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Assessment of Individual Research Performance for UK and Irish Accounting and Finance Academics

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Abstract

As a way of evaluating the successful implementation of a national research assessment, this study measures the individual research performance of 1,572 UK and Irish accounting and finance academics in the period 2004–05, twenty years after the implementation of the increased research focus in the UK through the Research Assessment Exercise (RAE). The findings show surprisingly low levels of research productivity with the average accounting and finance academic publishing less than one half of one publication per annum. Using two measures of quality*—Journal Impact Factors and the existence of Social Science Citation Index articles— the results reveal an even sparser picture with only 11 percent of these academics publishing their research in the most prestigious journals over a two year period. Doctoral-trained male professor or associate professor level academics from older universities were found to be more likely to produce high quality publications. These demographic data should raise concerns for research policymakers and research academics alike as they demonstrate a disparity in favour of an already well funded, high performing minority. The overall low level of accounting and finance academic productivity in the UK, after 20 years of regular scrutiny, raises major concerns about the efficacy of such all-encompassing national RAEs. Advocacy of a simpler, less intrusive approach such as the Dutch system is advanced.*

Introduction

Research activities are an essential contribution by universities throughout the world; however, the OECD (1987: 19) notes the mounting level of concern about 'the increasing cost of funding university-based research'. Tower and Ridgewell (2006: 3) further argue that:

> *… there is a world wide movement by governments to encourage (or force) universities to be more efficient with their research dollars. Governments, as the biggest funding resource for universities, expect high value for the money they grant the tertiary institutions.*

The now defunct Australian Research Quality Framework (RQF) (2005) documents three main models for national-based assessment exercises. The first are models not directly linked with research funding (e.g., continental European countries such as Germany). The second model focuses on outcomes-driven block funding for research (e.g., UK and Hong Kong). Under this approach, the monies received are based on outcomes, but the block funding itself is not tied to specific directions for future spending. The final model mixes elements of both (as is the case in New Zealand).

There are several stated advantages of all these national research assessment exercises (RAEs). The prime one is that they allow for more comprehensive assessment on the quality of research being undertaken, thus providing a more effective mechanism for allocating funds. Many countries in continental Europe use the first model. In Germany, research performance measures are generally not used to allocate research funds. However, there have been evaluations of university research that have not directly influenced funding. For instance, the Netherlands' research evaluation system has several broader purposes (Lucas, 2004). The end result of the assessment process is often a ranking which helps to underpin an institution's reputation or claims for research excellence (Geuna & Martin, 2003). In this first model, research evaluations are used less for the purpose of allocating funds than for evaluations for strategy formation. Unlike the British RAE, where disciplines are evaluated simultaneously, in the Netherlands they are evaluated at different times over a six year period. Committees assess each research program in terms of four aspects: scientific quality, scientific productivity, scientific relevance and long-term viability. Therefore, this approach takes into account both quantity and quality of activities. The New Zealand PBRF is a mixed model of assessment; most of their university funding is still based on student numbers yet some funds are allocated on research performance.

The UK RAE has served as a world model (Geuna & Martin, 2003) with UK academics used as the sample targeted for analysis. Although Irish Universities are not subjected to the RAE, these universities have been included in the sample due to their geographical proximity to identify potential indirect effects of the RAE on productivity. The focus will specifically be on the very large number of accounting and finance academics in the UK and Ireland. These academics are in the biggest faculty in universities-business, yet one without centuries of established academic background. Therefore, one would postulate that these business academics would demonstrate vast improvement and productivity in a UK environment with over twenty years of intensive RAE scrutiny. This study thus continues the contributions from Gray and Helliar (1994), Beattie and Goodacre (2004) and Brown, Jones and Steele (2007) by examining the research output, as measured by research publications, of over 1,500 UK and Irish accounting and finance academics for a two year period (2004–05). The twin objectives are to better understand *what* levels of publications are occurring and seeking to explain *why* there are such vast differences amongst these academics in terms of output.

Following this introduction, section two outlines past literature examining research outputs by accounting and finance academics in various countries. Section three highlights the research design adopted. Section four provides descriptive and statistical analysis of the *quantity* of research productivity by UK and Irish accounting and finance academics. Section five then provides additional sensitivity analysis via two additional *quality* measures for publications. Finally, section six provides concluding remarks about the level of research productivity by these academics and the relative perceived effectiveness of the RAE.

Literature Insights

Geuna and Martin (2003) state that many countries are increasingly relying on self-evaluation and a growing emphasis on linking research performance to determine the allocation of related block (untied) funds to universities. Research outcomes in jurisdictions such as UK, Hong Kong and New Zealand are measured via peer assessment of their contribution to society. In other words they use a surrogate value for research outcomes[1] by seeking to measure the quality of the research outputs.

The UK RAE is a complex, well funded comprehensive intrusive national research evaluative program and is thus used as a global exemplar (Hills & Dale, 1995). It is complex in its structure and scope and, moreover, funding arrangements have been greatly increased. It is comprehensive in its breadth of analysis and is intrusive in that it has fundamentally changed research expectations in Britain. The UK RAE is an *ex post* evaluation based on informed peer review. All research activities are categorised into a number of units of assessment. Chairs and panel members are based on factors such as eminence of individuals, convergence of the subject, and sectoral and geographical balance (Ridgewell & Tower, 2005). The funding bodies use the rating in the formula to determine the research funding for each unit of assessment, with the total block grant received being calculated by summing across all units (HERO, 2005).

Clear advantages of the British-style RAE are that it has provided the basis for increased research funding and more comprehensive information on the quality of research produced. It also has the potential to compile additional comprehensive information on the quality of research being undertaken thus providing for a more effective mechanism for allocating funds. Such evaluation is first conducted on the individual researcher and then the data aggregated into discipline and institutional level.

There are, however, obvious problems with such a national assessment approach and the concurrent changes to funding. Disadvantages include the concern for the financial sustainability of research in some disciplines, inequitable workplace behaviours, administrative burden and costs and a need to fully recognise all aspects of excellence in research (HERO, 2005). As Beattie and Goodacre (2004) argue, publication activity provides only a partial view of scholarly activity with teaching and administrative services making up a considerable part of a scholar's work. Other unintended consequences and indirect effects of an RAE-like assessment of research have been identified. Lucas (2004) observes the divisions created within and across departments and the relegation of teaching as a secondary priority. It may also encourage inflated publication figures (by

splitting publications into the lowest possible units), game-playing behaviour and the discouragement of more creative scholarship (Geuna & Martin, 2003; Ridgewell & Tower, 2005).

Moreover, only a minority of the best UK/Irish research academics are strategically selected for evaluation. Certainly very little literature is devoted to how well researchers apply their findings in a teaching situation (Hutchinson, 1989) but many would argue that it is problematic enough to measure research output as against the research/teaching nexus. Overall, an RAE-style peer assessment evaluative process may still be advantageous to accounting and finance academics by placing a greater focus on research outputs (as evaluated by peers). This allows for a much fairer assessment criteria for disciplines (such as business) which do not tend to receive the large research grants obtained by their science-based brethren.

While teaching, research and service are the three key contributions of higher education and their academic staff, this study focuses solely on the research activity aspect. Tower and Ridgewell (2006: 11) argue that 'a comprehensive, effective system to assess and reward … accounting research output should greatly assist the ability of these professions to be rewarded for their research contributions'. Arguably, performance management has been fundamentally changed by this national RAE assessment focus with academic recruitment, early retirements, promotions and annual evaluations all having a greater priority on research performance than was previously the case.

Hasselback, Reinstein and Schwan (2000) noted that previous studies have provided only three types of benchmarks for accounting research productivity: qualitative rank-ordering of accounting and related journals, quantitative measures of total and average research productivity of faculty, and quantitative measures of total and average research productivity according to the university at which the faculty member earned their doctoral degree Their findings consistently show low levels of accounting and finance academic research activity and a low percentage of relevant staff producing measurable outputs.

Gray and Helliar (1994) reported on the publication record of UK accounting and finance academics for the period 1990–91. They discussed several trends including growing institutional pressures to produce research, the aging UK academic demographics and a low but slowly increasing percentage of female academics. Interestingly, an earlier study by Gee and Gray (1989) recognised that some polytechnic staff were not involved in degree work and were not necessarily involved in research productivity. However, Hutchinson (1999) found that once the analysis moved beyond the concentration of *top 10* universities, polytechnics' publication output appeared quite favourable in comparison to non-top 10 universities, though this observation is not apparent in the 1994 Gray and Helliar study.

In a series of stepwise regressions that analysed research production in six categories, Gray and Helliar (1994) found the two key explanatory variables were type of university and educational level. Academic level was also a frequent predictor with Gray and Helliar (1994: 248) stating that 'while "publication" may explain "post", "post" also explains "publication"'. Gender, age and professional qualifications were generally not predictors of

research output. The authors also noted more productivity from auditing and management accounting academics.

Beattie and Goodacre (2004) took a more reflective approach to UK and Irish accounting and finance academics using 1998–99 data. They concluded that senior staff published more frequently and possession of a PhD was associated with a greater volume of academic journal output. They also observed other trends such as publication rates from staff of older universities being triple those of academics from the newer institutions that have been granted university status in more recent times. They then observed a strong positive correlation between academic level and the number of publications. Interestingly, they found that the research non-participation rate remained about 50 percent for the two year study period.

A comprehensive study by Brown *et al.* (2007) covering the *British Accounting Review* publications of UK accounting and finance academics from 1982–2004 focuses on the composition of academics, trends in publications, identification and trends of journal publications, and publication topics. Brown *et al.* (2007: 147) found that while staff numbers have continued to 'increase slightly … the proportion of staff publishing falls to 41% in 2004 and number of journal articles per head falls from 1.7 to 1.5 from year 2000 to 2004'.

While publication quantity appears more easily observable, assessing the quality of publications is somewhat more obscure. According to Beattie and Goodacre (2004) journal ranking may be considered under three broad approaches:

1. the Social Sciences Citation Index (SSCI) which attempts to present an objective indicator of influence (see Chan, Fok & Pan, 2000, for a relatively recent update of citation-based finance journal rankings)
2. perception studies generally based on feedback from surveys (see Brown *et al.*, 2007, for their use of perception studies and Tinker, 2006, for recent results from academia that shatter some of the well-publicised myths of journal quality)
3. market tests based on library holdings (see Locke & Lowe, 2002).

Far from being objective, each approach presents complex constructions and highly subjective indications of rank. Lukka and Kasanen (1996) warn of the propensity of accountants to lean towards the local rather than the global but the exclusion of quality non-English speaking accounting journals from, for example, Beattie and Goodacre's (2003) top 60 list seems to demonstrate some level of Anglo-centric bias.

An in-depth review of 24 years of accounting academics in the UK by Brown *et al.* (2007) demonstrates that although there has been a dramatic increase in the number of accounting academics and their qualifications, the number of publications in the UK per head declined after the year 2000. Moreover, Brown *et al.* (2007) observe that the number of accounting academics publishing in what are considered the top international journals has dramatically declined.

On the other side of the Atlantic Ocean, Glover, Prawitt and Wood (2006) discuss the US publication experience having investigated the publication records of faculty promoted at the top 75 accounting research programs from 1995–2003. Their results indicate that faculty promoted to associate professor and professor at top ranked research schools focus their efforts on publishing in academic journals considered of higher quality rather than publishing a greater number of articles in professional or other less highly ranked academic journals. Further evidence indicates that those promoted to full professor at lower ranked universities publish a greater number and variety of publications than faculty promoted to full professor at higher ranked universities, suggesting a compensating model that involves trading off quantity of articles with journal quality.

Gray and Helliar (1994) further noted the alternative media by which accounting and finance academics may disseminate their findings, such as newspapers, radio, web and conference proceedings. Brown *et al.* (2007) comment that publication trends also include more 'special purpose, as opposed to general, accounting journals' (p. 128) as the top or premier journals appear to be less receptive to specialised areas of research. The issue of analysing research quantity and quality and the approach taken for this study is readdressed in sections four and five. The remainder of this paper explores the research contributions by UK and Irish accounting and finance academics by analysing both the quantity and quality of their publications.

Research Approach

This study involves a two year analysis of research publications of 1,572 academic staff members in accounting and finance departments throughout the UK and Ireland. The academic research output data was collected from the 12th edition of the biennial British Accounting Association Research Register (2006). This follows on from the comprehensive study by Brown *et al.* (2007) and the much earlier data used by Gray and Helliar (1994) and Beattie and Goodacre (2004).

Three key research questions are addressed in this study:

- *What is the quantity* of research publications of UK and Irish accounting and finance academics?
- *What is the quality* of the research publications of UK and Irish accounting and finance academics?
- *What factors explain* differences in the quantity and quality of UK and Irish accounting and finance research productivity?

Bentley (2003) demonstrates the shortcomings of available measures of scholarly production that utilise simple counts of article and book publications as the most frequently used measure of scholarly productivity. This study uses this same measure and presents publication data both from a quantity perspective (section 4) and a quality measure (section 5). Research outputs that are analysed in this study include only those published in years 2004 and 2005 and consist of journal articles, books, book chapters, edited books, reports and monographs. Conference papers, editorials, newspaper articles

and others are excluded from the analysis.[2] Quantity of publications is thus measured as a count of number of articles (discounted by number of co-authors) published in the two year period by each academic. As detailed later, the quality of publications is computed by adjusting this quantity score by SSCI quality weightings.

The research findings are contrasted with the three key past studies on British research productivity by Brown *et al.* (2007), Beattie and Goodacre (2004) and Gray and Helliar (1994). T-tests, post hoc Tukey, analysis of variance (ANOVA), multiple regression and logistical regression techniques are used to present the statistical analysis.

Quantity Measure of Individuals' Productivity

These next two sections highlight the quantity and quality research productivity by 1,572 UK and Irish accounting and finance academics over the most recently available two year period. The quantity variable is measured as the annual average of total fully refereed research pieces per accounting and finance staff member[3] at UK and Irish universities (2004–05). The average rate of publication is arguably low, being 0.424 annually. This publication rate ranges from 0 to 12.0 with a standard deviation of .1572 and median of zero. More than half (57.12%) of the accounting and finance staff members have not written or collaborated in any publications, and an additional 19.08 percent have produced less than 0.5 publications per year. The percentage of academic staff that have authored between 0.5 and 1 annually is 10.63 percent and only 13.17 percent of the academics average more than one publication per year.

Four possible predictor variables are analysed in this study: university type, educational qualification, academic level and gender. These characteristics have been found, in several past studies on academic productivity, to be helpful predictors (see Gray and Helliar, 1994; Beattie and Goodacre, 2004; Tower *et al.*, 2006). Table 1 shows the frequencies of these variables for the UK and Irish accounting and finance academics.

Table 1: UK and Irish Accounting and Finance Academic Characteristics

Category	*University Type*		*Qualification*		*Level*		*Gender*	
	Freq	*%*	*Freq*	*%*	*Freq*	*%*	*Freq*	*%*
0	715	45.48					447	28.89
1	857	54.52	736	48.87	348	23.67	1100	71.11
2			529	35.13	984	66.94		
3			241	16.00	138	9.39		
	1572	100	1506	100	1470	100	1547	100

Source: Original table.

Note: University Type - (0) New universities, (1) Old universities; Educational Qualification - (1) Doctor, (2) Master, (3) Bachelor; Level - (1) Professor & A/P, (2) Senior Lecturer & Lecturer, (3) Other; Gender - (0) Female, (1) Male.

Table 1 shows that the majority (54.52%) of accounting and finance academics in Britain and Ireland work at old universities[4], hold doctorates, masters and bachelor educational qualifications of 48.87 percent, 35.13 percent and 16.00 percent respectively.

Almost a quarter (23.67%) of academic members are at professor or associate professor level. Finally, more than two thirds (71.11%) of UK and Irish accounting and finance academics are male.

The initial analysis shows the interrelationships of these variables via Pearson and Spearman correlations as highlighted in Table 2. This table presents the correlations between the three alternative dependent variables and all independent variables. The upper half of each panel reports Pearson pairwise correlation coefficients (cr_p) and the lower half reports Spearman correlation coefficients (cr_s). As expected, the dependent variables are all positively correlated. The dependent variables (*Quantity* and the two measures of *Quality*) are negatively and significantly associated with two of the independent variables: *Education* ($p<0.01$ cr_p and cr_s) and *Level* ($p<0.01$ cr_p and cr_s). In contrast, the dependent variables are positively and significantly associated with *Gender* and *University Type* ($p<0.01$ cr_p and cr_s). The statistical correlations also show that the correlation amongst independent variables occurs between *Qualification* and *Level* ($p<0.01$ cr_p and cr_s) and *Level* and *Gender* ($p<0.01$ cr_p and cr_s). As the highest correlation value (0.433) is far below the critical limits of 0.80 (Hair *et al.*, 1995; Cooper & Schindler, 2003), this suggests that multicollinearity is a not a concern.

Table 2: Pearson and Spearman Correlation Matrix

	Quantity	*Quality$_{JIF}$*	*Quality$_{EXISTENCE}$*	*Education*	*Level*	*Gender*	*Uni Type*
Quantity	1	.368*	.421*	-.275*	-.373*	.093*	.251*
Quality$_{JIF}$	.453*	1	.567*	-.139*	-.174*	.071*	.139*
Quality$_{EXISTENCE}$	.452*	.998*	1	-.232*	-.266*	.072*	.239*
Education	-.431*	-.243*	-.244*	1	.312*	-.030	.416*
Level	-.459*	-.275*	-.274*	.337*	1	-.120*	-.325*
Gender	.098*	.075*	.072*	-.027	-.127*	1	-.027
Uni Type	.411*	.238*	.239*	-.433*	-.324*	.027	1

Source: Original table.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively (based on two-tailed tests).

Table 3 presents the multiple regression analysis with the *Quantity* variable and four predictor variables of *Level*, *Qualification*, *Gender and University Type*. The regression model estimates reported in Table 3 are highly significant (F-statistic $p<0.01$) with explanatory power of 17.1 percent. The coefficients on *Qualification* and *Level* are negative and significant at $p<0.01$. These results suggest that if staff members have a doctoral qualification then their research output will be fundamentally greater. The research output is also more likely to be higher when the staff member is at a professor or an associate professor level. The coefficients on *Gender* and *University Type* are positively and significantly ($p<0.01$) associated with the average fully refereed publication measure of *Quantity*. It supports the view that male academic members produce greater research output than their female counterparts. Similarly, accounting and finance academics from older, more established universities fundamentally publish more than staff from newer universities. Descriptive details and ANOVA analysis by category is provided to offer a better understanding of this phenomenon (see Tables 4a & 4d).

Table 3: Predictors of *Quantity*

	t-stat	*p-value*
(Constant)	12.886	0.000
Level	-10.824	**0.000***
Qualification	-5.308	**0.000***
Gender	2.220	**0.027****
University type	3.215	**0.001***
Model Summary		
F-statistic	72.841	**0.000***
R-Square	0.173	
Adjusted R-Square	0.171	
Sample Size	1398	

Source: Original table.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively.

Table 4a shows that the mean of the female staff (0.31) research outputs is significantly lower compared to the average research outputs of the male staff (0.48). An independent samples T-Tests confirms that these levels of production are highly significantly different ($p<0.001$).

Table 4b demonstrates that the average research output is far higher (1.11) at the professor/associate professor level compared to the two other level groups (both below 0.25). Additional Tukey HSD analysis (not shown for brevity) confirms that these differences are caused by the larger differences at the professor/associate professor level. Gray and Helliar (1994) also note that the 'achievement of promotion would seem to be associated with a continuing publication activity. This seems to be an especially plausible conclusion for professors' (p. 249).

Table 4c then offers data on educational level. The average research output for doctoral qualified staff is significantly higher (0.70) compared to the two other qualifications (master is 0.21 and bachelor is 0.15). Again Tuckey HSD analysis confirms that the key difference is with doctoral level productivity. Table 4d reveals that the academics from old universities publish over three times as often (0.62) as new tertiary institutions (0.19).

Overall, the key conclusion in the section four data analysis of *Quantity* is that, in the two year date period available (2004–05), 1,572 UK and Irish accounting and finance academics averaged less than one half of one refereed research piece per annum. This is despite a twenty year focused effort in Britain to increase research productivity via the RAE (see Tower & Ridgewell, 2006 for an in-depth discussion). These findings of low research productivity are consistent with other studies albeit finding even lesser levels of achievement as time goes on. For instance, Beattie and Goodacre's (2004) UK study of accounting academics' publication records reveals the mean number of publications by the community during 1998 and 1999 was 0.88 on an annual basis. Similar results for academic rank, tenure and possession of a PhD were found by Brown *et al.* (2007) with journal

output decreasing since 2000. Moreover, post hoc Tukey analysis (not shown for brevity) reveals that intra-academic activity (with no direct RAE influence) is not lower than the UK universities (subject to RAE).

Table 4a: UK and Irish Accounting and Finance Academics (*Quantity*) - Gender

	N	*Quantity Average Fully Refereed per Staff*			
		Mean	*SD*	*t-value*	*p-value*
(0) Female	447	0.305	0.596	-4.380	**0.000***
(1) Male	1100	0.479	0.922		
	1547				

Table 4b: UK and Irish Accounting and Finance Academics (*Quantity*) - Level

	N	*Quantity Average Fully Refereed per Staff*			
		Mean	*SD*	*F*	*p-value*
(1) Prof + A/P	348	1.107	1.303	164.251	**0.000***
(2) Senior Lec + Lec	984	0.248	0.496		
(3) Other	138	0.210	0.641		
	1470				

Table 4c: UK and Irish Accounting and Finance Academics (*Quantity*) - Qualification

	N	*QUANTITY Average Fully Refereed per Staff*			
		Mean	*SD*	*F*	*p-value*
(1) Doctor	736	0.695	1.013	72.568	**0.000***
(2) Master	529	0.212	0.580		
(3) Bachelor	241	0.148	0.513		
	1506				

Table 4d: UK and Irish Accounting and Finance Academics (*Quantity*) - University Type

	N	*DV-2*			
		Mean	*SD*	*t-value*	*p-value*
(0) New	715	0.193	0.694	-10.531	**0.000***
(1) Old	857	0.617	0.900		
	1.572				

Source: Original tables.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively.

Tower *et al.* (2006) derived similar results in Australia. Publication data was viewed as low with the typical Australian accounting academic averaging only 0.49 weighted publications in 2003. They also counted conference papers thus increasing the measured

count. Tower *et al.* argued that this low level of productivity had major implications for career advancement and funding arrangements for Australian accounting schools. Academic level, educational qualification, gender, and staff working in smaller departments were found statistically to predict research output in their Australian study. In summary, Tower *et al.* (2006) found that, on average, male doctoral qualified professors in smaller-staffed departments tend to publish more than others.

Further logistical regression analysis (not shown for brevity) on the UK/Irish data reveals that academic level, educational qualification and type of university are all highly significant factors ($p<0.001$) in predicting the likelihood that an academic will publish *any quantity* of publications in this latest two year period. Five-hundred and forty of 857 accounting and finance academics from older universities had at least one publication whereas only 141 of 715 did so from the newer universities. Males were also more likely to publish so-called quality articles than females at a moderately significant pace ($p=0.073$).

Overall, the above analysis consistently shows a low level of accounting and finance academic research output which appears to be dropping over time despite the long-lived existence and supposedly pervasive and dramatic influence of the UK RAE. Whilst the percentage of doctorate-trained academic staff has increased in UK and Ireland, the related increase in the quantity of research productivity has not eventuated.

Quality Measures of Individual Productivity

Beattie and Goodacre (2004) observe that 'raw counts are often transformed into "quality" adjusted measures based on journal rankings' (p. 2). The national assessment exercises, such as the RAE, state that they focus on quality and not just quantity of research outputs. Therefore, further analysis is conducted in section five to explore two alternative measures of quality.

Beattie and Goodacre (2004) further note that there are three main approaches to evolve journal rankings: citation indices, perception studies and market-test measures (such as library holdings). While Brown *et al.* (2007) advocate the use of perception studies (with caution), authors such as Harnad *et al.* (2003) and others advocate greater use of citation measures by national assessment exercise bodies as the prime measure of quality. They feel that use of more objective and quantifiable indicators such as Journal Impact Factors (JIF) is a better and less subjective way of measuring research performance. Harnad *et al.* (2003) observe a high correlation (above 0.80) of the JIF with science-based disciplines in the UK RAE assessments.

The UK RAE assessment is built on the concept of quality of research activity. Yet the definition of quality in past studies is problematic. For instance Gray and Helliar (1994) employ a 'journal perception ranking' approach by using ten categories; they are identified as 'premier journals (always refereed) [and] secondary journals (predominantly academic but not always refereed or refereeing policy unclear)' (p. 241) with 40 and 39 journals identified as 'premier' or 'secondary' respectively. There are other highly constructed Anglo-centric compilations. For instance, a top 60 journal list composed of a top 30 accounting and finance list is used by Brinn, Jones and Pendlebury (2001) and a top *others* based on a study by Harzing (2001), while Brown *et al.* (2007) identifie a top 44 refereed

academic accounting journals in three distinct groups: a top 6 (international), top 16 and top 44. Tinker (2006), however, provides a scathing review of such self assessment models by academics. Hence, quality is measured in this study via the more independently-generated citation indices.

Tower *et al.* (2007) further note that even within the set of studies that use citation indices there is disagreement over whether the measure for quality should be a simple dichotomous scale of yes/no the publication is an SSCI journal or not versus the usage of the JIF score available in Thomson SSCI indices. In this study, the authors adopt both approaches and the *Quality* variable is measured in two different ways. First, $Quality_{JIF}$ is calculated as the total JIF score per accounting and finance staff member for the years 2004 and 2005 at UK and Irish universities. Second, $Quality_{EXISTENCE}$ is calculated as the existence (or not) of any SSCI journal articles for each academic in the 2004–05 period.

Analysis of Quality$_{JIF}$

The data shows that the total JIF per staff has a mean of 0.146 and standard deviation of 0.742. These JIF scores range from zero (also the median score) to 21.634. In other words, the average impact factor score was less than .2 and the norm was a zero strike rate. Statistical analysis is provided in Table 5 to reveal further insights.

Table 5: Multiple Regression Analysis - $Quality_{JIF}$

	t-stat	*p-value*
(Constant)	4.487	0.000
Level	-4.248	**0.000***
Qualification	-2.464	**0.014****
Gender	2.048	**0.041****
University Type	2.281	**0.023****
Model Summary		
F-statistic	16.243	**0.000***
R-Square	0.045	
Adjusted R-Square	0.042	
Sample Size	1398	

Source: Original table.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively.

The regression model reported in Table 5 is highly significant (F-statistic $p<0.01$) although with low explanatory power of 4.2 percent. The coefficients on *Qualification* and *Level* are negative and significant at $p<0.014$ and $p<0.000$. These results suggest that if a staff member has a doctoral qualification then his or her research quality will be greater. The research outputs are also more likely to increase when the staff member is at a professor or an associate professor level. The coefficients on *Gender* and *University type* are positively and significantly ($p<0.042$) associated with the average fully refereed publication $Quality_{JIF}$ measure. This infers that male academic members produce greater research

quality than their female colleagues and, again, old university staff outperform their new counterparts. Tables 6a–d provide additional details for each predictor variable of quality.

Table 6a: UK and Irish Accounting and Finance Academics (*Quality$_{JIF}$*) - Gender

	N	*Total JIF per staff*			
		Mean	*SD*	*t-value*	*p-value*
(0) Female	447	0.066	0.260	-4.016	**0.000***
(1) Male	1100	0.182	0.869		
	1547				

Table 6b: UK and Irish Accounting and Finance Academics (*Quality$_{JIF}$*) - Level

	N	*Total JIF per Staff*			
		Mean	*SD*	*F*	*p-value*
(1) Prof + A/P	348	0.429	1.413	30.652	**0.000***
(2) Senior Lec + Lec	984	0.071	0.335		
(3) Other	138	0.059	0.392		
	1470	0.155	0.765		

Table 6c: UK and Irish Accounting and Finance Academics (*Quality$_{JIF}$*) - Qualification

	N	*Total JIF per Staff*			
		Mean	*SD*	*F*	*p-value*
(1) Doctor	736	0.269	1.040	17.767	**0.000***
(2) Master	529	0.045	0.259		
(3) Bachelor	241	0.026	0.221		
	1506	0.152	0.757		

Table 6d: UK and Irish Accounting and Finance Academics (*Quality$_{JIF}$*) - University Type

	N	*Total JIF per staff*			
		Mean	*SD*	*t-value*	*p-value*
(0) New	715	0.033	0.244	-6.014	**0.000***
(1) Old	857	0.240	0.970		
	1572				

Source: Original tables.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively.

Table 6a ANOVA analysis is performed to detect whether the means of the total JIF per staff (*Quality$_{JIF}$*) for female and male staff are significantly different. The mean of the

female (0.066) staff research outputs (as measured by JIF scores) is three times lower and statistically significantly lower compared to the average research outputs of the male staff (0.182). Further ANOVA analysis is performed to find out whether the means of the total JIF per staff ($Quality_{JIF}$) by academic position differ. As indicated in Table 6b the mean of the total JIF (0.429) at the professor/associate professor level is over four times higher than two other academic level averages of less than 0.1. Table 6c then shows that the average research outputs for doctoral qualified staff is significantly higher (0.269) compared to the two other qualifications (master's degree is 0.045 and bachelor is 0.026). Finally, Table 6d highlights that older university academic staff record JIF scores (as a surrogate measure for quality) almost eight times higher than those from the academics of younger universities. Overall, most (89.25%) UK and Irish accounting and finance academics do not publish in journals that have JIF scores. Only 6.74 percent of this large population have JIF scores between zero and one and a smaller 4.01 percent have average JIF scores more than one.

In summary, great variance is found in $Quality_{JIF}$ which utilises the JIF score as the quality measure. The two key findings are:

1. very low average JIF scores even for the small minority of academics that published in high quality journals
2. male doctoral-qualified professors/associate professors from older universities have far higher quality JIF scores in their research publications than all other UK and Irish accounting and finance academics.

Analysis of $Quality_{EXISTENCE}$

An alternative way to calculate *Quality* is the existence or not of *any* SSCI journal over the two year period. The data reveals only 169 of the 1,572 (10.75%) UK and Irish accounting and finance academics had such success. Table 7 provides logistical regression analysis to test for possible predictors of $Quality_{EXISTENCE}$.

Table 7 shows that three of the variables predict the likelihood of any academic having an SSCI journal or not, these being academic level, education and university type. The percentage of professors or associate professors with an SSCI article is 19.29 percent compared to 6.27 percent for all other levels. In addition, 28.16 percent of academic staff who have doctorate qualifications published in the SSCI journals as against 10.12 percent of academic members that hold master and bachelor degrees. Only 19 of 715 academics at new universities had an SSCI published article as against a much higher 150 of 857 for older university staff. Finally, further analysis reveals that 12.36 percent of men had an SSCI article next to 7.38 percent of women; however, this difference is statistically insignificant (p-value 0.115).

Gray and Helliar (1994), Beattie and Goodacre (2004) and Brown *et al.* (2007) evaluated quality in varied ways by using different perception studies rankings of academic journals. Yet Tinker (2006) expresses great concern about 'mainstream' accounting academic surveys and argues there is an inherent and clear bias. He states that: 'most surveys that rate journals are loaded in favour of the mainstream in two ways: first in the

choice of rater, second, in terms of the questions asked' (p. 708). No matter how measured, the results of Gray and Helliar (1994), Beattie and Goodacre (2004) and Brown *et al.* (2007) are very similar to the findings in this study. There is an overall low level of UK and Irish accounting and finance academics that publish in quality journals. Of those that do, they are most likely to be doctoral-qualified professors or associate professors working in older universities.

Table 7: Logistical Regression Analysis - *Quality*$_{EXISTENCE}$

	p-value
(Constant)	0.335
Level	**0.000***
Qualification	**0.000***
Gender	0.115
University Type	**0.000***
Model Summary	
Overall Percentage	88.13
Cox and Snell R-Square	0.121
Nagelkerke R-Square	0.234
Sample Size	1398

Source: Original table.

Note: * and ** indicate significance at $p<0.01$ and $p<0.05$ respectively.

Of further special interest is the comparison of Irish academic productivity versus UK as the latter, though not the former, is subject to direct RAE pressures. A post hoc Tuckey was conducted on all countries included in the sample. There was no significant difference demonstrated between research productivity of countries. Irish academics do not demonstrate lower outputs than their UK counterparts. This raises questions of the effectiveness of the RAE for generating research productivity.

Concluding Remarks and Implications

As discussed throughout this paper, there appears to be a growing call for some sort of RAE in numerous countries (e.g., Gray & Helliar, 1994; Beattie & Goodacre, 2004; Brown *et al.*, 2007). Many European countries are considering linking research more directly to performance and funding. Concerns about the loss of independence of the universities and the cost of such exercises are the main hurdles (Geuna & Martin, 2003).

Overall, the analysis of research productivity quantity and quality in sections four and five highlights the sparsity of JIF and SSCI achievements by UK and Irish accounting and finance academics over a two year period and, more fundamentally, the lack of research productivity of *any* nature for the majority. Our results lead to the conclusion that after 20 years of the high profile and pervasive RAE, UK accounting and finance academics need to improve their research outputs.

Tower and Ridgewell (2006) cite several reasons for such underproduction. First, lower levels of scholarly research training with accounting and finance academics having one of the lowest levels of doctoral training within universities. Second, higher teaching loads for popular business courses with corresponding higher staff/student ratios. Third, lower availability of research grants making it more difficult to compete against other more established science or social science disciplines. Brown *et al.* (2007) also consider several reasons for the decline in quantity and quality since 2000. These include the increased trend towards *niche* areas and methodological approaches outside mainstream accounting which result in lower-ranked publications. Another reason for the decline is that the number of non-UK authors in UK publications has risen with this increased competition to the possible detriment of UK authors.

The results of this study have several far-reaching implications. First, the publishing success of professors needs to be better harnessed to provide a platform for encouraging early career researchers to increase the quantity and then the quality of their output. As senior academics leave the universities, the new wave of academics need to take their place in the research productivity ranks. If adequate mentoring does not take place, junior academics will not benefit from the wealth of experience of their departing colleagues. This challenge is particularly acute for newer universities which may not have formalised processes to ensure this knowledge transfer takes place. Second, newer universities should consider building a research culture that promotes collaborative research with colleagues from older universities. This rejuvenated culture should also encourage research teams in which female researchers take active roles.

As Geuna and Martin (2003) suggest, many countries are increasingly linking research performance to research fund allocation. The modest research output in the UK has serious implications for staff promotions if the UK proceeds towards a US-style model of rewarding and recognising research performance. Researchers are rewarded and promoted not only on research quantity but more importantly on research quality. The ability of UK/Irish academics to publish consistently in high quality journals will be essential to gaining promotions to associate professor and full professor, and this will also be true of other European countries and of countries worldwide that seek to more directly link research output to performance and rewards.

Disadvantages of such an intensive, omnipresent RAE-style national assessment model include the concern for the financial sustainability of research in some disciplines, inequitable workplace behaviours, administrative burden and costs and a need to fully recognise all aspects of excellence in research (RQF, 2005). Moreover, it simply may not achieve the stated aim of fundamentally improving research quality. Consideration should thus be given to the less expensive continental European models such as that used in Holland that allow for the assessment of research quality in a framework that is more economically structured (Ridgewell & Tower, 2005). Geuna and Martin (2003) also argue that there are strong advantages to the Dutch system. They feel it has a better cost-benefit ratio in that quality of research is assessed, therein enhancing research resource decisions whilst still keeping the costs to a minimum.

There are several future research possibilities arising from this research. Quantitative and/or qualitative research should be undertaken regarding the actual perceptions of academics to ascertain true incentives and impediments to conducting research. Further analysis could be pursued regarding the impetus to publish in the best journals, failure rates and how better education of the *publishing system*, especially in the higher ranked SSCI journals, could be achieved.

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Notes

[1] A university's research performance can be analysed in terms of inputs, outputs and outcomes. For instance the key input is external research income received whereas research publications such as journal articles and books are the key research outputs and, finally, the more difficult to measure is the less tangible research outcomes such as the improvement of a country's living standards (Ridgewell & Tower, 2005).

[2] This is reasonably consistent with Brown *et al.* (2007) who excluded 'book reviews, editorials, abstracts, unpublished conference and working papers' (p. 130) from their study.

[3] Joint publications were discounted for both authorship and university. For example, if a publication was by two authors they received 0.5 each and 0.5 per university or 1.0 in total if from the same university. This approach was also used in Brown *et al.* (2007).

[4] Beattie and Goodacre (2004) define UK and Irish 'new' universities as 'those created by the abolition of the binary divide together with a few degree-granting colleges' (p. 6). Gray and Helliar (1994) used a more meaningful description for 'new' as 'the old polytechnics and other non-polytechnic colleges which, nevertheless, offer degree or degree-equivalent courses in accounting and finance' (p. 251).