERA 2010 A* and A Australian journals, pages in Ramsey and Stapledon (1997) top 10 journals and pages in Smyth (1998) top 10 journals.

There is no statistical difference in research performance between silver-corded staff and staff whom are neither inbred, nor silver-corded on the other research measures, including each of the three citation-based measures.

Failure to control for other factors likely to be correlated with research productivity would potentially bias estimates of the relationship between being inbred or silver-corded and research productivity (Gold & Lieberson, 1961). Table 2 presents descriptive statistics for the control variables employed in the study. The control variables employed were selected based on existing studies on the determinants of research productivity among academics (see eg. Gonzales-Brambila & Veleso, 2007; Levin & Stephan, 1991) and, more specifically, multivariate studies of the relationship between academic inbreeding and research productivity (see eg. Horta *et al.*, 2010).

6. Empirical Specification and Methodology

A. Basic Empirical Specification

To examine the relationship between academic inbreeding and research performance, we regress our measures of research productivity (publications in top journals, citations, *h*-index, *g*-index) on dummy variables denoting if the individual was inbred, silver-corded and the control variables in Table 2, capturing factors that are likely to be correlated with research productivity.

The first control variable is if the individual works in constitutional or public law. Eisenberg and Wells (2000) noted that some areas of the law, including constitutional law, are amenable to higher citations or publications. Smyth (2012) noted that there is a significant presence of constitutional and public law scholars among the most prolific publishers in the top Australian law

journals. This reflects the fact that the top Australian law journals tend to publish a disproportionate amount of studies on Australian constitutional and public law, perhaps reflecting the fact that it is difficult to publish such studies in US-based journals. Hence, we expect a positive relationship between publishing in constitutional and public law and research productivity.

The second control variable is a dummy variable denoting if the individual experienced a delay before becoming an academic. Eisenberg and Wells (1998, 2000) show that a delay before becoming an academic is negatively correlated with scholarly influence. The third control variable is a dummy variable denoting the law school from which the individual received his/her LLB, categorized as Go8, non-Go8, North America, UK or from elsewhere in the world. Several studies suggest that the prestige of the school, from which an individual received their degree, is correlated with research productivity (see eg. Buchmueller *et al.*, 1999; Turner & Mairesse, 2003).

The fourth control variable is a dummy variable denoting whether the individual works at a "top law school". In the reported results we define "top law school" as a Go8 law school. The Go8 are the leading research-intensive universities in Australia, receiving almost double the research funding of the other 31 universities combined (DEEWR, 2008). In results, which are not reported, to proxy for a top law school, we also used schools which received a four or five on the ERA 2010 exercise. This corresponds to schools considered to produce research at, or above, world standard. The results were quantitatively similar to those using the Go8 to proxy for the top law schools.

Eisenberg and Wells (1998) found that academics working at top law schools in the US had higher scholarly influence than other law schools. Smyth (2012) found that academics at Go8 law schools were disproportionately represented among the most prolific publishers in the top Australian law journals. Studies have found that academics affiliated with leading universities have higher research productivity in other disciplines as well; for example, economics (Ellison, 2010) and science (Hargens & Farr, 1973). We expect a positive correlation between working in a top law school and research productivity.

The fifth control variable is whether an individual has a higher degree in law, defined as either an L.L.M. or Ph.D, and whether the higher degree was conferred by a law school in the Go8, non-Go8, North America, UK or elsewhere in the world. Several studies have found that completing a higher degree is associated with having higher research productivity (Landino & Owen, 1988; Bailey, 1999). One reason, grounded in the economics literature, might be that those with a higher degree have more human capital and thus are better equipped to do research (Levin & Stephan, 1991). Another reason, grounded in the psychology literature, is that having a higher degree contributes to higher self-efficacy in doing research (Landino & Owen, 1988).

The sixth control variable is academic seniority. Most studies have found a positive relationship between academic seniority and research productivity (see eg. Abramo *et al.,* 2011). Possible explanations are that more senior academics have better-honed research skills, have more experience with placing articles or better contacts. The seventh control variable is whether the

individual has received a grant from the Australian Research Council (ARC), which is the Australian equivalent of the National Science Foundation. We control for both ARC Discovery (ARC-D) grants, which fund basic and applied research, and ARC Linkage (ARC-L) grants, which fund collaborative research with industry. Research funding can be expected to be positively correlated with research productivity (Gonzalez-Brambila & Veleso, 2007).

The eighth control variable is years in academia. The life-cycle model of research productivity suggests a non-linear relationship between years in academia and research productivity. Initially, research productivity will increase as human capital accumulates, it will reach a maximum and then decline with mental and physical deterioration (Levin & Stephan 1991).

The ninth control variable is gender of the individual. Several previous studies have found that the research productivity of males is higher than females (see the extensive review in Bentley, 2011). Smyth (2012) found that there were few females among the most prolific publishers in top Australian law journals. Various reasons have been offered for this phenomenon, including, women giving more time to family responsibilities, women having fewer networks and co-authorship opportunities and women lacking the male-style aggressiveness to repeatedly publish in the top journals. On the latter point, laboratory experiments have shown that holding ability constant, females tend to be less competitive than males (Niederle & Vesterlund, 2007).

B. Econometric Methods

While ordinary least squares (OLS) could be used to estimate the model, the problem with using OLS is that a high number of academics have zero publications and/or no citations. Thus, OLS is likely to produce biased and inefficient estimates. Hence, we use a Tobit model when the dependent variable is number of articles, number of pages and total citations. The Tobit model is the appropriate estimator when there is a high proportion of "zeros" in the dependent variable. When the dependent variable is the *h*-index or *g*-index, we follow Inanc and Turner (2011), who used the *h*-index to measure research productivity, and employ a negative binomial model.

C. Addressing Endogeneity

A potential problem with the basic empirical specification is that ARC grant history and seniority are likely to be endogenous variables (on the issue of whether academic seniority is endogenous, see Mishra & Smyth, 2012). Grants are awarded based on prior research record and more productive researchers are more likely to get promoted. We do not have conventional instrumental variables (IV) for either of these variables in the dataset. We use a novel identification strategy proposed by Lewbel (2012), which utilizes a heteroscedastic covariance restriction to construct an internal IV. This approach has the advantage that it can be used in cases, such as ours, where other sources of identification, such as external IVs, are not available.

To explain the Lewbel (2012) IV approach consider the following:

$$Y_1 = X'\beta_1 + Y_2\,\gamma_1 + \epsilon_1 \qquad \epsilon_1 = \alpha_1 U + V_1 \qquad (1)$$

$$Y_2 = X'\beta_2 + \epsilon_2 \qquad \epsilon_2 = \alpha_2 U + V_2 \qquad (2)$$

Let Y_1 be research productivity and Y_2 be grants/fellowships or seniority. U denotes unobserved characteristics which effect both grants/fellowships or academic rank and research productivity. V_1 and V_2 are idiosyncratic errors. Some of the structural parameters in the above equations are not identifiable without additional information. Generally one obtains identification by either imposing equality constraints on the coefficients of X (i.e. using OLS regression), or assuming that one or more elements of β_1 are equal to zero. This permits the estimation of Y_1 using IVs. Alternatively, assume Z is a vector of observed exogenous variables (Z could be a subset of X or equal to X). Lewbel (2012) argues that if the following moment conditions are met:

$$E(X\epsilon_1) = 0, \quad E(X\epsilon_2) = 0, \quad Cov(Z, \epsilon_1\epsilon_2) = 0$$

and there is heteroskedasticity of ϵ_j, one can estimate the above equations using $[Z - E(Z)]\epsilon_2$ as an instrument with two-stage least squares (TSLS).

7. Results

Table 3 presents Tobit estimates where the dependent variable is number of articles in top journals, defined in five alternative ways, including publications in the home law review. The results are fairly robust across the alternative ways of measuring research productivity and can be summarized as follows. First, seniority is positively correlated with publishing in top journals. Relative to Lecturers, the reference case, Associate Professors publish 1.1 to 1.9 more articles in top journals, while Professors publish 1.4 to 2.7 more articles in top journals. Second, constitutional and public law scholars publish 1.1 to 1.6 more articles than other scholars. Third, recipients of ARC Discovery grants publish 0.7 to 1.3 more articles than those who have never received an ARC

Discovery grant. Fourth, academics with an L.L.M. from Australia, both Go8 and non Go8, or North America publish more articles than those without an L.L.M., although the coefficient for North America is only weakly significant. Fifth, having a Ph.D from a non-Go8 university in Australia, or from the UK, is consistently associated with publishing more articles, relative to those without a Ph.D. Sixth, academics at Go8 law schools publish 1.6 to 2.2 more articles in the top journals than those at non-Go8 law schools. Finally, dummy variables denoting academics as inbred or silver-corded are statistically insignificant, irrespective of the measure of top law journal.

Table 4 presents Tobit estimates where the dependent variable is number of pages published in top journals. The top journals are defined in the same five alternative ways as Table 3, and, as in Table 3, we include publications in the home law review. A similar picture emerges to Table 3, consistent with existing findings that results are similar, irrespective if research productivity is measured in terms of articles or pages published (Cullen & Kalberg, 1995). Both Associate Professors and Professors publish more pages than Lecturers. Associate Professors publish 34.3 to 51.8 more pages than Lecturers, while Professors publish 40.3 to 52.5 more pages than Lecturers. Constitutional and public law scholars publish 19.7 to 35.9 more pages than scholars in other fields. Those who hold an ARC Discovery grant publish 25.6 to 37.2 more pages than those who have never held an ARC Discovery grant. Those employed at a Go8 law school publish 39.8 to 60 more pages than those employed at a non-Go8 law school. The findings for higher degrees are also

generally similar to Table 3. Once again, inbred and silver-corded are statistically insignificant, irrespective of how the top journals are measured.

A potential criticism of the results in Tables 3 and 4 is that the top journals are defined exclusively in terms of Australian law journals. While we have suggested that Australian law journals are the primary outlet for Australian legal academics (see also Smyth, 2012), academics at Australian law schools do also publish in law journals published in North America and the UK. To address this point, Table 5 presents Tobit estimates for articles and pages published in all ERA 2010 A* journals, irrespective of where they are published. The results are very similar to those reported in Tables 3 and 4. Being a constitutional or public law scholar, being employed at a Go8 law school, seniority, having received an ARC Discovery grant, having an L.L.M. from a Go8 law school and having a Ph.D from a non-Go8 law school or from the UK are associated with publishing more articles and pages in ERA 2010 A* law journals. Both inbred and silver-corded are statistically insignificant.

Another potential criticism of the results in Tables 3 and 4 is that the measures of research performance include publications in the home law reviews. Given that each of the five ways of defining top law journals in Tables 3 and 4 include several of the law reviews published by the Go8 law schools and, in the case of the G8 measure, is defined in terms of the eight Go8 law reviews, this is potentially biasing the estimates. Tables 6 and 7 address this point by re-estimating the same specifications as reported in Tables 3 and 4 respectively, but excluding publications in the home law review.

The results in Tables 6 and 7 are very similar to those in Tables 3 and 4. The only differences between Tables 3 and 6 are that once publications in the home law review are excluded, those who received their LLB from North America consistently publish fewer articles and there is more evidence that those who received their Ph.D from Go8 law schools publish more. Being employed in a Go8 law school is associated with publishing more articles, irrespective of whether the home law review is included, but once the home law review is excluded the difference in magnitude is reduced. For example, those employed at Go8 law schools publish 2.2 more articles in Go8 law reviews than those not employed at Go8 law schools when publications in home law reviews are included, but this figure drops to 0.98 more articles when publications in home law reviews are excluded. The picture that emerges is almost identical for pages published if one compares the results in Tables 4 and 7. Most importantly, in terms of the central research question in this study, the coefficients on the dummy variables denoting inbred and silver-corded continue to be statistically insignificant in Tables 6 and 7.

Table 8 reports the results where the measure of research productivity is alternatively total citations, the academic's *h*-index and the academic's *g*-index on google scholar. The first column reports Tobit estimates where the dependent variables is total citations. The results suggest that Professors have 243.2 more citations on google scholar than lecturers. Those who have had an ARC Discovery grant have 184.7 more citations than those who have never had an ARC Discovery grant, while the corresponding figure for those who

have received an ARC Linkage grant is 91.6 citations. Those employed at Go8 law schools have 62.4 more citations than those at non-Go8 law schools.

The second and third column of Table 8 report the negative binomial estimates for the *h*-index and *g*-index. For ease of interpretation we report the incidence rate ratios (IRR). The IRR represent the ratio of the counts predicted by the model when the indices are one unit above their mean, while the other variables are at their mean (Inanc & Tuncer, 2011). The results for both the *h*-index and *g*-index are similar. Senior Lecturers, Associate Professors and Professors have a higher *h*-index and *g*-index than Lecturers. The *h*-index is between 55.7 per cent (for Senior Lecturers) and 182.2 per cent (for Professors) higher than for Lecturers, while the corresponding range for the *g*-index is 87.2 per cent to 261.4 per cent. Those who have had ARC grants have a higher *h*-index and *g*-index than those who have not. Those who have an L.L.M. from North America have a higher *h*-index and *g*-index than those who do not and those with a Ph.D from Australia or the UK have a higher *h*-index and *g*-index than those who do not. Finally, those employed at Go8 law schools have a higher *h*-index and *g*-index than those employed at non-Go8 law schools. However, the coefficients on the dummy variables for inbred and silver-corded continue to be statistically insignificant, irrespective of whether the dependent variable is total citations or the *h*-index or *g*-index.

For each of the five ways of measuring the top journals in Table 3 around 50 per cent of the sample have no publications. There is also about 10 per cent of the sample who have no citations on google scholar. To address the potential

concern that the results are being biased by including academics with zero publications/citations, in Table 9 we report OLS estimates excluding these individuals. Generally, fewer of the variables are statistically significant, most likely reflecting fewer observations. However, the results continue to suggest that a Professor has more publications and citations than a Lecturer and that constitutional and public law scholars publish more than scholars in other fields across most specifications. Inbred is still statistically insignificant, although the coefficient on silver-corded is positive and significant for the Smyth (1998) top 10. Among academics in the sample with publications in the Smyth (1998) top 10 law journals, silver-corded academics publish 0.8 more articles in the Smyth (1998) top 10 than those whom are not silver-corded.

Finally, a potential problem with the estimates to this point is that academic seniority and grant history are endogenous variables, thus biasing the estimates. The Breusch-Pagan test for heteroskedasticity, reported at the bottom of Table 10, suggests the presence of heteroskedasticity, which is a precondition for implementing the Lewbel (2012) TSLS method. The Lewbel (2012) TSLS estimates for the alternative ways of measuring top journals and total citations on google scholar, treating academic seniority and receipt of ARC Discovery and Linkage grants as endogenous, are reported in Table 10. Seniority ceases to be statistically significant, suggesting that the significant estimates from the Tobit model potentially reflect reverse causality running from citations/publications to academic seniority. However, ARC Discovery generally continues to be significant. Other variables, such as Constitutional/Public Law, L.L.M. from the Go8 and being employed at a Go8

law school are significant in all, or most, specifications. The dummy variable for being male becomes significant for publications in the ERA 2010 Australian A*, the Ramsey and Stapledon (1997) top 10 and the Go8 law reviews with males publishing 0.3 to 0.4 more articles than females. Silver corded academics publish 0.5 more articles than non-silver corded in the Smyth (1998) top 10, although inbred is statistically insignificant in each case.

8. Discussion of Results for Inbreeding

There are several possible reasons for the finding that there is no relationship between academic inbreeding and research productivity in this study. The results indicate that the factors suggesting a negative relationship between being inbred and research productivity, which many recent studies have emphasized, are offset by factors suggesting a possible positive relationship. In legal academia there is much focus on publishing black letter law articles in Australian law journals. Many law journals, even some of the highly ranked ones, have a practitioner focus. Law schools also place a premium on fostering ties with the profession. That inbred staff are likely to have more professional ties in the local area and better local institutional knowledge than staff hired from outside is likely to be particularly useful in this context.

Another factor is that because we have used top journals, variously defined, to measure research productivity, for each way of measuring what constitutes a top journal, there is approximately 50 per cent of the sample with no publications at all. Hence, rather than finding a difference in research performance between inbred and non-inbred staff, our findings point to the

slightly concerning conclusion, particularly in the ERA context, that the proportion with no publications is relatively high across the board. To put it differently, rather than finding inbred staff are less likely to do innovative research capable of getting into the top journals, we find that this is true for a high proportion of legal academics in Australia, irrespective of whether they are inbred. This pattern is swamping any potential inbreeding effect. Sato (1992), who found that there was no significant difference between the research output of inbred and non-inbred staff in nursing schools in the US, observed a similar phenomenon. It has to be remembered, though, that our focus has been on top journals. Once other journals as well as other research outlets, such as books, and book chapters, are considered, the proportion without publications could be expected to substantially decline. Moreover, with more quantity-focused measures of output, one might observe different results for research productivity, comparing inbred versus non-inbred faculty.

A further point is that the difference in academic quality might not be as stark between those inbred and those hired from outside as in law schools in the US or other disciplines, such as economics, in Australia. In US law schools, the trickle-down effect is potentially sizeable because there are many more law schools than in Australia. In some other disciplines, such as economics, in Australia there is an international labor market, in which at least most of the Go8 economics departments will hire at the junior academic market attached to the Allied Social Sciences Meeting each January (Cawley, 2011). There is no international academic labor market for law school graduates where Australian law schools aim to hire from the best law school programs in the

US. In many cases, law schools will hire from other law schools in the same city and from programs that are broadly comparable in terms of quality.

Finally, our results may reflect the relatively small proportion of inbred staff in our sample, compared with the much higher numbers in recent studies. Because the percentage of inbred staff in Australian law schools is relatively small, the reasons why inbreeding potentially has a negative effect on research are not applicable in this context; i.e. staff lobbying for sub-standard inbred students or repetition of the same knowledge across generations of academics is likely to have a measurable effect only if the practice of inbreeding is sizable. With inbred staff representing only 7.2 percent of the sample, it may be that inbred faculty in Australian law schools are among the best students.

9. Conclusion

The main finding in this study is that there is no significant difference in the research performance of inbred and non-inbred staff. Hence, there is no support for either of the competing hypotheses presented earlier. While there are conceptual arguments suggesting that academic inbreeding could have a positive or negative relationship with research performance, and the existing empirical findings are not unanimous, intuitively we expected to find that academic inbreeding would have a negative effect on research performance. As Eisenberg and Wells (2000, p. 310) put it, when they told colleagues that they found a negative relationship between academic inbreeding and research performance in US law schools, “no-one seem[ed] surprised by the result”.

Our findings are surprising in the sense they are negative results and refute popular (mis)conceptions about academic inbreeding. Over the last few years there has been increased recognition that scientific progress in several disciplines has been hampered by researchers' tendencies to confine negative results to the file-drawer (see Gumpenberger *et al.,* 2012). An example in the empirical legal studies literature is the debate on capital punishment, in which Donohue and Wolfers (2005) have argued that "reporting bias" has distorted the debate by producing a situation where primarily only studies reporting a deterrent effect get published. We believe that our findings have value in that we use a rigorous methodology to reach results contrary to many recent studies on the relationship between academic inbreeding and research productivity and we do so in a different institutional context.

Most recent studies which have found a negative relationship between academic inbreeding and research productivity have used data from countries and disciplines in which the proportion of inbred staff is relatively high (see eg. Horta *et al.,* 2010; Inanc & Tuncer 2011). Even in the Eisenberg and Wells (2000) study, the proportion of academic inbreeding was high in the Ivy League schools. By contrast, the degree of academic inbreeding is relatively low in Australian law schools and findings in this setting add to the literature.

Almost three decades ago, Wyer and Conrad (1984) published one of the first studies on this topic to use a multivariate model and also reached the conclusion that there was no statistical difference in the research productivity of inbred and non-inbred staff. Given that finding was "contrary to most

previous results" the authors considered it "appropriate to summarize the methodological strengths of [their] study" (at p. 224). We do likewise. First, our results are robust to a number of alternative ways of measuring research productivity. Second, we focus on publications in top journals, variously defined, and citations to measure impact. This contrasts to most previous studies which have focused on the quantity, and not quality, of research. Third, we control for a number of factors likely to be correlated with research productivity. Fourth, the results are robust to the inclusion, or exclusion, of publication in the home law review. Fifth, we corrected for the endogeneity of seniority and grant history and the findings for inbreeding were robust.

Thus far, studies of the academic inbreeding-research productivity nexus outside of the US have tended to focus on disciplines and countries in which there is a high prevalence of academic inbreeding. In terms of future research, there need to be more studies for countries and disciplines in which academic inbreeding is not as prevalent to verify the results here. The relationship between academic inbreeding and research productivity is just one aspect of the broader debate around academic inbreeding. There is also much speculation around the organizational effects of inbreeding. Compared with the larger literature on the relationship between academic inbreeding and research productivity, few studies have examined the organizational effects or institutional implications of academic inbreeding (Horta *et al.* 2010 is a recent exception). This is a topic that could usefully be the subject of future research.

References

Abramo, G., CA. D'Angelo and F. Di Costa (2011) "Research Productivity: Are Higher Academic Ranks More Productive than Lower Ones?" *Scientometrics,* 88, 915-928.

Amara, N. and R. Landry (2012) "Counting Citations in the Field of Business and Management: Why Use Google Scholar Rather than Web of Science", *Scientometrics* (in press).

Bailey, JG. (1999) "Academics' Motivation and Self-efficacy for Teaching and Research", *Higher Education, Research and Development,* 18(3), 343-359.

Berelson, B. (1960) *Graduate Education in the United States,* New York: McGraw Hill.

Bentley, P. (2011) "Gender Differences and Factors Affecting Publication Productivity Among Australian University Academics", *Journal of Sociology,* 48(1), 85-103.

Bhattacharya, M. and R. Smyth (2001) "Aging and Productivity Among Judges: Some Empirical Evidence from the High Court of Australia", *Australian Economic Papers,* 40(2), 199-212.

Bittles, AH. and JV Neel (1994) "The Costs of Human Inbreeding and their Implications for Variations at the DNA Level", *Nature Genetics,* 8, 117-121.

Black, BS. and PL. Caron (2006) "Ranking Law Schools: Using SSRN to Measure Scholarly Performance", *Indiana Law Journal,* 81, 83-139.

Buchmueller, T., Dominitz, J. and Hansen, L. (1999) "Graduate Training and the Early Career Productivity of PhD Economists", *Economics of Education Review,* 14, 65-77.

Burris, V. (2004) "The Academic Caste System: Prestige Hierarchies in PhD Exchange Networks", *American Sociological Review,* 69(2), 239-264.

Caplow, T. and McGee, RJ. (1958) *The Academic Marketplace,* New York: Basic Books.

Cawley, J. (2011) "A Guide and Advice for Economists in the US Junior Academic Market (2011-2012) Edition", IZA Discussion Paper No. 5984.

Cruz-Castro, L. and L. Sanz-Menendez (2010) "Mobility versus Job Stability: Assessing Tenure and Productivity Outcomes", *Research Policy,* 39, 27-38.

Cullen, C. and SR. Kalberg (1995) "Chicago Kent Law Review Faculty Scholarship Survey", *Chicago Kent Law Review,* 70, 1445.

Dattilo, J. (1987) "The Scholarly Productivity of Inbred and Non-inbred Full-time Doctorally-Prepared Nursing Faculty in Teaching Positions in the South". A Dissertation submitted to the College of Nursing, Georgia State University in partial

fulfillment of the requirements of the degree of Doctor of Philosophy.

Department of Education, Employment and Workplace Relations (DEEWR) (2008) "Review of Australian Higher Education", Discussion Paper, June, Canberra, DEEWR

Donohue, JJ. and J. Wolfers (2005) "Uses and Abuses of Empirical Evidence in the Death Penalty Debate", *Stanford Law Review,* 58, 791-845.

Eells, WC. and AC. Cleveland (1935a) "Faculty Inbreeding", *Journal of Higher Education,* 6(5), 261-269.

Eells, WC. and AC. Cleveland (1935b) "The Effects of Inbreeding", *Journal of Higher Education,* 6(6), 323-328.

Egghe, L. (2006) "Theory and Practice of the *g*-index", *Scientometrics,* 69, 131-152.

Eisenberg, T. and MT. Wells (1998) "Ranking and Explaining the Scholarly Impact of Law Schools", *Journal of Legal Studies,* 27(2), 373-413.

Eisenberg, T. and MT. Wells (2000) "Inbreeding in Law School Hiring: Assessing the Performance of Faculty Hired from Within", *Journal of Legal Studies,* 29(2), 369-388.

Eliot, CW. (1908) *University Administration,* Boston: Houghton-Mifflen.

Ellison, G. (2010) "How Does the Market Use Citation Data? The Hirsch Index in Economics", National Bureau of Economics Research, Working Paper 16419.

Gold, D. and S. Lieberson (1961) "Texas Institutional Inbreeding Re-examined", *American Journal of Sociology,* 66(5), 506-509.

Gonzalez-Brambila, C. and FM. Veloso (2007) "The Determinants of Research Output and Impact: A Study of Mexican Researchers", *Research Policy,* 36, 1035-1051.

Goodwin, TH and RD Sauer (1995) "Life Cycle Productivity in Academic Research: Evidence from Cumulative Publication Histories of Academic Economists", *Southern Economic Journal,* 62, 728-743.

Gumpenberger, C., J. Gorraiz, M. Wieland, I. Roche, E. Schiebel, D. Besagni and C. Francois (2012) "Exploring the Bibliometric and Semantic Nature of Negative Results", *Scientometrics* (in press).

Hamermesh, DS. and GA. Pfann (2009) "Markets for Reputation: Evidence on Quality and Quantity in Academe", National Bureau of Economics Research, Working Paper 15527.

Hargens, LL. and Farr, GM. (1973) "An Examination of Recent Hypotheses About Institutional Inbreeding", *American Journal of Sociology,* 78(6), 1381-1402.

Harzing, AW. (2010) *The Publish or Perish Book: Your Guide to Effective and*

Responsible Citation Analysis, Melbourne: Tarma Software Research.

Harzing, AW. (2012) "A Preliminary Test of Google Scholar as a Source of Citation Data: A Longitudinal Study of Nobel Prize Winners", *Scientometrics* (in press).

Hirsch, JE. (2005) "An Index to Quantify an Individual's Scientific Research Output", *Proceedings of the National Academy of Science*, 102, 16569-16572.

Hollingshead, AB. (1938) "Ingroup Membership and Academic Selection", *American Sociological Review,* 3(6), 826-833.

Horta, H., M. Sato and A. Yonezawa (2011) "Academic Inbreeding: Exploring its Characteristics and Rationale in Japanese Universities Using a Qualitative Perspective", *Asia Pacific Education Review,* 12, 35-44.

Horta, H., F. Veloso and R. Grediga (2010) "Navel Gazing, Academic Inbreeding and Scientific Productivity", *Management Science,* 56(3), 414-429.

Inanc, O. and O. Turner (2011) "The Effect of Academic Inbreeding on Scientific Effectiveness", *Scientometrics,* 88, 885-898.

Jasco, P. (2010) "Metadata Mega Mess in Google Scholar", *Online Information Review,* 34(1), 175-191.

Kristensen, TN. and AC. Sorensen (2005) "Inbreeding – Lessons From Animal Breeding, Evolutionary Biology and Conservation Genetics", *Animal Science,* 80, 121-133.

Landino, RA. and SV. Owen (1988) "Self-efficacy in University Faculty", *Journal of Vocational Behavior,* 33(1), 1-14.

Levin, S. and P. Stephan (1991) "Research Productivity over the Life Cycle: Evidence for Academic Economists", *American Economic Review,* 81(1), 114-132.

Lewbel, A. (2012) "Using Heteroscedasticity to Identify and Estimate Mismeasured and Endogenous Regressor Models", *Journal of Business & Economic Statistics,* 30(1), 67-80.

McGee, R. (1960) "The Function of Institutional Inbreeding", *American Journal of Sociology,* 65(5), 483-488.

McNally, GP. (2010) "Scholarly Productivity, Impact and Quality Among Academic Psychologists at Group of Eight Universities", *Australian Journal of Psychology.* 62(4), 204-215.

McNeely, JH. (1932) "Faculty Inbreeding in Land-grant Colleges and Universities", Washington DC: US Government Printing Office.

Merritt, DJ. and BF. Reskin (1997) "Sex, Race and Credentials: The Truth About Affirmative Action in Law Faculty Hiring", *Columbia Law Review,* 199(240), 199-311.

Mishra, V. and R. Smyth (2012) "Are More Senior Academics Really More Research Productive than Junior Academics? Evidence from Australian Law Schools" Mimeo, Department of Economics, Monash University

Nature (1992) "Reforming Japan's Science for the Next Century", *Nature,* 359, 573-582.

Nature (1993) "What Road Ahead for Korean Science and Technology?" *Nature,* 364, 377-384.

Nature (1998) "Spanish Universities and the Obstacles to Development", *Nature,* 396, 709.

Navarro, A. and A. Rivero (2001) "High Rate of Inbreeding in Spanish Universities", *Nature,* 410, 14.

Nelson, R. (Ed.) (1993) *National Innovation Systems: A Comparative Analysis,* Oxford: Oxford University Press.

Niederle, M and L. Vesterlund (2007) "Do Women Shy Away From Competition? Do Men Compete Too Much?", *Quarterly Journal of Economics,* 122, 1067-1101.

Pan, S. (1993) "A Study of Faculty Inbreeding at Eleven Land-Grant Universities". A Dissertation submitted to the Graduate Faculty, Iowa State University in partial fulfillment of the requirements of the degree of Doctor of Philosophy.

Peltz, DC. and FM. Andrews (1966) *Scientists in Organizations,* New York: Wiley.

Pjesky, RJ. and D. Sutter (2011) "Does the Lack of Profit Motive Affect Hiring in Academe? Evidence From the Market for Lawyers", *American Journal of Economics and Sociology,* 70(4), 1053-1084.

Ramsey, I. and G. Stapledon (1997) "A Citation Analysis of Australian Law Journals", *Melbourne University Law Review,* 21, 676-692.

Reeves, FW., NB. Henry, FJ Kelly,. AJ. Klein and JD Russell (1933) *The University Faculty,* Chicago: University of Chicago.

Sato, J. (1992) "The Scholarly Productivity of Inbred and Non-inbred Faculty in Schools of Nursing with Graduate and Undergraduate Nursing". A Dissertation submitted to the College of Nursing, The University of Utah in partial fulfillment of the requirements of the degree of Doctor of Philosophy.

Schmidt, P. (2011) "Taboo Against Academic Inbreeding is Broken Most by the Lofty and the Lowly, Study of Sociology Departments Finds", *The Chronicle of Higher Education,* August 21.

Science (1998) "Academic Inbreeding Attacked", *Science,* 282, 2165.

Science (2003) "Chinese Universities: An End to Business as Usual?" *Science,* 302, 43.

Science (2006) "Spain Reconsiders its University Reform Law", *Science,* 314, 911.

Sivak, E. and M. Yudkevich (2012) "University Inbreeding: An Impact on Values, Strategies and Individual Productivity of Faculty Members". Electronic copy available at http://ssrn.com/abstract=1996417

Smyth, R. (1998) "Academic Writing and the Courts: A Quantitative Study of the Influence of Legal and Non-legal Periodicals in the High Court", *University of Tasmania Law Review,* 17(2), 164-185.

Smyth, R. (2012) "Who Publishes in Australia's Top Law Journals?" *University of New South Wales Law Journal,* 35(1), 203-247.

Soler, M. (2001) "How Inbreeding Affects Productivity in Europe", *Nature,* 411, 132.

Song, J., P. Almeida and G. Wu (2003) "Learning by Hiring: When is Mobility More Likely to Facilitate Interfirm Knowledge Transfer", *Management Science,* 49(4), 351-365.

Stock, WA., RM. Alston, and M. Milkman (2000) "The Academic Labor Market for Economists: 1995-96", *Atlantic Economic Journal,* 28, 164-185.

Torrisi, B. (2012) "Academic Productivity Correlated with Well-being at Work", *Scientometrics* (in press).

Tressler, J. and DL. Anderson (2012) "Citations as a Measure of the Research Output of New Zealand's Economics Departments: The Problem of 'Long and Variable Lags'", *Agenda,* 19(1), 17-40.

Turner, L. and J. Mairesse (2003) "Explaining Individual Productivity Differences in Scientific Research Productivity: How Important are Institutional and Individual Determinants? An Econometric Analysis of the Publications of French CNRS Physicists in Condensed Matter (1980-1997)" *Annales d'Economie et de Statisques* (special issue in honor of Zvi Griliches).

Wells, RA., Hassler, N. and Sellinger, E. (1979) "Inbreeding in Social Work Education: An Empirical Examination", *Journal of Education for Social Work,* 15(2), 23-29.

Wyer, JC. and CF. Conrad (1984) "Institutional Inbreeding Reexamined", *American Educational Research Journal,* 21(1), 213-225.

Tables

Table 1: Descriptive Statistics for Measures of Research Performance

	Mean			t-test for equality of means	
Variables	Inbred (1)	Silver-corded (2)	Neither inbred nor Silver Corded (3)	(1) = (3)	(2) = (3)
Total Citations on Google Scholar	78.84	148.92	145.95	-1.136	0.073
h-index on Google Scholar	3.68	4.59	4.33	-0.908	0.569
g-index on Google Scholar	5.74	7.44	6.98	-0.866	0.497
Articles in ERA A* Journals	0.86	1.71	1.26	-0.985	1.695*
Articles in ERA A* Australian Journals	0.76	1.37	0.93	-0.489	1.918*
Articles in ERA A* + A Australian Journals	1.30	2.45	1.61	-0.654	2.531**
Articles in Ramsey & Stapledon 'top 10'	0.96	1.70	1.07	-0.281	2.534**
Articles in Smyth 'top 10'	1.01	1.67	0.97	0.136	2.972***
Articles in Go8 Law Reviews	1.05	1.32	0.99	0.189	1.440
Pages in ERA A* Journals	24.95	43.71	33.51	-0.778	1.376
Pages in ERA A* Australian Journals	22.05	33.69	23.62	-0.176	1.718*
Pages in ERA A* + A Australian Journals	32.34	54.91	38.04	-0.498	2.189**
Pages in Ramsey & Stapledon 'top 10'	27.71	41.68	26.53	0.117	2.278**
Pages in Smyth 'top 10'	28.03	43.33	25.88	0.230	2.746***
Pages in Go8 Law Reviews	28.48	37.61	27.68	0.075	1.430
Number of Observations	31	91	307		

Notes: Home reviews are included in all the above research measures. Smyth 10 are the top 10 law journals in Australia according to Smyth (1998); Ramsey and Stapledon 10 are the top 10 law journals in Australia according to Ramsey and Stapledon (1997). ERA rankings refer to the ERA 2010 rankings, compiled by the Australian Research Council.

Table 2: Descriptive Statistics for Explanatory Variables

	Inbred	Silver-corded	Neither Inbred nor Silver Corded
Level			
Lecturer	11 (35.48%)	13 (14.29%)	67 (21.82%)
Senior Lecturer	9 (29.03%)	28 (30.77%)	83 (27.04%)
Associate Professor	5 (16.13%)	20 (21.98%)	57 (18.57%)
Professor	6 (19.35%)	30 (32.97%)	100 (32.57%)
Years Since First Appointment	Mean = 14.71 SD = 9.68	Mean = 13.07 SD = 7.58	Mean = 15.16 SD = 9.26
Delay Before Becoming an Academic (Yes=1)	0 (100%)	73 (80.22%)	157 (51.14%)
Constitutional/Public Law Scholar (Yes=1)	9 (29.03%)	31 (34.07%)	76 (24.76%)
Male (Yes=1)	17 (54.84%)	43 (47.25%)	161 (52.44%)
ARC-Discovery Funding (Yes=1)	5 (16.13%)	21 (23.08%)	67 (21.82%)
ARC-Linkage Funding (Yes=1)	5 (16.13%)	14 (15.38%)	46 (14.98%)
Has LLB from non-Go8 Australian University	6 (19.35%)	18 (19.78%)	51 (16.61%)
Has LLB from Go8 Australian University	25 (80.65%)	73 (80.22%)	177 (57.65%)
Has LLB from UK	-	-	21 (6.84%)
Has LLB from North America	-	-	24 (7.82%)
Has LLM from Elsewhere	-	-	34 (11.07%)
Has LLM			
No	16 (51.61%)	40 (43.96%)	125 (40.72%)
Has LLM from non-Go8 Australian University	1 (3.23%)	5 (5.49%)	19 (6.19%)
Has LLM from Go8 Australian University	10 (32.26%)	19 (20.88%)	65 (21.17%)
Has LLM from UK	1 (3.23%)	14 (15.38%)	35 (11.40%)
Has LLM from North America	3 (9.68%)	10 (10.99%)	47 (15.31%)
Has LLM from Elsewhere	-	3 (3.30%)	16 (5.21%)
Has PhD			
No	10 (32.26%)	39 (42.86%)	138 (44.95%)
Has PhD from non-Go8 Australian University	4 (12.90%)	7 (7.69%)	27 (8.79%)
Has PhD from Go8 Australian University	17 (54.84%)	27 (29.67%)	84 (27.36%)
Has PhD from UK	-	14 (15.38%)	25 (8.14%)
Has PhD from North America	-	4 (4.40%)	15 (4.89%)
Has PhD from Elsewhere	-	-	18 (5.86%)
At G8 Law School (Yes = 1)	25 (80.65%)	73 (80.22%)	175 (57.00%)

Table 3: Tobit Model for Articles (including home law review)

VARIABLES	Aus. A*	Aus. A* + A	Smyth 10	R&S 10	G8
Level					
Senior Lecturer	0.731	0.761	0.346	1.002*	0.523
	(1.365)	(1.181)	(0.638)	(1.784)	(0.957)
Ass. Prof.	1.446**	1.910**	1.099*	1.948***	1.126*
	(2.339)	(2.562)	(1.778)	(3.049)	(1.792)
Professor	1.674***	2.673***	1.717***	2.068***	1.424**
	(2.746)	(3.622)	(2.793)	(3.245)	(2.299)
Years in Academia	-0.0474	0.00405	0.0330	-0.0121	0.0398
	(-0.733)	(0.0515)	(0.506)	(-0.182)	(0.600)
Years in Academia ^{2}	0.00108	0.000350	-6.66e-06	0.000448	-0.000396
	(0.677)	(0.181)	(-0.00420)	(0.276)	(-0.243)
Delay	0.629*	0.329	0.430	0.535	0.688*
	(1.777)	(0.753)	(1.172)	(1.442)	(1.876)
Constitutional/Public Law	1.616***	1.207***	0.557	1.389***	1.145***
	(4.815)	(2.852)	(1.579)	(3.923)	(3.283)
Male	0.455	0.329	0.304	0.496	0.400
	(1.440)	(0.837)	(0.932)	(1.499)	(1.230)
ARC Discovery	1.332***	1.131**	0.721*	1.078***	0.932**
	(3.407)	(2.296)	(1.779)	(2.628)	(2.322)
ARC Linkage	0.116	0.238	-0.0344	0.209	-0.0298
	(0.270)	(0.440)	(-0.0772)	(0.466)	(-0.0672)
LLB From					
G8	0.0188	0.301	-0.492	-0.269	-0.338
	(0.0483)	(0.626)	(-1.230)	(-0.662)	(-0.846)
UK	-2.579**	-0.969	-0.597	-1.460	-1.131
	(-2.544)	(-0.927)	(-0.715)	(-1.635)	(-1.282)
North America	-0.779	-0.909	-1.668*	-1.515*	-1.261
	(-0.967)	(-0.901)	(-1.908)	(-1.712)	(-1.458)
LLM From					
G8	1.488***	1.677***	1.206***	1.362***	1.324***
	(3.507)	(3.185)	(2.756)	(3.057)	(3.045)
Non-G8	1.012	2.515***	1.459*	1.848**	1.530**
	(1.333)	(2.861)	(1.948)	(2.466)	(2.029)
UK	0.591	-0.0161	-0.0735	0.762	-0.0519
	(1.126)	(-0.0246)	(-0.136)	(1.409)	(-0.0944)
North America	0.863*	0.766	0.906*	0.911*	0.874*
	(1.729)	(1.243)	(1.767)	(1.749)	(1.711)
Elsewhere	0.718	0.651	0.472	0.713	0.375
	(0.793)	(0.576)	(0.513)	(0.757)	(0.413)
PhD From					
G8	0.523	1.052**	0.548	0.609	0.680*
	(1.367)	(2.227)	(1.390)	(1.526)	(1.733)
Non-G8	1.842***	2.329***	1.499**	1.317**	1.410**
	(3.113)	(3.187)	(2.447)	(2.115)	(2.257)
UK	1.012*	1.547**	1.617***	0.590	1.263**
	(1.751)	(2.161)	(2.750)	(0.968)	(2.137)
North America	-0.105	-0.0888	-0.260	-0.532	-0.128
	(-0.133)	(-0.0886)	(-0.305)	(-0.615)	(-0.152)
Elsewhere	0.543	0.128	0.430	0.367	1.616*
	(0.564)	(0.104)	(0.428)	(0.360)	(1.674)
At G8 Law School	1.660***	1.639***	2.040***	1.957***	2.185***

	(4.170)	(3.404)	(4.983)	(4.713)	(5.257)
Inbred	-0.210	-0.283	0.193	-0.0304	0.521
	(-0.329)	(-0.362)	(0.297)	(-0.0458)	(0.820)
Silver Corded	-0.116	0.427	0.577	0.313	0.0608
	(-0.297)	(0.870)	(1.437)	(0.770)	(0.151)
Constant	-4.342***	-4.644***	-4.232***	-4.668***	-4.910***
	(-5.931)	(-5.199)	(-5.572)	(-6.000)	(-6.342)
Observations	429	429	429	429	429
Log Likelihood	-594.085	-773.106	-644.930	-648.202	-617.807
Pseudo R-Squared	0.109	0.079	0.086	0.099	0.096

Notes: t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Aus. A* are ERA 2010 A* journals edited in Australia; Aus. A* +A are ERA 2010 A* + A journals edited in Australia; Smyth 10 are the top 10 law journals in Australia according to Smyth (1998); R&S 10 are the top 10 law journals in Australia according to Ramsey and Stapledon (1997); G8 are the law reviews of the Go8 law schools. Reference case for academic level is Lecturer. Reference case for LLM and PhD is not having an LLM or PhD.

Table 4: Tobit Model for Pages (including home review)

VARIABLES	Aus A*	Aus A* + A	Smyth 10	R&S 10	G8
Level					
Senior Lecturer	20.28	18.96	11.55	26.18*	16.20
	(1.438)	(1.266)	(0.795)	(1.744)	(0.986)
Ass. Prof.	41.51**	48.13***	34.29**	51.78***	37.48**
	(2.554)	(2.779)	(2.071)	(3.035)	(1.987)
Professor	41.09**	52.54***	40.31**	47.46***	41.29**
	(2.557)	(3.056)	(2.441)	(2.785)	(2.219)
Years in Academia	-1.365	0.224	0.901	-0.0686	1.009
	(-0.804)	(0.122)	(0.515)	(-0.0386)	(0.506)
Years in Academia ^{2}	0.0304	0.00272	-0.00126	0.00661	-0.0109
	(0.723)	(0.0606)	(-0.0297)	(0.152)	(-0.223)
Delay	14.51	9.539	14.93	13.87	20.64*
	(1.558)	(0.939)	(1.516)	(1.399)	(1.873)
Constitutional/Public Law	35.89***	27.02***	19.66**	32.09***	33.31***
	(4.053)	(2.743)	(2.080)	(3.384)	(3.182)
Male	13.74*	9.346	10.26	14.98*	14.05
	(1.652)	(1.021)	(1.173)	(1.693)	(1.439)
ARC Discovery	37.24***	34.03***	25.57**	33.34***	30.78**
	(3.619)	(2.971)	(2.351)	(3.039)	(2.553)
ARC Linkage	2.430	6.432	-1.759	4.609	-2.250
	(0.215)	(0.511)	(-0.147)	(0.385)	(-0.169)
LLB From					
G8	4.821	11.91	-6.356	-2.470	-2.415
	(0.469)	(1.061)	(-0.591)	(-0.227)	(-0.201)
UK	-59.90**	-13.31	-9.807	-31.63	-25.32
	(-2.288)	(-0.551)	(-0.438)	(-1.331)	(-0.960)
North America	-18.58	-17.13	-39.81*	-37.65	-35.71
	(-0.874)	(-0.730)	(-1.692)	(-1.585)	(-1.365)
LLM From					
G8	37.53***	36.01***	33.10***	35.63***	37.31***
	(3.362)	(2.941)	(2.823)	(2.991)	(2.858)
Non-G8	25.40	50.82**	37.97*	48.08**	41.78*
	(1.269)	(2.476)	(1.885)	(2.397)	(1.837)
UK	12.71	-3.551	-3.657	18.48	-4.880
	(0.920)	(-0.234)	(-0.251)	(1.277)	(-0.296)
North America	22.59*	16.55	23.86*	24.34*	23.03
	(1.723)	(1.156)	(1.736)	(1.748)	(1.501)
Elsewhere	18.14	22.23	23.98	24.92	19.12
	(0.759)	(0.847)	(0.974)	(0.990)	(0.701)
PhD From					
G8	13.07	23.31**	15.66	16.05	21.28*
	(1.298)	(2.122)	(1.482)	(1.504)	(1.808)
Non-G8	48.73***	51.98***	40.50**	36.98**	41.24**
	(3.138)	(3.056)	(2.463)	(2.223)	(2.201)
UK	26.34*	32.27*	39.99**	16.21	40.56**
	(1.731)	(1.935)	(2.528)	(0.993)	(2.288)
North America	-2.863	-5.163	-7.376	-12.52	-5.075
	(-0.138)	(-0.222)	(-0.322)	(-0.541)	(-0.201)
Elsewhere	16.59	3.632	8.949	10.30	42.35
	(0.654)	(0.128)	(0.331)	(0.376)	(1.455)
At G8 Law School	40.57***	39.78***	51.83***	48.19***	60.02***

	(3.879)	(3.554)	(4.731)	(4.345)	(4.820)
Inbred	-2.627	-5.088	7.015	4.135	13.86
	(-0.157)	(-0.280)	(0.402)	(0.234)	(0.725)
Silver Corded	-3.540	5.733	12.14	7.373	0.784
	(-0.343)	(0.502)	(1.125)	(0.677)	(0.0646)
Constant	-112.9***	-111.3***	-121.8***	-127.6***	-149.2***
	(-5.859)	(-5.346)	(-5.947)	(-6.123)	(-6.409)
Observations	429	429	429	429	429
Log Likelihood	-1250.87	-1563.13	-1361.42	-1366.37	-1323.43
Pseudo R-Squared	0.052	0.041	0.043	0.047	0.045

Notes: See notes to Table 3.

Table 5: Tobit Model for Articles and Pages in All ERA A* Journals

VARIABLES	Number of Articles	Number of Pages
Level		
Senior Lecturer	1.083*	33.24**
	(1.929)	(2.080)
Ass. Prof.	1.879***	58.09***
	(2.909)	(3.164)
Professor	2.317***	65.62***
	(3.610)	(3.590)
Years in Academia	-0.0330	-1.120
	(-0.488)	(-0.583)
Years in Academia ^{2}	0.000387	0.0107
	(0.232)	(0.225)
Delay	0.492	12.84
	(1.338)	(1.228)
Constitutional/Public Law	1.524***	33.33***
	(4.275)	(3.283)
Male	0.388	13.26
	(1.161)	(1.397)
ARC Discovery	1.607***	46.90***
	(3.886)	(3.992)
ARC Linkage	0.0177	-0.419
	(0.0389)	(-0.0323)
LLB From		
G8	-0.126	0.207
	(-0.306)	(0.0177)
UK	-0.365	-0.856
	(-0.437)	(-0.0362)
North America	-0.219	7.996
	(-0.268)	(0.346)
LLM From		
G8	1.336***	36.21***
	(2.977)	(2.839)
Non-G8	0.829	20.12
	(1.040)	(0.885)
UK	0.556	11.12
	(1.030)	(0.725)
North America	0.761	27.77*
	(1.467)	(1.893)
Elsewhere	1.256	39.34
	(1.353)	(1.489)
PhD From		
G8	0.471	14.44
	(1.165)	(1.259)
Non-G8	1.398**	39.45**
	(2.237)	(2.227)
UK	1.344**	36.84**
	(2.262)	(2.180)
North America	0.281	12.23
	(0.342)	(0.527)
Elsewhere	0.222	4.033
	(0.225)	(0.144)
At G8 Law School	1.856***	43.75***

	(4.512)	(3.755)
Inbred	-0.467	-7.522
	(-0.681)	(-0.387)
Silver Corded	-0.117	-2.811
	(-0.283)	(-0.238)
Constant	-4.251***	-118.7***
	(-5.587)	(-5.493)
Observations	429	429
Log Likelihood	-676.01	-1441.30
Pseudo R-Squared	0.099	0.044

Notes: t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 6: Tobit Model for Articles (excluding home law review)

VARIABLES	Aus A*	Aus A* + A	Smyth 10	R&S 10	G8
Level					
Senior Lecturer	0.822	1.001	0.522	1.192**	0.720
	(1.543)	(1.549)	(1.004)	(2.084)	(1.366)
Ass. Prof.	1.361**	1.988***	1.198**	1.977***	1.377**
	(2.226)	(2.670)	(2.037)	(3.090)	(2.291)
Professor	1.416**	2.663***	1.699***	2.128***	1.337**
	(2.327)	(3.595)	(2.884)	(3.303)	(2.226)
Years in Academia	-0.0225	0.0307	0.0695	0.0383	0.0505
	(-0.354)	(0.393)	(1.121)	(0.585)	(0.789)
Years in Academia ^{2}	0.000470	-0.000145	-0.00102	-0.000574	-0.000938
	(0.298)	(-0.0759)	(-0.681)	(-0.360)	(-0.595)
Delay	0.452	0.139	0.247	0.307	0.487
	(1.313)	(0.326)	(0.723)	(0.862)	(1.417)
Constitutional/Public Law	1.783***	1.235***	0.568*	1.550***	1.289***
	(5.457)	(2.963)	(1.714)	(4.521)	(3.916)
Male	0.362	0.173	0.277	0.498	0.313
	(1.171)	(0.445)	(0.904)	(1.543)	(1.015)
ARC Discovery	1.148***	0.936*	0.412	0.772*	0.847**
	(3.001)	(1.933)	(1.087)	(1.953)	(2.229)
ARC Linkage	0.149	0.229	0.173	0.309	0.142
	(0.359)	(0.432)	(0.417)	(0.716)	(0.341)
LLB From					
G8	0.153	0.324	-0.280	-0.0624	-0.154
	(0.405)	(0.687)	(-0.750)	(-0.158)	(-0.412)
UK	-1.755*	-0.511	-0.379	-0.833	-1.427
	(-1.837)	(-0.504)	(-0.485)	(-0.983)	(-1.603)
North America	-1.723*	-2.053*	-2.252**	-2.239**	-2.456**
	(-1.878)	(-1.862)	(-2.425)	(-2.298)	(-2.503)
LLM From					
G8	1.482***	1.637***	1.123***	1.212***	1.345***
	(3.569)	(3.161)	(2.747)	(2.797)	(3.278)
Non-G8	1.003	2.386***	1.292*	1.849***	1.458**
	(1.372)	(2.792)	(1.885)	(2.604)	(2.118)
UK	0.581	0.0594	-0.0645	0.856	0.259
	(1.114)	(0.0919)	(-0.126)	(1.629)	(0.492)
North America	0.651	0.567	0.548	0.758	0.721
	(1.310)	(0.922)	(1.116)	(1.478)	(1.463)
Elsewhere	0.949	0.176	0.145	0.316	0.426
	(1.091)	(0.156)	(0.164)	(0.337)	(0.486)
PhD From					
G8	0.792**	1.124**	0.581	0.789**	0.702*
	(2.120)	(2.410)	(1.556)	(2.018)	(1.881)
Non-G8	2.157***	2.623***	1.683***	1.536**	1.613***
	(3.778)	(3.694)	(2.986)	(2.567)	(2.808)
UK	1.230**	1.711**	1.694***	0.671	1.213**
	(2.166)	(2.428)	(3.063)	(1.121)	(2.131)
North America	0.318	0.176	0.201	0.0370	0.488
	(0.403)	(0.174)	(0.251)	(0.0441)	(0.615)
Elsewhere	1.026	0.981	0.612	0.679	1.557
	(1.072)	(0.806)	(0.626)	(0.660)	(1.619)
At G8 Law School	1.150***	1.074**	1.084***	1.081***	0.976**

	(2.957)	(2.267)	(2.866)	(2.707)	(2.547)
Inbred	-0.151	-0.398	-0.00899	-0.437	0.113
	(-0.246)	(-0.517)	(-0.0146)	(-0.664)	(0.185)
Silver Corded	-0.271	0.296	0.506	0.269	-0.156
	(-0.703)	(0.610)	(1.347)	(0.679)	(-0.409)
Constant	-4.654***	-4.845***	-4.245***	-5.169***	-4.674***
	(-6.357)	(-5.442)	(-5.809)	(-6.503)	(-6.222)
Observations	429	429	429	429	429
Log Likelihood	-507.85	-712.28	-560.76	-557.18	-507.87
Pseudo R-Squared	0.116	0.078	0.081	0.100	0.095

Notes: See notes to Table 3.

Table 7: Tobit Model for Pages (excluding home law review)

VARIABLES	Aus A*	Aus A* + A	Smyth 10	R&S 10	G8
Level					
Senior Lecturer	23.28	23.83	16.52	30.58**	23.20
	(1.631)	(1.646)	(1.197)	(2.048)	(1.419)
Ass. Prof.	38.50**	45.94***	35.08**	48.95***	43.59**
	(2.352)	(2.754)	(2.248)	(2.930)	(2.341)
Professor	35.67**	51.75***	42.24***	49.28***	42.23**
	(2.185)	(3.113)	(2.697)	(2.926)	(2.269)
Years in Academia	-0.349	0.970	1.840	1.305	1.311
	(-0.204)	(0.554)	(1.117)	(0.761)	(0.661)
Years in Academia ^{2}	0.00357	-0.0117	-0.0282	-0.0214	-0.0274
	(0.0845)	(-0.272)	(-0.708)	(-0.512)	(-0.561)
Delay	9.495	2.568	7.805	5.706	11.79
	(1.031)	(0.268)	(0.862)	(0.613)	(1.109)
Constitutional/Public Law	40.77***	27.76***	20.95**	36.73***	38.79***
	(4.643)	(2.968)	(2.386)	(4.093)	(3.807)
Male	12.06	4.831	8.702	14.28*	11.52
	(1.453)	(0.554)	(1.068)	(1.691)	(1.208)
ARC Discovery	30.72***	27.72**	16.86*	23.76**	28.68**
	(2.997)	(2.549)	(1.676)	(2.300)	(2.442)
ARC Linkage	-0.684	5.197	2.275	5.736	1.715
	(-0.0613)	(0.436)	(0.206)	(0.507)	(0.133)
LLB From					
G8	5.152	9.370	-4.456	0.0500	-1.356
	(0.508)	(0.885)	(-0.450)	(0.00485)	(-0.117)
UK	-40.40	-3.314	-6.273	-16.09	-36.96
	(-1.611)	(-0.147)	(-0.303)	(-0.732)	(-1.352)
North America	-48.43*	-45.60*	-61.15**	-61.64**	-78.93**
	(-1.945)	(-1.839)	(-2.441)	(-2.375)	(-2.522)
LLM From					
G8	38.41***	34.04***	31.15***	32.09***	40.73***
	(3.461)	(2.933)	(2.873)	(2.835)	(3.209)
Non-G8	26.88	47.54**	35.07*	49.13***	43.48**
	(1.377)	(2.474)	(1.927)	(2.651)	(2.039)
UK	14.09	-1.311	-2.964	21.55	4.668
	(1.010)	(-0.0903)	(-0.217)	(1.566)	(0.286)
North America	12.53	10.06	12.36	19.87	18.16
	(0.935)	(0.730)	(0.946)	(1.480)	(1.188)
Elsewhere	24.73	5.301	10.81	8.778	15.69
	(1.062)	(0.209)	(0.463)	(0.357)	(0.578)
PhD From					
G8	22.82**	24.32**	16.51*	20.76**	23.15**
	(2.277)	(2.325)	(1.668)	(2.032)	(2.007)
Non-G8	59.30***	58.34***	45.21***	43.55***	49.16***
	(3.891)	(3.665)	(3.022)	(2.795)	(2.769)
UK	32.68**	33.72**	40.25***	17.46	39.07**
	(2.147)	(2.129)	(2.729)	(1.113)	(2.220)
North America	13.24	0.118	4.675	2.899	13.11
	(0.627)	(0.00516)	(0.219)	(0.132)	(0.531)
Elsewhere	33.14	25.76	17.37	22.43	43.73
	(1.295)	(0.947)	(0.669)	(0.832)	(1.457)
At G8 Law School	27.74***	25.60**	26.89***	24.53**	27.11**

	(2.671)	(2.410)	(2.681)	(2.353)	(2.286)
Inbred	-0.827	-8.640	1.083	-6.822	0.465
	(-0.0505)	(-0.502)	(0.0663)	(-0.399)	(0.0246)
Silver Corded	-9.135	1.152	8.666	5.361	-6.146
	(-0.881)	(0.106)	(0.866)	(0.517)	(-0.521)
Constant	-123.8***	-109.4***	-117.6***	-135.9***	-142.8***
	(-6.311)	(-5.474)	(-6.035)	(-6.536)	(-6.150)
Observations	429	429	429	429	429
Log Likelihood	-1052.89	-1421.47	-1172.51	-1154.51	-1073.76
Pseudo R-Squared	0.054	0.040	0.041	0.048	0.046

Notes: See notes to Table 3.

Table 8: Regression Models for Citations Counts

	Tobit Model	Negative Binomial Regression	
VARIABLES	Google Scholar	H-Index	G-Index
Level			
Senior Lecturer	66.25	1.557***	1.872***
	(1.424)	(3.718)	(4.975)
Ass. Prof.	23.40	1.777***	1.954***
	(0.423)	(4.363)	(4.584)
Professor	243.2***	2.822***	3.614***
	(4.449)	(8.133)	(9.051)
Years in Academia	-4.464	1.025*	1.012
	(-0.746)	(1.950)	(0.782)
Years in Academia ^{2}	0.243	1.000	1.000
	(1.619)	(-1.010)	(0.105)
Delay	-13.48	0.996	0.992
	(-0.403)	(-0.0615)	(-0.0948)
Constitutional/Public Law	39.93	1.091	1.084
	(1.210)	(1.309)	(1.015)
Male	-22.50	1.082	1.031
	(-0.738)	(1.265)	(0.416)
ARC Discovery	184.7***	1.397***	1.519***
	(4.628)	(4.585)	(4.674)
ARC Linkage	91.61**	1.233***	1.228**
	(2.095)	(2.667)	(2.095)
LLB From			
G8	19.35	1.041	1.054
	(0.530)	(0.510)	(0.575)
UK	16.76	1.212	1.169
	(0.222)	(1.249)	(0.859)
North America	87.13	1.227	1.336*
	(1.153)	(1.387)	(1.673)
LLM From			
G8	-23.99	1.001	0.949
	(-0.592)	(0.00917)	(-0.514)
Non-G8	10.41	1.140	1.091
	(0.153)	(0.866)	(0.503)
UK	-72.00	0.929	0.874
	(-1.435)	(-0.722)	(-1.120)
North America	4.690	1.308***	1.306**
	(0.0990)	(2.869)	(2.397)
Elsewhere	3.701	1.155	1.060
	(0.0432)	(0.837)	(0.280)
PhD From			
G8	10.47	1.249***	1.241**
	(0.285)	(2.908)	(2.449)
Non-G8	29.40	1.529***	1.468***
	(0.525)	(3.590)	(2.750)
UK	81.98	1.334***	1.553***
	(1.451)	(2.591)	(3.357)
North America	129.7	1.199	1.364*
	(1.643)	(1.264)	(1.807)
Elsewhere	-63.73	1.217	1.265

	(-0.703)	(1.110)	(1.097)
At G8 Law School	62.36*	1.205**	1.216**
	(1.748)	(2.424)	(2.210)
Inbred	-13.33	1.044	1.083
	(-0.221)	(0.331)	(0.534)
Silver Corded	-4.174	1.079	1.096
	(-0.108)	(0.967)	(0.999)
Constant	-96.76	0.891	1.270
	(-1.476)	(-0.738)	(1.365)
Observations	429	429	429
Log Likelihood	-2744.99	-923.79	-1135.22
Pseudo R-Squared	0.029	0.147	0.121

Notes: t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 9: OLS Model for Articles (including home law review) and Citations (Google Scholar) After Removing Academics with Zero Publications/Citations

VARIABLES	Aus A*	Aus A* + A	Smyth 10	R&S 10	G8	Google Scholar
Level						
Senior Lecturer	0.233	0.299	0.556	0.568	0.510	25.13
	(0.360)	(0.403)	(0.903)	(0.848)	(0.804)	(0.497)
Ass. Prof.	1.076	1.604*	0.990	1.405*	1.148	14.35
	(1.498)	(1.907)	(1.462)	(1.941)	(1.606)	(0.240)
Professor	1.053	1.647**	1.689**	1.369*	1.069	222.3***
	(1.503)	(1.999)	(2.458)	(1.894)	(1.514)	(3.773)
Years in Academia	0.0242	0.0504	0.00675	-0.0277	0.0268	-9.519
	(0.353)	(0.619)	(0.0983)	(-0.397)	(0.372)	(-1.503)
Years in Academia ^{2}	-0.000886	-0.00144	-0.000699	-8.45e-05	-0.00111	0.345**
	(-0.550)	(-0.755)	(-0.452)	(-0.0521)	(-0.666)	(2.191)
Delay	0.504	-0.0117	-0.198	0.384	0.184	-3.246
	(1.393)	(-0.0265)	(-0.523)	(1.021)	(0.492)	(-0.0918)
Constitutional/Public Law	1.652***	1.473***	0.566	1.654***	1.192***	22.23
	(4.940)	(3.522)	(1.599)	(4.693)	(3.478)	(0.646)
Male	0.295	0.280	0.534	0.620*	0.513	-26.51
	(0.943)	(0.717)	(1.648)	(1.920)	(1.604)	(-0.821)
ARC Discovery	0.265	0.144	-0.0633	0.235	0.0655	155.1***
	(0.716)	(0.317)	(-0.167)	(0.622)	(0.176)	(3.740)
ARC Linkage	-0.216	-0.0671	-0.423	-0.126	-0.176	80.16*
	(-0.549)	(-0.136)	(-1.026)	(-0.312)	(-0.435)	(1.772)
LLB From						
G8	-0.0364	-0.0153	-0.346	-0.0752	-0.251	19.88
	(-0.0907)	(-0.0309)	(-0.846)	(-0.184)	(-0.620)	(0.511)
UK	-0.318	-0.654	-0.623	-0.287	-0.464	-10.79
	(-0.241)	(-0.578)	(-0.719)	(-0.287)	(-0.484)	(-0.138)
North America	-0.496	-1.256	-1.493	-1.163	-1.250	138.5*
	(-0.552)	(-1.161)	(-1.485)	(-1.133)	(-1.155)	(1.700)
LLM From						
G8	0.664	0.569	0.164	0.693	0.607	-52.10
	(1.548)	(1.076)	(0.378)	(1.551)	(1.421)	(-1.214)
Non-G8	1.398	1.874**	1.270	1.428*	1.420*	-8.582
	(1.618)	(2.017)	(1.565)	(1.810)	(1.727)	(-0.117)
UK	-0.432	-0.727	-0.685	-0.383	-0.612	-87.88
	(-0.835)	(-1.123)	(-1.273)	(-0.740)	(-1.130)	(-1.647)
North America	0.102	-0.166	0.281	0.147	0.176	-40.04
	(0.208)	(-0.272)	(0.556)	(0.290)	(0.353)	(-0.800)
Elsewhere	0.469	-0.621	-0.325	0.390	0.346	-32.02
	(0.480)	(-0.539)	(-0.353)	(0.399)	(0.369)	(-0.362)
PhD From						
G8	0.111	0.214	0.105	0.112	0.0769	-2.266
	(0.292)	(0.462)	(0.267)	(0.283)	(0.199)	(-0.0584)
Non-G8	0.417	0.792	0.576	0.537	0.518	-15.46
	(0.694)	(1.060)	(0.926)	(0.859)	(0.815)	(-0.262)
UK	0.0484	0.378	0.438	-0.243	-0.0130	60.03
	(0.0841)	(0.548)	(0.763)	(-0.410)	(-0.0229)	(1.007)
North America	-0.281	0.0417	-0.161	-0.341	-0.0733	203.1**
	(-0.380)	(0.0433)	(-0.194)	(-0.406)	(-0.0907)	(2.333)
Elsewhere	0.273	1.537	1.979*	1.590	2.497**	-89.43

	(0.249)	(1.111)	(1.694)	(1.333)	(2.168)	(-0.943)
At G8 Law School	0.473	-0.108	0.833*	0.644	0.714	46.05
	(1.057)	(-0.205)	(1.849)	(1.401)	(1.525)	(1.210)
Inbred	0.0890	-0.370	0.243	0.325	0.103	-42.12
	(0.136)	(-0.477)	(0.360)	(0.479)	(0.165)	(-0.680)
Silver Corded	0.245	0.730	0.789**	0.339	0.0163	-9.252
	(0.625)	(1.524)	(2.019)	(0.865)	(0.0413)	(-0.225)
Constant	-0.371	0.662	0.256	-0.179	-0.143	46.35
	(-0.499)	(0.704)	(0.318)	(-0.218)	(-0.179)	(0.636)
Observations	201	251	218	219	208	383
R-Squared	0.242	0.177	0.169	0.236	0.196	0.312

Notes: See notes to Table 3.

Table 10: Lewbel Two-Stage Least Squares Model for Articles (including home law review) and Citations (Google Scholar).

VARIABLES	Aus A*	Aus A* + A	Smyth 10	R&S 10	G8	Google Scholar
Level						
Senior Lecturer	0.162	0.122	0.0845	0.134	0.139	10.75
	(0.477)	(0.241)	(0.228)	(0.351)	(0.390)	(0.189)
Ass. Prof.	-0.0538	0.122	0.0278	-0.0857	0.0314	-57.85
	(-0.122)	(0.186)	(0.0578)	(-0.172)	(0.0681)	(-0.783)
Professor	0.348	0.825	0.840*	0.377	0.388	107.2
	(0.781)	(1.244)	(1.726)	(0.750)	(0.833)	(1.437)
Years in Academia	0.0250	0.0577	0.0313	0.0347	0.0385	-3.548
	(0.686)	(1.065)	(0.788)	(0.846)	(1.011)	(-0.582)
Years in Academia ^{2}	-0.000577	-0.00109	-0.000664	-0.000835	-0.000787	0.246*
	(-0.663)	(-0.841)	(-0.699)	(-0.851)	(-0.864)	(1.691)
Delay	0.400**	0.195	0.107	0.341	0.340*	-1.353
	(2.159)	(0.707)	(0.529)	(1.628)	(1.751)	(-0.0436)
Constitutional/Public Law	1.063***	0.963***	0.366*	1.003***	0.756***	23.08
	(5.764)	(3.504)	(1.819)	(4.820)	(3.912)	(0.747)
Male	0.292*	0.261	0.288	0.393**	0.297*	-16.98
	(1.708)	(1.026)	(1.540)	(2.037)	(1.658)	(-0.593)
ARC Discovery	1.031***	0.934**	0.423	0.836**	0.668**	163.8***
	(3.519)	(2.140)	(1.321)	(2.529)	(2.177)	(3.339)
ARC Linkage	0.147	0.666	0.159	0.301	0.109	129.6**
	(0.446)	(1.353)	(0.441)	(0.807)	(0.316)	(2.341)
LLB From						
G8	-0.0768	0.0694	-0.238	-0.122	-0.164	14.65
	(-0.382)	(0.232)	(-1.085)	(-0.536)	(-0.780)	(0.435)
UK	-0.553	-0.392	-0.259	-0.514	-0.303	-7.914
	(-1.307)	(-0.622)	(-0.560)	(-1.074)	(-0.683)	(-0.112)
North America	-0.521	-0.742	-0.792*	-0.707	-0.503	89.42
	(-1.240)	(-1.185)	(-1.726)	(-1.491)	(-1.143)	(1.271)
LLM From						
G8	0.640***	0.836**	0.517**	0.669**	0.641***	-58.53
	(2.763)	(2.420)	(2.043)	(2.558)	(2.640)	(-1.507)
Non-G8	0.607	1.409**	0.810**	0.946**	0.804**	-6.002
	(1.618)	(2.520)	(1.976)	(2.234)	(2.047)	(-0.0955)
UK	0.152	-0.100	-0.113	0.264	-0.0438	-75.69
	(0.547)	(-0.242)	(-0.370)	(0.838)	(-0.150)	(-1.621)
North America	0.445*	0.379	0.538*	0.555*	0.435	-23.15
	(1.673)	(0.957)	(1.851)	(1.852)	(1.564)	(-0.520)
Elsewhere	0.375	0.123	0.250	0.495	0.352	-55.91
	(0.770)	(0.170)	(0.470)	(0.902)	(0.691)	(-0.686)
PhD From						
G8	0.257	0.544*	0.223	0.344	0.273	6.407
	(1.238)	(1.761)	(0.984)	(1.470)	(1.256)	(0.184)
Non-G8	0.672**	1.180**	0.610*	0.582	0.547*	-3.910
	(2.130)	(2.508)	(1.768)	(1.633)	(1.653)	(-0.0739)
UK	0.312	0.767	0.764**	0.187	0.385	75.08
	(0.983)	(1.619)	(2.200)	(0.521)	(1.157)	(1.411)
North America	-0.284	-0.161	-0.184	-0.326	-0.149	157.4**
	(-0.640)	(-0.244)	(-0.381)	(-0.652)	(-0.321)	(2.122)
Elsewhere	0.300	0.560	0.404	0.424	0.928*	-39.89

	(0.584)	(0.731)	(0.720)	(0.732)	(1.725)	(-0.464)
At G8 Law School	0.568***	0.508*	0.671***	0.694***	0.707***	52.84
	(2.808)	(1.685)	(3.034)	(3.039)	(3.336)	(1.559)
Inbred	-0.173	-0.451	0.0261	-0.176	0.0838	-51.22
	(-0.508)	(-0.887)	(0.0700)	(-0.456)	(0.234)	(-0.896)
Silver Corded	0.0449	0.495	0.470**	0.265	0.0454	-2.546
	(0.209)	(1.543)	(2.000)	(1.089)	(0.201)	(-0.0706)
Constant	-0.915**	-0.927*	-0.609	-0.943**	-0.914**	13.68
	(-2.519)	(-1.713)	(-1.536)	(-2.302)	(-2.402)	(0.225)
Observations	429	429	429	429	429	429
R-Squared	0.226	0.198	0.165	0.204	0.182	0.303

Breusch-Pagan test for heteroskedasticity [Chi2(1) statistics for first stage regression of]
SL = 10.16***
AProf = 29.33***
Professor = 25.85***
ARC Discovery = 64.07***
ARC Linkage = 66.77***

Notes: See notes to Table 3.