

A CITATION ANALYSIS OF RISK, INSURANCE, AND ACTUARIAL RESEARCH: 2001 THROUGH 2005

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ABSTRACT

The bibliographies of 17 *risk* journals were evaluated to determine the relative influence of these *risk* journals on risk, insurance, and actuarial research published during the years 2001 through 2005. Tables are provided that show the frequency with which each of these journals cites itself and the other sample journals. The journals are ranked, within two groups (risk and insurance group and actuarial group), based on their total influence (total citations including and excluding self-citations) and their per article influence (per article citations including and excluding self-citations). Finally, the most frequently cited articles from each *risk* journal are reported.

INTRODUCTION

Given the central importance of scholarly journals to the growth, development, and legitimacy of any academic discipline, it is critical that relevant parties understand the relative quality of journals within a discipline. Researchers need objective information on journal quality in making decisions regarding where to submit their work for possible publication. Those involved with making decisions regarding a faculty member's tenure, promotion, or merit pay need to understand relative journal quality in the faculty member's discipline in order to properly evaluate his or her research productivity. Since such decisions often involve scholars from disciplines other than that of the person being evaluated, objective analysis of journal quality can be invaluable in helping a faculty member document the quality of his or her publication outlets. Journal editors can also benefit from objective information regarding the quality of their journal relative to other journals in the field, potentially using this information to shape future editorial decisions. Finally, libraries and other institutions needing to make decisions about which journals to purchase in a particular discipline, given limited resources, also benefit from an understanding of relative journal quality. Ferguson, Dorfman, and Ferguson (2005) provide greater detail and

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discussion of issues such as these, as well as other theoretical and practical problems in determining scholarly journal quality.

Considering such potential import to numerous stakeholders, it is not surprising that studies in various academic disciplines have evaluated the quality of journals. Over the years, for example, numerous such studies have been published in the finance discipline (see Mabry and Sharplin, 1985; Alexander and Mabry, 1994; Zivney and Reichenstein, 1994; McNulty and Boekeloo, 1999; Borokhovich, Bricker, and Simkins, 2000; Chung, Cox, and Mitchell, 2001; Pinkowitz, 2002; Oltheten, Theoharakis, and Travlos, 2005). A number of journal quality studies have also been performed in the insurance field. Outreville and Malouin (1985) evaluate journal quality based on the opinions of American Risk and Insurance Association members. McNamara and Kolbe (1996) base their study on a survey of business school deans. Baur, Zivney, and Wells (1996) analyze journal subscription practices at universities. Hollman and Zietz (1998) analyze citations appearing in the *Journal of Insurance Issues (JII)*. Ferguson, Dorfman, and Ferguson (2005) survey risk and insurance academics to assess journal quality categorized by perceived utility and examined individual, institutional, and journal-related factors influencing expert opinion of journal quality.

Finally, Colquitt (1997, 2003) evaluates the impact that various insurance and actuarial journals and articles have had on research in the discipline by examining citations to leading insurance and actuarial journals found in a sample of insurance, actuarial, and finance journals. Colquitt (1997) analyzes citations during the period 1991 through 1995, while Colquitt (2003) analyzes citations appearing during the years 1996 through 2000. While citation analysis is common in other disciplines and generally considered to be the most comprehensive method of evaluating the quality of academic journals (see footnote 1 of Colquitt, 2003), the Colquitt studies are the only extensive citation analyses in the insurance and actuarial fields. Presumably, a major reason for this is that many insurance and actuarial journals are not indexed by the *Social Science Citation Index (SSCI)*, making data collection much more cumbersome.¹

The purpose of this article is to update the studies of Colquitt (1997, 2003) using citation data from the years 2001 through 2005. Periodic updates of citation studies are important because of the potential for changes in the relative quality of journals (as measured by citations) over time. In addition, the entrance of new journals in the discipline necessitates updated studies to evaluate the impact of these newer journals. For example, both the *Risk Management and Insurance Review (RMIR)* and the *North American Actuarial Journal (NAAJ)* commenced publication during the sample period of the Colquitt (2003) study. An updated study provides a more accurate picture of the relative impact of these journals now that they are more established. This study also includes the *Proceedings of the Casualty Actuarial Society (PCAS)*, which was not included in the previous study.

¹ Ferguson, Dorfman, and Ferguson (2005) provide a detailed discussion of the strengths and limitations of the SSCI with respect to risk and insurance research in particular, as well as citation studies in general.

METHODOLOGY AND DATA

As in Colquitt (2003), the analysis is focused on citations to articles published in 17 risk, insurance, and actuarial journals (hereafter, referred to as the *risk* journals) from these same journals during the years 2001 through 2005. As in the previous Colquitt studies, 16 finance journals also were reviewed for citation to the sample risk journals. The inclusion of citations from finance journals to *risk* journals seems warranted for purposes of completeness, given the close relationship of the disciplines; however, the impact is not very significant, and results would not likely change meaningfully with the inclusion of additional finance journals. In the 1997 and 2003 Colquitt studies, only 3.8 percent and 3.6 percent, respectively, of the citations to the *risk* journals were found in the finance journals. See the Appendix for a complete list of all journals included in the study.

Citation data were gathered by looking at the references listed in each article published during 2001 through 2005 in the 17 *risk* journals and recording information about all citations to the 17 *risk* journals. Citations to working papers were not included, even if the papers were subsequently published in a *risk* journal. Data gathered for each citation include the journal name, author name(s), journal edition, and page numbers of the cited article, as well as the journal name of the citing article. The data only include citations from feature articles, invited articles, shorter articles, and notes and communications regarding research. Opinion pieces and regular columns were not reviewed for citations.

As in Colquitt (2003), in recognition of the distinction between actuarial journals and other insurance-related journals, the 17 *risk* journals are further subcategorized as either risk and insurance journals or actuarial journals for purposes of journal rankings. The journals included in each category are listed in the Appendix.

The citations recorded are used to evaluate the impact that each sample journal has on the risk, insurance, and actuarial literature over the years 2001 through 2005. Each journal's influence is compared to the other journals in its subcategory. This influence is measured in the aggregate (i.e., total citations) and on a per article basis (i.e., citations per article published). Also, the data are used to determine which articles published in the sample journals have been the most influential between the years 2001 through 2005.

DISCUSSION OF RESULTS

Before proceeding with the detailed citation analysis, it is important to recognize that citation studies such as this do not primarily reflect the quality or impact of articles published during the sample period. In fact, although the sample period of this study is 2001 through 2005, almost 80 percent of the cited articles during this period were published prior to 2001, with just over 50 percent of all citations being to articles published between 1991 and 1997. Thus, the results of this study, while as up to date as possible, are unlikely to fully reflect very recent changes in the quality or impact of journals. The impact of this citation time lag phenomenon also is important in evaluating the impact of young journals, which are obviously at an inherent disadvantage in citation studies relative to their more established counterparts, regardless of quality.

Another interesting finding, when comparing this study with the previous two Colquitt studies, is the percentage of citations to articles published over 15 years prior to the latest sample year (i.e., citations to articles published before 1991 for this study). In the first and second Colquitt studies, the percentages of citations to articles 15 years prior to the latest sample year were 18.19 percent and 20.72 percent, respectively. In this study, 22.03 percent of the total citations are to articles published before 1991.

Journal Results

Table 1 and Table 2 contain a summary of all the citation data collected. Table 1 provides actual citation data and Table 2 provides this information on a normalized basis (per 1,000 citations).² For each of the *risk* journals, Table 1 provides the number of citations received by the journal during the 2001 through 2005 sample period from the journal itself, from the other 16 *risk* journals and from the sample finance journals.

The left-hand column of Table 1 lists each of the source journals. Then, across each row is the number of times the source journal cites each of the sample journals. So, for example, during the sample period, the *Astin Bulletin* (AB) cited itself 220 times, the *British Actuarial Journal* (BAJ) 25 times, the *Geneva Papers on Risk and Insurance Issues and Practice* (GPIP) twice, and so on. The far right-hand column indicates the total citations to any source found in the journal during the years 2001 through 2005, and the column just before that indicates how many cites there were during that time to sources other than the sample risk and insurance journals. The finance journals are combined into one entry labeled FIN.

Each row of Table 1, except for the row representing the finance journals, contains two highlighted citation numbers, indicating the two sample journals that are most frequently cited by the corresponding source journal. One clear finding, consistent with previous studies, is that the sample journals tend to have high rates of self-citation. In 11 out of 17 cases, the sample source journal cites itself more times than it cites any other sample journal. The journals that do not cite themselves with the greatest frequency are *Geneva Papers on Risk and Insurance Theory* (GPT), the *Journal of Actuarial Practice* (JAP), the *JII*, the *Journal of Insurance Regulation* (JIR), *RMIR*, and the *Scandinavian Actuarial Journal* (SAJ). Among these, the *JII*, the *JIR*, and *RMIR* all cited the *Journal of Risk and Insurance* (JRI) with the greatest frequency. Both the *JAP* and the *SAJ* cited *Insurance: Mathematics and Economics* (IME) with the greatest frequency, and *GPT* cited the *Journal of Risk and Uncertainty* (JRU) with the greatest frequency. The only journal that does not have itself as either the first or second most frequently cited journal is the *JAP*, which has *IME* and the *AB* as the two most frequently cited journals.

² The normalization process is designed to control for variation in the total number of citations that appear in each journal by providing a measure of relative frequency with which journals cite each other. For Table 2, we multiply each number in the body of Table 1 by the fraction 1,000/(Overall Total), where Overall Total can be found in the far right column of Table 1. This yields the number of citations from Journal X (left column) to Journal Y (top row) per 1,000 total cites appearing in Journal X.

TABLE 1
Journal Citation Patterns

Citations		Citations to the Sample Risk, Insurance, and Actuarial Journals															Total Outside the Sample		Overall Total	
From		AB	BAJ	BQ	CPCU	GPIP	GPT	IME	JAP	JFSP	JII	JIR	JRI	JRU	NAAJ	PCAS	RMIR	SAJ		Journals
AB	220	25	0	0	0	2	1	150	2	0	0	0	24	0	48	20	0	72	1,573	2,137
BAJ	38	294	0	0	0	0	0	67	4	0	0	0	7	3	25	8	0	15	1,681	2,142
BQ	0	0	30	0	0	0	0	0	0	1	0	0	6	1	5	0	0	0	1,183	1,226
CPCU	0	0	0	45	5	0	0	0	1	10	2	5	6	0	0	0	2	0	1,184	1,260
GPIP	2	4	0	3	115	15	2	0	0	0	1	16	46	17	5	0	1	1	4,203	4,431
GPT	3	0	0	0	1	31	10	0	0	0	0	1	24	33	1	2	0	5	872	983
IME	290	61	0	0	0	16	815	12	0	0	1	2	70	3	164	10	1	204	4,266	5,915
JAP	31	19	0	0	0	0	0	51	12	0	0	1	15	0	18	8	0	15	502	672
JFSP	0	0	6	0	0	0	0	0	0	51	3	5	6	2	0	0	1	0	895	969
JII	2	0	2	0	2	0	0	7	0	1	20	13	109	4	3	2	2	0	933	1,100
JIR	0	3	0	13	8	0	2	0	0	1	4	98	134	5	0	3	6	0	1,402	1,679
JRI	26	10	3	2	13	35	75	75	5	5	13	46	407	52	28	5	10	22	3,405	4,162
JRU	0	0	0	0	2	10	0	0	0	0	1	1	19	448	0	0	0	2	3,738	4,221
NAAJ	117	61	3	0	1	4	249	2	1	1	1	3	69	1	269	33	1	77	3,228	4,120
PCAS	18	14	0	3	0	2	8	0	0	0	2	10	23	0	4	86	0	7	299	476
RMIR	2	0	2	1	12	5	4	4	0	3	4	11	136	16	11	1	17	4	1,117	1,346
SAJ	123	34	0	0	0	8	221	3	0	0	0	0	14	0	49	7	0	162	1,308	1,929
FIN	3	3	1	4	4	8	8	8	0	2	4	10	107	46	4	0	1	0		
Total	875	528	47	71	165	135	1,669	41	75	56	222	1,222	631	634	185	42	586			
Self-citation rate	0.1029	0.1373	0.0245	0.0357	0.0260	0.0315	0.1378	0.0179	0.0526	0.0182	0.0584	0.0978	0.1061	0.0653	0.1807	0.0126	0.0840			

Notes: AB = *Astin Bulletin*; BAJ = *British Actuarial Journal*; BQ = *Benefits Quarterly*; CPCU = *CPCU Journal*; FIN = *sample finance journals*; GPIP = *Geneva Papers on Risk and Insurance Issues and Practice*; GPT = *Geneva Papers on Risk and Insurance Theory*; IME = *Insurance: Mathematics and Economics*; JAP = *Journal of Actuarial Practice*; JFSP = *Journal of Financial Services Professionals*; JII = *Journal of Insurance Issues*; JIR = *Journal of Insurance Regulation*; JRI = *Journal of Risk and Insurance*; JRU = *Journal of Risk and Uncertainty*; NAAJ = *North American Actuarial Journal*; PCAS = *Proceedings of the Casualty Actuarial Society*; RMIR = *Risk Management and Insurance Review*; SAJ = *Scandinavian Actuarial Journal*; Total Outside the Sample Journals = the number of citations in the journal that are to articles not published in one of the 17 sample risk, insurance, or actuarial journals; self-citation rate = the percentage of a journal's citations attributable to its own articles. Citations to the *Geneva Papers* prior to 1990 (the year that the *Geneva Papers* were split into two journals, the *GPIP* and the *GPT*) are attributed to the *GPIP* and the *GPT* in the proportion that the *GPIP* and the *GPT* received their own citations from that journal during 1990 and beyond.

TABLE 2
Normalized Journal Citations

Citations From	Normalized Citations (per Thousand) to the Sample Risk, Insurance and Actuarial Journals																Total Outside the Sample Journals	Overall Total	
	AB	BAJ	BQ	CPCU	GPPI	GPT	IME	JAP	JFSP	JII	JIR	JRI	JRU	NAAJ	PCAS	RMIR			SAJ
AB	103	12	0	0	1	0	70	1	0	0	0	11	0	22	9	0	34	736	1,000
BAJ	18	138	0	0	0	0	32	2	0	0	0	3	1	12	4	0	7	783	1,000
BQ	0	0	24	0	0	0	0	0	1	0	0	5	1	4	0	0	0	965	1,000
CPCU	0	0	0	36	4	0	0	1	8	2	4	5	0	0	0	2	0	940	1,000
GPPI	0	1	0	1	26	3	0	0	0	0	4	10	4	1	0	0	0	949	1,000
GPT	3	0	0	0	1	32	10	0	0	0	1	24	34	1	2	0	5	887	1,000
IME	49	10	0	0	0	3	138	2	0	0	0	12	1	28	2	0	34	721	1,000
JAP	46	28	0	0	0	0	76	18	0	0	1	22	0	27	12	0	22	747	1,000
JFSP	0	0	6	0	0	0	0	0	53	3	5	6	2	0	0	1	0	924	1,000
JII	2	0	2	0	2	0	6	0	1	18	12	99	4	3	2	2	0	848	1,000
JIR	0	2	0	8	5	0	1	0	1	2	58	80	3	0	2	4	0	835	1,000
JRI	6	2	1	0	3	8	18	1	1	3	11	98	12	7	1	2	5	818	1,000
JRU	0	0	0	0	0	2	0	0	0	0	0	5	106	0	0	0	0	886	1,000
NAAJ	28	15	1	0	0	1	60	0	0	0	1	17	0	65	8	0	19	783	1,000
PCAS	38	29	0	6	0	4	17	0	0	4	21	48	0	8	181	0	15	628	1,000
RMIR	1	0	1	1	9	4	3	0	2	3	8	101	12	8	1	13	3	830	1,000
SAJ	64	18	0	0	0	4	115	2	0	0	0	7	0	25	4	0	84	678	1,000
Avg. over journals	21.06	15.00	2.06	3.06	3.00	3.59	32.12	1.59	3.94	2.06	7.41	32.53	10.59	12.41	13.41	1.41	13.41		
Avg. with no self-citations	15.94	7.31	0.69	1.00	1.56	1.81	25.50	0.56	0.88	1.06	4.25	28.44	4.63	9.13	2.94	0.69	9.00		
Self-citation index	0.65	1.88	3.55	3.57	1.67	1.74	0.54	3.20	5.97	1.72	1.37	0.34	2.29	0.72	6.15	1.83	0.93		

Notes: AB = *Astin Bulletin*; BAJ = *British Actuarial Journal*; BQ = *Benefits Quarterly*; CPCU = *CPCU Journal*; GPPI = *Geneva Papers on Risk and Insurance Issues and Practice*; GPT = *Geneva Papers on Risk and Insurance Theory*; IME = *Insurance: Mathematics and Economics*; JAP = *Journal of Actuarial Practice*; JFSP = *Journal of Financial Services Professionals*; JII = *Journal of Insurance Issues*; JIR = *Journal of Insurance Regulation*; JRI = *Journal of Risk and Insurance*; JRU = *Journal of Risk and Uncertainty*; NAAJ = *North American Actuarial Journal*; PCAS = *Proceedings of the Casualty Actuarial Society*; RMIR = *Risk Management and Insurance Review*; SAJ = *Scandinavian Actuarial Journal*; Total Outside the Sample Journals = the number of citations in the journal that are to articles not published in one of the 17 sample risk, insurance, or actuarial journals; self-citation index = the self-citation rate $\times 100$ /normalized average citation rate excluding self-citations (per thousand citations). Totals may not add due to rounding.

The results of Table 1 also reinforce the logic of separating the *risk* journals into the subcategories of risk and insurance journals and actuarial journals. For all but one risk and insurance (actuarial) source journal, the top three most cited sample journals are also in the risk and insurance (actuarial) subcategory. The only journal for which this is not true is *Benefits Quarterly (BQ)* (a risk and insurance journal), which has the *NAAJ* (an actuarial journal) as its third most frequently cited journal. Overall, of the 2,479 total nonfinance citations to the risk and insurance journals, 88.22 percent are from risk and insurance journals, while only 11.78 percent are from the actuarial journals. Similarly, of the 4,500 nonfinance citations to the actuarial journals, 94.27 percent are from actuarial journals and only 5.73 percent are from risk and insurance journals. It is also clear that finance journals are much more likely to cite the risk and insurance journals than the actuarial journals. Of the total finance journal cites to the *risk* journals, 91.71 percent are to journals in the risk and insurance subcategory.

Table 1 provides clear evidence that the *JRI* continues to be the most influential journal among the risk and insurance journals. The *JRI* was either the most frequently cited or second most frequently cited sample journal by eight of the 10 risk and insurance journals. Only the *CPCU Journal (CPCU)* and *GPT* cited two other journals with greater frequency than the *JRI*. The *JRI* also was the most frequently cited risk and insurance journal by each of the seven sample actuarial journals. Also, as was the case in the two previous Colquitt studies, the *JRI* was the only journal to have been cited at least once by each of the 17 sample journals.

Consistent with the most recent Colquitt (2003) study, *IME* is the most frequently cited of all of the actuarial journals. As in the previous study, *IME* was either the first or second most frequently cited journal by all of the sample actuarial journals. The only other journal to be either the first or second most frequently cited actuarial journal more than once is the *AB*, which in three cases was either the first or second most frequently cited actuarial journal (by the *AB*, *IME*, and the *JAP*).

Table 1 and Table 2 also provide each journal's self-citation rate and self-citation index, respectively.³ The higher the self-citation index, the higher a journal's frequency of self-citations as compared to the frequency with which it was cited by the other sample journals. Presumably, a more influential journal will have a lower self-citation index. As noted in Colquitt (2003), it is entirely possible that the cause for a high self-citation index might be that the journal publishes research that is of a specialized nature, the type not commonly found in the other sample journals. For example, while the *JRU* has a reputation as being an outstanding journal, over 70 percent of the citations to the *JRU* found in the sample journals were *JRU* self-citations.⁴ The high relative frequency of self-citations resulted in a self-citation index of 2.29 (seventh out

³ The self-citation rates and indices were calculated as in the previous two Colquitt studies (1997, 2003). The self-citation rate is the number of self-citations from a journal divided by the total number of citations found in that journal. The self-citation index is the self-citation rate $\times 100$ /normalized average citation rate excluding self-citations (per thousand citations).

⁴ It should be emphasized again that this study is only looking at citations from the 17 sample risk journals and a collection of other finance journals. The *JRU*, in particular, receives a large number of citations from journals outside the insurance and actuarial fields. For example, according to the ISI Web of Knowledge Journal Citation Reports website, the five journals that

of 10 risk and insurance journals). The strong reputation that the *JRU* enjoys is due primarily to its influence on research published in the *JRU* and other journals not considered to be in the risk and insurance discipline.

As seen in Table 2, the *JRI*'s self-citation index of .34 is by far the lowest among the risk and insurance group. The other risk and insurance journals with self-citation indices lower than 2 are the *JIR* (1.37), the *GPIP* (1.67), the *JII* (1.72), the *GPT* (1.74), and *RMIR* (1.83). Not surprisingly, the three highest self-citation indices in the risk and insurance group were *BQ* (3.55), the *CPCU* (3.57), and the *Journal of Financial Services Professionals (JFSP)* (5.97); the research published in these journals is more narrowly focused on issues related to employee benefits, property-casualty insurance, and financial planning, respectively. As was the case in the previous study, *IME*'s self-citation index of .54 is the lowest among all of the actuarial journals. However, actuarial journals with self-citations indices below 2 include the *AB* (.65), the *NAAJ* (.72), the *SAJ* (.93), and the *BAJ* (1.88).

Table 3 provides a different perspective on the data. It separates the sample journals into the two subcategories of risk and insurance journals and actuarial journals, and ranks journals within each subgroup by the total number of citations from all journals in the study. In addition to the rankings based on absolute numbers of citations received, an adjusted rank is also provided, which is based on the number of non-self-citations received. Among the risk and insurance journals, the *JRI* is the most frequently cited journal, with 1,222 total citations and 815 non-self-citations. The total number of citations was almost twice that of the *JRU*'s 631 total citations and its number of non-self-citations was almost five times that of the *JRU*'s. Below the *JRI* and *JRU* on the list of total citations are the *JIR* (222), the *GPIP* (165), the *GPT* (135), the *JFSP* (75), the *CPCU* (71), the *JII* (56), *BQ* (47), and *RMIR* (42). This list is similar to the previous Colquitt (2003) study, with the exception of the shuffling of spots between the *CPCU*, the *GPT*, and the *JFSP*. When looking only at non-self-citations, the *JRI* and the *JRU* were followed by the *JIR* (124), the *GPT* (104), the *GPIP* (50), the *JII* (36), the *CPCU* (26), *RMIR* (25), the *JFSP* (24), and *BQ* (17).

Among the actuarial journals, *IME* was the most frequently cited journal in the group. The 1,669 *IME* citations are approximately twice the number of the next journal, the *AB*, with 875 citations. Following *IME* and the *AB* are the *NAAJ* (634), the *SAJ* (586), the *BAJ* (528), the *PCAS* (185), and the *JAP* (41). In addition, *IME* also has approximately twice the number of citations than it did in the most recent Colquitt (2003) study (840) and over four-and-a-half times as many as in the first Colquitt (1997) study (360). Interestingly, all of the actuarial journals had a significant increase in total citations from the previous study, with the lowest percentage increase being over 30 percent. Finally, when looking at non-self-citations only, the list remains almost exactly the same as that of the total citations, with the exception of the *NAAJ* and the *SAJ* swapping places.

cited the *JRU* most frequently in 2004, aside from the *JRU* itself, were *Organizational Behavior and Human Decision Processes*, *Journal of Economic Psychology*, *Journal of Transport Economics and Policy*, *Vanderbilt Law Review*, and *Journal of Mathematical Psychology*. Since the aim of this study is to focus on citations from the journals most relevant to insurance and actuarial research, citations from journals in fields other than insurance, actuarial science, or finance are not included.

TABLE 3

Journals Ranked by Total Number of Citations by the Sample Journals During the Years 2001 through 2005

Rank	Risk and Insurance Journals	Total Citations	Self-Citations	Non-Self-Citations	Adj Rank ^a
1	<i>Journal of Risk and Insurance</i>	1222	407	815	1
2	<i>Journal of Risk and Uncertainty</i>	631	448	183	2
3	<i>Journal of Insurance Regulation</i>	222	98	124	3
4	<i>Geneva Papers on Risk and Insurance Issues and Practice</i>	165	115	50	5
5	<i>Geneva Papers on Risk and Insurance Theory</i>	135	31	104	4
6	<i>Journal of Financial Services Professionals</i>	75	51	24	9
7	<i>CPCU Journal</i>	71	45	26	7
8	<i>Journal of Insurance Issues</i>	56	20	36	6
9	<i>Benefits Quarterly</i>	47	30	17	10
10	<i>Risk Management and Insurance Review</i>	42	17	25	8

Rank	Actuarial Journals	Total Citations	Self-Citations	Non-Self-Citations	Adj Rank ^a
1	<i>Insurance: Mathematics and Economics</i>	1669	815	854	1
2	<i>Astin Bulletin</i>	875	220	655	2
3	<i>North American Actuarial Journal</i>	634	269	365	4
4	<i>Scandinavian Actuarial Journal</i>	586	162	424	3
5	<i>British Actuarial Journal</i>	528	294	234	5
6	<i>Proceedings of the Casualty Actuarial Society</i>	185	86	99	6
7	<i>Journal of Actuarial Practice</i>	41	12	29	7

^aRanking based upon total number of non-self-citations. The rankings do not control for journal age, putting younger journals at a disadvantage. For example, about 45 percent of the total citations in the study are to articles published prior to 1997, when *RMIR* and the *NAAJ* did not even exist.

Perhaps the most remarkable finding regarding the actuarial journal ranking is the rather quick rise in the influence of the *NAAJ*. The *NAAJ* was only 8 years old in 2005 (the last year of data collection) and yet it is already the third most frequently cited (out of seven) actuarial journal in the sample. This phenomenon also was noted in the Ferguson, Dorfman, and Ferguson (2005) survey, as the *NAAJ* was determined to be a *primary* ("frequently useful") journal on a write-in basis. Also, just over 45 percent of all citations recorded are to articles published before the *NAAJ* began in 1997. As a result, in future years, the *NAAJ*'s measured influence will likely increase. In addition, the *NAAJ*'s third-place ranking is two spots higher than the last Colquitt (2003) study, passing both the *SAJ* and the *BAJ* in the process. Finally, the increase in total citations for the *NAAJ* was over 450 percent of what it was in the previous study (from 137 total citations to 634), which is explained largely by the fact that the *NAAJ* commenced publication 1 year into the previous study's sample period.

The rankings in Table 3 give every citation to a sample journal equal weight, regardless of the source journal. For example, a citation from the *JRI* is given equal weight to a citation from the *CPCU*. Depending on their purpose and perspective, readers

may desire to apply different weights to citations from different source journals. For example, if an institution values citations from practitioner-oriented journals only half as much as citations from academic journals, such weighting could be applied to the detailed citation data provided in Table 2 to produce new rankings.

As noted in the previous studies, the total citation count measures the overall impact of a journal's research, but it does not take into account the number of articles published by each journal. Obviously, a journal that publishes more articles would have more opportunity to be cited than a journal with fewer articles published. So, while one journal may be more influential overall than another, its influence on a per article basis is not known without controlling in some way for the number of articles published by the journal. Table 4 measures the relative impact of the articles in each

TABLE 4

Relative Impact of Risk, Insurance, and Actuarial Journals (Insurance Impact Factor—Period 1996–2005)

	All Citations		No Self-Citations	
	Insurance Impact Factor	Rank	Adj Insurance Impact Factor	Adj Rank
Risk and Insurance Journals				
<i>Journal of Risk and Insurance</i>	1.9564	1	1.4116	1
<i>Journal of Risk and Uncertainty</i>	1.1328	2	0.3173	5
<i>Journal of Insurance Regulation</i>	0.7914	3	0.3554	3
<i>Geneva Papers on Risk and Insurance Theory</i>	0.6250	4	0.4423	2
<i>Journal of Insurance Issues</i>	0.5111	5	0.3333	4
<i>Geneva Papers on Risk and Insurance Issues and Practice</i>	0.3243	6	0.0885	7
<i>Risk Management and Insurance Review</i>	0.3118	7	0.1514	6
<i>CPCU Journal</i>	0.2463	8	0.0844	8
<i>Journal of Financial Services Professionals</i>	0.1779	9	0.0460	9
<i>Benefits Quarterly</i>	0.1288	10	0.0397	10
	All Citations		No Self-Citations	
	Insurance Impact Factor	Rank	Adj Insurance Impact Factor	Adj Rank
Actuarial Journals				
<i>Insurance: Mathematics and Economics</i>	2.6102	1	1.5790	1
<i>North American Actuarial Journal</i>	2.3643	2	1.3643	3
<i>Astin Bulletin</i>	2.0526	3	1.5052	2
<i>Scandinavian Actuarial Journal</i>	1.6275	4	1.1373	4
<i>British Actuarial Journal</i>	1.1107	5	0.3852	6
<i>Proceedings of the Casualty Actuarial Society</i>	0.8351	6	0.4639	5
<i>Journal of Actuarial Practice</i>	0.3864	7	0.2614	7

Notes: Impact Factor = citations to a journal's = articles published in a certain period divided by the number of citable articles published during the same period; Adj Insurance Impact Factor = the insurance impact factor calculated using only the non-self-citations. The period used is 1996 through 2005.

of the sample journals by measuring each journal's insurance impact factor (IIF) and adjusted insurance impact factor (AIIF).⁵ Both the IIF and the AIIF were calculated as in the previous two Colquitt (1997, 2003) studies.⁶ Essentially, the IIF measures the average number of citations to an article published in the journal during the last 10 years.⁷ Given that only the influence of articles published in the most recent 10-year period are evaluated, these measures also remove much of the disadvantage that newer journals might experience when looking at total citation counts.

As was the case with the risk and insurance journals in the first two studies, the *JRI* and the *JRU* were the first and second most influential journals on a per article basis, with IIFs of 1.9564 and 1.1328, respectively. This means that the average *JRI* (*JRU*) article published during the years 1996 through 2005 is cited 1.9564 (1.1328) times by the sample journals during the period 2001 through 2005. Following these two journals are the *JIR* (.7914), the *GPT* (.6250), the *JII* (.5111), the *GPIP* (.3243), *RMIR* (.3118), the *CPCU* (.2463), the *JFSP* (.1779), and *BQ* (.1288). As for the AIIF, the risk and insurance journal rankings are much like what they were in the previous Colquitt (2003) study, with no journal changing more than one position. The *JRU* and the *CPCU* both drop one spot and the *GPIP* and the *JII* climb one spot from the previous study to the current one. The most dramatic difference between one journal's IIF and AIIF is with the *JRU*. When removing the self-citations, the *JRU* falls from its second place ranking in per article influence among the risk and insurance journals to fifth place.

Table 4 shows a considerably higher number of average citations per article for the actuarial group of journals. The actuarial journal with the highest IIF is *IME* (2.6102), followed by the *NAAJ* (2.3643), the *AB* (2.0526), the *SAJ* (1.6275), the *BAJ* (1.1107), the *PCAS* (.8351), and the *JAP* (.3864). When looking at the per article impact using only non-self-citations, the order changes somewhat, with *IME* (1.5790) still leading the list, followed by the *AB* (1.5052), the *NAAJ* (1.3643), the *SAJ* (1.1373), the *PCAS* (.4639), the *BAJ* (.3852), and the *JAP* (.2614). The top three actuarial journals (*IME*, the *NAAJ*, and the *AB*) all had higher IIFs and AIIFs than did the highest risk and insurance journal (the *JRI*). This result is noticeably different than what was found in the previous Colquitt (2003) study, when the *JRI*'s IIF led all journals of both groups by a considerable distance. The other significant difference in the current study and the previous Colquitt (2003) study is the increase in the IIFs and AIIFs of both *IME* and the *NAAJ*. The increases in the IIF of *IME* and the *NAAJ* from the previous study

⁵ The IIF equals citations to a journal's articles published in a certain period divided by the number of citable articles during the same period. The period used for all of the journals was 1996 through 2005. The AIIF is the IIF calculated excluding self-citations.

⁶ At the suggestion of a referee, we also calculated the IIF using the period of 2001–2005. Results were not dramatically different from those reported in Table 4. For the risk and insurance journals, rankings 1–3 and 8–10 remain unchanged. In the middle range, the *GPT* and *GPIP* move down from numbers 4 and 6 to 6 and 7, respectively.

⁷ At the suggestion of an anonymous referee, we also looked at the median number of citations per article for all sample journals. Every journal in the sample has a median number of citations per article of either zero or one. For the risk and insurance journals, the *JRI* and the *JRU* have median citations per article of one, while the others all have medians of zero. All the actuarial journals have median citations per article of one except for the *JAP* and the *PCAS*, which have medians of zero.

TABLE 5

Risk and Insurance Journal Ranking Comparisons Over Time

Journal/ Study	Total Citations			Total Non-Self-Citations			Insurance Impact Factor			Adjusted Insurance Impact Factor		
	1997	2003	Current	1997	2003	Current	1997	2003	Current	1997	2003	Current
<i>JRI</i>	1	1	1	1	1	1	2	1	1	1	1	1
<i>JRU</i>	2	2	2	5	3	2	1	2	2	2	4	5
<i>JIR</i>	4	3	3	4	2	3	4	4	3	3	3	3
<i>GPIP</i> ^a	3	4	4	3	6	5	3	8	6	5	8	7
<i>GPT</i> ^a	3	6	5	3	4	4	3	3	4	5	2	2
<i>JFSP</i>	6	7	6	7	8	9	7	9	9	7	9	9
<i>CPCU</i>	5	5	7	2	5	7	6	6	8	4	7	8
<i>JII</i>	7	8	8	6	7	6	5	5	5	6	5	4
<i>BQ</i>	8	9	9	8	9	10	8	10	10	8	10	10
<i>RMIR</i> ^b	n/a	10	10	n/a	10	8	n/a	7	7	n/a	6	6

Notes: BQ = Benefits Quarterly; CPCU = Chartered Property Casualty Underwriter; GPIP = Geneva Papers on Risk and Insurance Issues and Practice; GPT = Geneva Papers on Risk and Insurance Theory; JFSP = Journal of Financial Services Professionals; JII = Journal of Insurance Issues; JIR = Journal of Insurance Regulation; JRI = Journal of Risk and Insurance; JRU = Journal of Risk and Uncertainty; RMIR = Risk Management and Insurance Review.

^aIn the Colquitt (1997) study, the GPIP and the GPT were one journal.

^bRMIR was established in 1997.

to the current one are 63 percent and 117 percent, respectively. Also, *IME*'s and the *NAAJ*'s AIIF increased by 121 percent and 91 percent, respectively.

Tables 5 and 6 provide comparisons between this study and the previous two Colquitt studies (1997, 2003) for the risk and insurance and actuarial groups in the areas of total citations, total non-self-citations, IIFs, and AIIFs. Among the risk and insurance journals, the most consistent pattern is found with the *JRI*. With the exception of the IIF in the 1997 study, the *JRI* was atop the rankings in every category for each of the three studies. Among the actuarial journals, the top three have remained fairly consistent, with *IME* and the *AB* being the highest ranking journals for most categories in each of the three studies and the *NAAJ* being the in the top three in most categories for this and the 2003 studies.

Article Results

Tables 7 through 10 provide information on the specific risk and insurance and actuarial articles most frequently cited by the sample journals. As was noted in Colquitt (1997), such information is useful to (1) researchers, who are interested in knowing the subjects, methodology, style, etc. that have been used in research deemed to be the most influential in recent years; (2) editors, who are making assessments on the research submitted for publication in their journals; and (3) those responsible for creating reading lists of the most influential research for their graduate-level seminars in risk and insurance and actuarial programs.

TABLE 6

Actuarial Journal Ranking Comparisons Over Time

Journal/ Study	Total Citations			Total Non-Self-Citations			Insurance Impact Factor			Adjusted Insurance Impact Factor		
	1997	2003	Current	1997	2003	Current	1997	2003	Current	1997	2003	Current
<i>IME</i>	2	1	1	3	2	1	4	2	1	3	4	1
<i>AB</i>	1	2	2	1	1	2	1	1	3	1	1	2
<i>NAAJ</i> ^a	n/a	5	3	n/a	5	4	n/a	5	2	n/a	3	3
<i>SAJ</i>	3	3	4	2	3	3	2	3	4	2	2	4
<i>BAJ</i>	4	4	5	4	4	5	3	4	5	4	5	6
<i>PCAS</i> ^b	n/a	n/a	6	n/a	n/a	6	n/a	n/a	6	n/a	n/a	5
<i>JAP</i> ^c	n/a	6	7	n/a	6	7	n/a	6	7	n/a	6	7

Notes: *AB* = *Astin Bulletin*; *BAJ* = *British Actuarial Journal*; *IME* = *Insurance: Mathematics and Economics*; *JAP* = *Journal of Actuarial Practice*; *NAAJ* = *North American Actuarial Journal*; *PCAS* = *Proceedings of the Casualty Actuarial Society*; *SAJ* = *Scandinavian Actuarial Journal*.

^aThe *NAAJ* was established in 1997 and, therefore, was not included in the first Colquitt (1997) study.

^bThe *PCAS* was not included in the previous two Colquitt (1997, 2003) studies.

^cThe *JAP* was not included in the first Colquitt (1997) study.

As was done in the previous Colquitt studies, we should highlight a point regarding an important limitation of a study conducted using these data. While this study accurately identifies many of the most influential risk and insurance and actuarial articles, it is possible that there are other highly influential risk and insurance and actuarial articles that were not published in any of the sample journals. For example, a risk and insurance article published in a highly regarded finance or business journal would not be identified in our study. So, while the tables provided do identify many of the risk and insurance and actuarial articles that have been the most influential in recent years, it will not constitute a comprehensive list of the most influential articles published.

Table 7 shows the list of the most frequently cited *JRI* articles published in each year from 1990 through 2003.⁸ The most frequently cited articles are generally found between the years 1996 and 2000, with the exception being the frequently cited Mayers and Smith article published in 1994. A similar table was produced in both of the previous Colquitt (1997, 2003) studies. In these tables, there are 9 years that overlap between the first and second Colquitt studies and also the second Colquitt and the current study. Between the first and second Colquitt studies, there were 3 years (out of 9) where the same article was the most frequently cited for its year by both sample periods. However, between the second Colquitt and this study, there was only one article (out of nine) that was the most frequently cited for its year by both sample periods. The article that was the most frequently cited for its year in both the second Colquitt study and current study is Browne and Kim's 1993 article, "An International Analysis of Life Insurance Demand." The fact that so few articles are the

⁸ No articles published in the *JRI* during the years 2004 and 2005 were cited by the sample journals more than twice.

TABLE 7

The *Journal of Risk and Insurance* Articles Published During Each Year, 1990 Through 2003, Which Are the Most Frequently Cited by the Sample Journals During the Years 2001 Through 2005

Year	Author(s)	Pages	Title	Citations
2003	Bacinello	461–487	Fair valuation of a guaranteed life insurance participating contract embedding a surrender option	4
2002	Grosen and Jorgensen	63–91	Life insurance liabilities at market value: An analysis of insolvency risk, bonus policy, and regulatory intervention rules in a barrier option framework	8
2001	Myers and Read	545–580	Capital allocation for insurance companies	8
2000	Wang	15–36	A class of distortion operators for pricing financial and insurance risks	12
1999	Cummins, Grace, and Phillips	417–458	Regulatory solvency prediction in property-liability insurance: Risk-based capital, audit ratios, and cash flow simulation	14
1998	Brockett, Xia, and Derrig	245–274	Using Kohonen's self-organizing feature map to uncover automobile bodily injury claims fraud	10
	Phillips, Cummins, and Allen	597–636	Financial pricing of insurance in the multiple-line insurance company	10
1997	Grosen and Jorgensen	481–503	Valuation of early exercisable interest rate guarantees	16
1996	Frees, Carriere, and Valdez	229–261	Annuity valuation with dependent mortality	10
1995	Derrig and Ostaszewski	447–482	Fuzzy techniques of pattern recognition in risk and claim classification	9
1994	Mayers and Smith	638–655	Managerial discretion, regulation, and stock insurer ownership structure	13
1993	Browne and Kim ^a	616–634	An international analysis of life insurance demand	9
1992	McNamara and Rhee	221–238	Ownership structure and performance: The demutualization of life insurers	7
1991	Cummins	261–302	Statistical and financial models of insurance pricing and the insurance firm	8
1990	Truett and Truett	321–328	The demand for life insurance in Mexico and the United States: A comparative study	6
	Outreville	487–498	The economic significance of insurance markets in developing countries	6

Note: No article published in the *JRI* during the years 2004 or 2005 was cited more than twice.

^aThis article also was among the most cited in the previous study conducted using citations from the sample journals during the years 1996–2000.

TABLE 8

The *Journal of Risk and Insurance* Articles Most Frequently Cited by the Sample Journals During the Years 2001 Through 2005, Regardless of the Year Published

Rank	Author(s)	Year/ Volume	Pages	Title	Citations
T1 ^a	Grosen and Jorgensen	1997/64	481–503	Valuation of early exercisable interest rate guarantees	16
T1	Boyle and Schwartz	1977/44	639–680	Equilibrium prices of guarantees under equity-linked contracts: Two approaches	16
3	Jaffee and Russell	1997/64	205–230	Catastrophe insurance, capital markets, and uninsurable risks	14
T4	Briys and de Varenne	1997/64	673–694	On the risk of insurance liabilities: Debunking some common pitfalls	13
T4	Mayers and Smith ^b	1994/61	638–655	Managerial discretion, regulation, and stock insurer ownership structure	13
T6	Wang	2000/67	15–36	A class of distortion operators for pricing financial and insurance risks	12
T6	Santomero and Babbal	1997/64	231–270	Financial risk management by insurers: An analysis of the process	12
T8	Brockett, Xia, and Derrig	1998/65	245–274	Using Kohonen's self-organizing feature map to uncover automobile bodily injury claims fraud	10
T8	Phillips, Cummins, and Allen	1998/65	597–636	Financial pricing of insurance in the multiple-line insurance company	10
T8	Persson and Aase	1997/64	599–617	Valuation of the minimum guaranteed return embedded in life insurance products	10
T8	Frees, Carriere, and Valdez	1996/63	229–261	Annuity valuation with dependent mortality	10
T12	Seven others papers				9

^aT represents a tie for this rank.

^bThis article also was among the most cited in the previous study conducted using citations from the sample journals during the years 1996–2000.

most frequently cited for their year among the three studies speaks to the considerable change that takes place in research focus in a time period of only 5 years. Interestingly, several authors (Cummins, Derrig, Grosen, Jorgensen, and Phillips) were represented multiple times on the list.

TABLE 9

The Article From Each Risk and Insurance and Actuarial Journal That Is the Most Frequently Cited by the Sample Journals During the Years 2001 Through 2005

Journal	Author(s)	Year/ Pages	Title	Citations
<i>Astin Bulletin</i>	Wang	1996/ 71–92	Premium calculation by transforming the layer premium density	26
<i>British Actuarial Journal</i> ^a	Wilkie	1995/ 777–964	More on a stochastic asset model for actuarial use	28
<i>Geneva Papers on Risk and Insurance Issues and Practice</i>	Belhadji, Dionne, and Tarkhani	2000/ 517–539	A model for the detection of insurance fraud	4
<i>Geneva Papers on Risk and Insurance Theory</i>	Jensen, Jorgensen, and Grosen	2001/ 57–84	A finite difference approach to the valuation of path-dependent life insurance liabilities	8
<i>Insurance: Mathematics and Economics</i>	Dhaene, Denuit, Goovaerts, Kaas, and Vyncke	2002/ 3–33	The concept of comonotonicity in actuarial science and finance: Theory	29
<i>Journal of Actuarial Practice</i>	Chang	2000/ 5–42	Realistic pension funding: A stochastic approach	6
<i>Journal of Insurance Regulation</i>	Weisberg and Derrig	1991/ 497–541	Fraud and automobile insurance: A report on the baseline study of bodily injury claims in Massachusetts	9
<i>Journal of Risk and Insurance</i>	Grosen and Jorgensen	1997/ 481–503	Valuation of early exercisable interest rate guarantees	16
	Boyle and Schwartz	1977/ 639–680	Equilibrium prices of guarantees under equity-linked contracts: Two approaches	16
<i>Journal of Risk and Uncertainty</i> ^a	Tversky and Kahneman	1992/ 297–323	Advances in prospect theory: Cumulative representation of uncertainty	49
<i>North American Actuarial Journal</i> ^a	Gerber and Shiu	1998/ 48–72	On the time value of ruin	47
<i>Proceedings of the Casualty Actuarial Society</i>	Wang	1998/ 848–939	Aggregation of correlated risk portfolios: Models and algorithms	10
<i>Risk Management and Insurance Review</i>	Colquitt, Hoyt, and Lee	1999/ 43–61	Integrated risk management and the role of the risk manager	4
<i>Scandinavian Actuarial Journal</i>	Aase and Persson	1994/ 26–52	Pricing of unit-linked life insurance policies	16

Note: The most frequently cited article from *BQ*, the *CPCU*, the *JFSP*, and the *JII* are not listed because there were multiple articles among these that received no more than three citations each.

^aThese articles also were among the most cited in the previous study conducted using citations from the sample journals during the years 1996–2000.

TABLE 10

The Most Frequently Cited Articles Published in Any of the Actuarial Journals

Rank	Author(s)	Journal/ Year	Pages	Title	Citations
1	Gerber and Shiu	<i>NAAJ</i> /98	48–72	On the time value of ruin	47
2	Dhaene, Denuit, Goovaerts, Kaas, and Vyncke	<i>IME</i> /02	3–33	The concept of comonotonicity in actuarial science and finance: Theory	29
3	Wilkie	<i>BAJ</i> /95	777–964	More on a stochastic asset model for actuarial use	28
4	Wang	<i>AB</i> /96	71–92	Premium calculation by transforming the layer premium density	26
T5	Dhaene, Denuit, Goovaerts, Kaas, and Vyncke	<i>IME</i> /02	133–161	The concept of comonotonicity in actuarial science and finance: Applications	24
T5	Gerber, Goovaerts, and Kaas	<i>AB</i> /87	151–162	On the probability and severity of ruin	24
T7	Dickson and Hipp	<i>IME</i> /01	333–344	On the time to ruin for Erlang(2) risk processes	23
T7	Wang, Young, and Panjer	<i>IME</i> /97	173–183	Axiomatic characterization of insurance prices	23
T7	Gerber and Shiu	<i>IME</i> /97	129–137	The joint distribution of the time of ruin, the surplus immediately before ruin, and the deficit at ruin	23
T7	Panjer ^a	<i>AB</i> /81	22–26	Recursive evaluation of a family of compound distribution	23
11	Grosen and Jorgensen	<i>IME</i> /00	37–57	Fair valuation of life insurance liabilities: The impact of interest rate guarantees, surrender options, and bonus policies	22

Notes: *AB* = *Astin Bulletin*; *BAJ* = *British Actuarial Journal*; *IME* = *Insurance: Mathematics and Economics*; *NAAJ* = *North American Actuarial Journal*.

^aThis article also was among the most cited in the previous study conducted using citations from the sample journals during the years 2001–2005.

The JRI articles most frequently cited by the sample journals, regardless of the year published, are found in Table 8. The JRI article most frequently cited by the sample journals is Grosen and Jorgensen's 1997 article, "Valuation of Early Exercisable Interest Rate Guarantees." As was the case in the previous table, only one article appears in both this list and the corresponding list from the previous Colquitt (2003) study, that being Mayers and Smith's 1994 article, "Managerial Discretion, Regulation and Stock Insurer Ownership Structure." In contrast, between the first and second Colquitt studies, five articles appeared on both lists.

Again, most of the articles found in Table 8 were published during the mid to late 1990s. The most notable exception to this is the 1977 Boyle and Schwartz article,

"Equilibrium Prices of Guarantees Under Equity-Linked Contracts: Two Approaches," which was tied for first as the most frequently cited *JRI* article during the 2001 to 2005 period. No author appears in this list more than once.

Table 9 provides a list of the articles from each of the risk and insurance and actuarial journals that were the most frequently cited by the sample journals.⁹ Only three journals (the *BAJ*, the *JRU*, and the *NAAJ*) had the same article as its most frequently cited in the current study and the previous Colquitt (2003) study. The 1992 article, "Advances in Prospect Theory: Cumulative Representation of Uncertainty," by Tversky and Kahneman was the most frequently cited *JRU* article in both previous Colquitt studies and the current study. Authors that appear in multiple articles on the list are Grosen, Jorgensen, and Wang.

Table 10 contains the most frequently cited articles in any of the actuarial journals.¹⁰ As further evidence of the *NAAJ*'s impressive increase in influence in recent years, Gerber and Shiu's 1998 *NAAJ* article, "On the Time Value of Ruin" is the most frequently cited actuarial article with 47 citations (18 more than the second most frequently cited actuarial article). *IME* is the most frequently represented journal on the list with six of the top 11 most frequently cited articles. The *AB* and the *BAJ* are represented with three and one article, respectively. Panjer's 1981 *AB* article, "Recursive Evaluation of a Family of Compound Distribution" is the only article that was on the corresponding list in the previous Colquitt (2003) study. Incidentally, it was also on the list of the most frequently cited actuarial articles in the first Colquitt (1997) study. Also, articles in the same issue of *IME*, "The Concept of Comonotonicity in Actuarial Science and Finance: Theory" and "The Concept of Comonotonicity in Actuarial Science and Finance: Application," both by Dhaene et al. (2002), were numbers 2 and 5 on the list of the most frequently cited actuarial articles.

CONCLUSION

The bibliographies of articles from 17 of the leading *risk* journals and 16 of the leading finance journals during the years 2001 through 2005 were reviewed and the citations to these same *risk* journals found in these bibliographies were recorded. Following Colquitt (2003), the *risk* journals were then broken down into two groups: 10 risk and insurance journals and seven actuarial journals. Using the citation data collected, the journals within each of these two groups were ranked based on the total number of citations (overall research impact) as well as on the citations per article published (per article research impact). The most substantial difference in this study and Colquitt (2003) is a more comprehensive set of available data for *RMIR* and the *NAAJ* along with the inclusion of the *PCAS*.

⁹ The most frequently cited articles from *BQ*, the *CPCU*, the *JFSP*, and the *JII* were not included because in each case there were multiple articles with either two or three citations.

¹⁰ A listing of the most frequently cited articles published in any of the risk and insurance articles is not provided because it would so closely resemble Table 9, with the only difference being the inclusion of three articles from the *JRU*; Tversky and Kahneman's 1992 article "Advances in Prospect Theory: Cumulative Representation of Uncertainty" (49 citations), Viscusi and Aldy's 2003 article, "The Value of a Statistical Life: A Critical View of Market Estimates Throughout the World" (13 citations), and Wakker and Tversky's 1993 article, "An Axiomatization of Cumulative Prospect Theory" (10 citations).

Among the risk and insurance journals, including and excluding self-citations, the *JRI* was the most frequently cited journal, followed by the *JRU* and the *JIR*. When evaluating the journals on a per article impact, the order remains the same when including self-citations but the *JRU* falls from second place to fifth when excluding self-citations. *RMIR* is last among the risk and insurance journals on the basis of total citations but increases to seventh (sixth) when evaluating its impact on a per article basis including self-citations (excluding self-citations). The low overall impact of *RMIR* is likely due to the fact that it is the youngest of all the sample journals; *RMIR* was first published in 1997 (approximately 45 percent of all sample citations are to articles published before 1997). The lowest ranking journals of the risk and insurance group on a per article basis are the *CPCU*, the *JFSP*, and *BQ*. This is likely due to the specialized nature of these journals.

Consistent with the two previous Colquitt (1997, 2003) studies as well as other studies of risk and insurance journals, the *JRI* holds its position as the core journal among the risk and insurance group. It clearly stands far above the other risk and insurance journals in both overall impact (with and without self-citations) and on a per article basis (with and without self-citations). The *JRI* was either the most frequently or second most frequently cited risk and insurance journal by eight of the 10 risk and insurance journals (the exception being the *CPCU* and the *GPT*). Also, the *JRI* is the most frequently cited risk and insurance journal by every journal in the actuarial group and also the only risk and insurance journal cited by each of the journals in the actuarial group. These results are consistent with the previous Colquitt (2003) study.

In terms of total citations, *IME* is the top journal in the actuarial group, followed by the *AB* and the *NAAJ*. Excluding self-citations, *IME* and the *AB* remain the top two most frequently cited journals, but the *SAJ* finishes third, ahead of the *NAAJ*. When ranking the journals on a per article impact, *IME* remains the highest ranking journal, followed by the *NAAJ* when including self-citations and the *AB* when excluding self-citations. *IME* is to the actuarial group what the *JRI* is to the risk and insurance group, being the most influential of all journals in its group. *IME* is either the most frequently or second most frequently cited journal by six of the seven actuarial journals (the exception being the *PCAS*, which cites itself and the *JRI* with the most frequency) as well as being the second most frequently cited journal by the *JRI*. These results are somewhat different from the previous Colquitt (2003) study, where the *AB* was arguably the most influential among the actuarial journals. Apart from *IME*, the most notable finding with this study as compared to the previous Colquitt (2003) study is the relative impact of the *NAAJ*. Its regular position as a top three actuarial journal is impressive, considering it was first published in 1997. As is the case with *RMIR*, the relative newness of the *NAAJ* likely will result in its overall ranking increasing in future studies.

The most frequently cited *JRI* articles, the most frequently cited articles from each risk journal, and the most frequently cited articles from the actuarial group were reported. There is very little overlap between the most frequently cited *JRI* articles in this study and those of the previous Colquitt (2003) study, with only one article appearing on both lists. This is in contrast to the overlap of the most frequently cited *JRI* articles from the first two Colquitt studies (1997, 2003), where five articles were common to both. This may suggest a shift in the focus of the *JRI* during the years

of the most recent sample (2001 through 2005). Two articles share the position as the most frequently cited *JRI* article, each with 16 citations: Grosen and Jorgensen's 1997 article, "Valuation of Early Exercisable Interest Rate Guarantees" and Boyle and Schwartz's 1977 article, "Equilibrium Prices of Guarantees Under Equity-Linked Contracts: Two Approaches." The most frequently cited article from the risk and insurance group is Tversky and Kahneman's 1992 *JRI* article, "Advances in Prospect Theory: Cumulative Representation of Uncertainty."

The most frequently cited articles found in any of the actuarial group journals are Gerber and Shiu's 1998 *NAAJ* article, "On the Time Value of Ruin" (47 citations); Dhaene et al.'s 2002 *IME* article, "The Concept of Comonotonicity in Actuarial Science and Finance: Theory" (29 citations); and Wilkie's 1995 *BAJ* article, "More on a Stochastic Asset Model for Actuarial Use" (28 citations). The influence of the Dhaene et al. article is particularly impressive, given that it was published in 2002, 2 years into the sample period (meaning that it was a citable article in only 3 of the 5 years of data collection). Six of the top 11 most frequently cited articles published in the journals that make up the actuarial group are from *IME*, highlighting again the high regard in which the actuarial community holds the research published in *IME*. Of the remaining five articles on the list, three of them are from the *AB*, reinforcing previous findings that it is one of the most influential actuarial journals as well.

APPENDIX

Journals Included in the Study

Risk and Insurance Journals

<i>Benefits Quarterly (BQ)</i>	<i>CPCU Journal (CPCU)</i>
<i>Geneva Papers on Risk and Insurance Issues and Practice (GPIP)</i>	<i>Geneva Papers on Risk and Insurance Theory (GPT)</i>
<i>Journal of Financial Services Professionals (JFSP)</i>	<i>Journal of Insurance Issues (JII)</i>
<i>Journal of Insurance Regulation (JIR)</i>	<i>Journal of Risk and Insurance (JRI)</i>
<i>Journal of Risk and Uncertainty (JRU)</i>	<i>Risk Management and Insurance Review (RMIR)</i>

Actuarial Journals

<i>Astin Bulletin (AB)</i>	<i>British Actuarial Journal (BAJ)</i>
<i>Insurance: Mathematics and Economics (IME)</i>	<i>Journal of Actuarial Practice (JAP)</i>
<i>North American Actuarial Journal (NAAJ)</i>	<i>Proceedings of the Casualty Actuarial Society (PCAS)</i>
<i>Scandinavian Actuarial Journal (SAJ)</i>	

Finance Journals

<i>Financial Analysts Journal</i>	<i>Financial Management</i>
<i>Financial Review</i>	<i>Journal of Banking and Finance</i>
<i>Journal of Business</i>	<i>Journal of Business Finance and Accounting</i>
<i>Journal of Finance</i>	<i>Journal of Financial and Quantitative Analysis</i>
<i>Journal of Financial Economics</i>	<i>Journal of Financial Research</i>
<i>Journal of Financial Services Research</i>	<i>Journal of Futures Markets</i>
<i>Journal of International Money and Finance</i>	<i>Journal of Money, Credit and Banking</i>
<i>Journal of Portfolio Management</i>	<i>Review of Financial Studies</i>

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