

A Bibliometric Overview of Financial Studies

José M. Merigó, Jian-Bo Yang and Dong-Ling Xu

Abstract Academic research in modern finance has been developing over the last decades. Many important contributions have been published in the main journals of the field. This paper analyzes scholarly research in finance by using bibliometric indicators. The main results are summarized in three fundamental issues. First, the citation structure in finance is presented. Next, the paper studies the influence of financial journals by using a wide range of indicators including publications, citations and the *h*-index. The paper ends with an overview of the most influential papers. In general, the results are in accordance with the expectations where the Journal of Finance, the Journal of Financial Economics and the Review of Financial Studies are the most popular journals and the USA is clearly the dominant country in finance.

Keywords Bibliometrics · Web of science · Journal rankings · Finance

1 Introduction

Bibliometric studies are very common in the literature. They analyze quantitatively the bibliographic material. Due to the strong development of computers and internet, today it is a very popular field to assess the state of the art of a research area because the information is easily available to any scientific institution. The definition of bibliometrics has brought many discussions in the literature. A very common definition is the one provided by Broadus (1987) that clearly defined the topic considering future

J.M. Merigó (✉)

Department of Management Control and Information Systems, University of Chile, Av. Diagonal Paraguay 257, 8030015 Santiago, Chile
e-mail: jmerigo@fen.uchile.cl

J.M. Merigó · J.-B. Yang · D.-L. Xu

Manchester Business School, University of Manchester, Manchester M156PB, UK
e-mail: jian-bo.yang@mbs.ac.uk

D.-L. Xu

e-mail: ling.xu@mbs.ac.uk

© Springer International Publishing Switzerland 2015

J. Gil-Aluja et al. (eds.), *Scientific Methods for the Treatment of Uncertainty in Social Sciences*, Advances in Intelligent Systems and Computing 377, DOI 10.1007/978-3-319-19704-3_20

developments due to modern technologies. He stated that bibliometrics is “the quantitative study of physical published units, or of bibliographic units, or of surrogates of either”. Recently, several studies (Alonso et al. 2009) have provided deeper understandings of the concept including the work of Bar-Ilan (2008) that connected it with a more general framework that included scientometrics and informetrics.

The aim of this paper is to present a bibliometric analysis of the most fundamental research developed in finance since the creation of JF. For doing so, it is used the Web of Science (WoS) as the database for collecting the information because it is usually regarded as the most influential one for scientific research. Thus, this study provides a modern approach for analyzing the state of the art in finance from a bibliometric perspective. Its main advantage is that it analyzes the information considering a wide range of variables that permits to detect the weaknesses and strengths of a journal or a paper. Moreover, it provides an updated list of results that contributes to the knowledge in this field following previous works in this direction by Alexander and Mabry (1994), Chan et al. (2002), Chung et al. (2001) and Currie and Pandher (2011). The analysis is divided in two parts that can be classified in journal analysis and the most cited papers since 1946.

The paper focuses on the most relevant journals. It analyzes those journals with a strong financial orientation indexed in WoS that are usually found in the subject category of “business finance”. By doing so, it is assumed that only the most relevant journals in financial research are included because the aim of WoS is only to include those journals that accomplishes with high quality standards including a rigorous peer-review process and regular publication of issues without delays. Several indicators are used in order to analyze their quality (Merigó et al. 2015) including the number of papers and citations, the *h*-index and the impact factor provided by WoS – Journal Citation Reports (JCR). The results are in accordance with the common knowledge and previous studies (Chan et al. 2013), being JF, JFE and RFS the most influential journals.

An analysis of the most cited papers in financial research is also presented. This part of the work studies the 50 most cited papers in finance according to the results found in WoS. Thus, it is possible to get an overview of those papers that have a strongest impact in the scientific community. The results are more or less in accordance with the common knowledge where many of the well-known papers appear highly ranked in the list. For doing this, this paper is organized as follows. Section 2 presents a journal ranking in finance according to some bibliometric indicators. Section 3 studies the most cited papers in finance of all time. Section 4 summarizes the main results and conclusions of the paper.

2 Citation Structure in Finance

In April 2013, there were 39,440 papers in WoS in the 50 financial journals available in the WoS category of Business, Finance. If only articles, notes and reviews are considered, the number is reduced to 32,087. The global *h*-index of

finance according to the 50 selected journals is 257. That is, 257 papers of the whole set of 39,440 papers have received at least 257 citations.

An important issue when analyzing the publication and citation structure is to consider the number of papers that have surpassed a citation threshold. This indicates the level of citation that most of the papers receive and permits to identify the number of citations that the top papers usually receive. Table 1 presents the general

Table 1 General citation structure in finance according to WoS

	≥500	≥100	≥50	≥10	≥5	≥1	Total
1983	1	26	67	181	254	355	389
1984	2	24	62	193	248	371	438
1985	3	29	57	192	261	374	434
1986	3	30	69	215	298	406	466
1987	3	27	66	207	268	378	431
1988	7	40	80	204	285	406	447
1989	3	40	88	249	318	437	496
1990	1	46	96	266	342	464	520
1991	2	43	86	257	321	449	502
1992	3	43	84	260	323	436	480
1993	6	39	104	287	366	468	519
1994	2	33	73	242	319	424	467
1995	2	49	106	313	406	523	574
1996	2	49	112	319	401	519	558
1997	6	54	121	332	425	553	588
1998	2	46	111	322	412	527	608
1999	2	55	110	347	433	554	635
2000	2	66	134	340	446	565	677
2001	0	47	114	386	498	644	706
2002	1	54	144	425	538	695	790
2003	0	33	104	436	577	774	852
2004	0	24	100	497	665	874	954
2005	0	24	102	505	694	981	1073
2006	0	14	61	499	757	1086	1194
2007	0	11	43	429	685	1092	1245
2008	0	5	25	394	732	1402	1632
2009	1	3	10	365	731	1577	1955
2010	0	0	2	167	477	1435	1997
2011	0	0	0	40	175	1151	2127
2012	0	0	0	2	13	482	2050
Total	54	954	2331	8871	12668	20402	25804
%	0.21 %	3.70 %	9.03 %	34.38 %	49.09 %	79.07 %	100 %

Abbreviations: ≥500, ≥100, ≥50, ≥10, ≥5, ≥1 = number of papers with more than 500, 100, 50, 10, 5 and 1 citations; % = Percentage of papers

citation structure considering several citation thresholds and developing an annual analysis since 1983.

Only 54 papers have received at least 500 citations between 1983 and 2012 which represents 0.2 % of all the papers. About 9 % of the papers receive more than 50 citations. Focusing on the last 10 years, the citation level is very low because more time is needed in order to consolidate a huge number of citations. Only one paper has received more than 500 citations and a very low number of the papers have already surpassed the 50 citation threshold. However, it is expected that many of these papers will receive a lot of citations in the future because currently they are new papers that still have not reached a consolidated position in the scientific community.

3 Journal Rankings

This section presents a journal ranking according to the data available in WoS. The journals are ranked according to the *h*-index although many other indicators are included in order to get a complete picture of each of them. The reason for using the *h*-index is because it combines publications and citations in the same measure (Olhетен et al. 2011). However, it has some limitations when dealing with journals with significant differences in the number of publications. Usually, a higher number of papers bring a higher *h*-index independently of the quality of the papers. Although it is more efficient that the total number of papers and citations, it still cannot totally control this issue. The other alternative is to consider the ratio citation/papers or the impact factor but the problem here is that very small journals may get higher positions although not many people take them into account. Table 2 presents the journal ranking. Although the ranking is established according to the *h*-index, the rest of the indicators give a complete view of each of the journals. Note that in the case of tie in the *h*-index, it is selected first the journal with the lowest number of papers because this indicates that with a lower number of papers it has been able to reach a higher *h*-index.

JF and JFE are clearly the most influential journals in finance. Next, it is found RFS that is growing a lot during the last years and JFQA. Note that JB ended publication in 2006 but if included in the ranking would appear in the fourth position before JFQA. More or less, the results are in accordance with the common knowledge being the most popular journals in the first positions (Alexander and Marbry 1994; Chan et al. 2013). However, some deviations are found due to the particular nature of the *h*-index that requires a consolidation process throughout time. Therefore, young journals that have been recently included in WoS appear in lower positions. In some cases, these can be seen as a deviation since some of these journals should probably appear in a better position including RF and EFM. But in general, the results seem to be logical.

Table 2 Most influential financial journals according to WoS

R	Name	H	TC	TP	C/P	Y	Vol.	IF	IF5	T50
1	JF	187	195677	4768	41	1946	1	4.333	6.185	21
2	JFE	169	136090	1973	69	1976	3	3.424	5.087	20
3	RFS	103	42501	1266	34	1990	3	3.256	5.367	1
–	JB ¹	93	44204	2298	19	1928	1	–	–	4
4	JFQA	72	29278	1957	15	1966	1	1.636	2.130	0
5	JBF	69	36733	3372	11	1980	4	1.287	1.721	0
6	JMC	67	28262	2112	13	1976	8	1.104	1.700	2
7	JIMF	55	16961	1523	11	1983	2	0.858	1.434	0
8	FM	42	11089	1283	9	1972	1	1.330	1.568	0
9	MF	40	7432	429	17	1997	7	1.000	1.463	1
10	JFI	35	4686	345	14	1995	4	2.208	2.460	0
11	JFM	34	9929	1547	6	1981	1	0.782	0.855	0
12	JPM	33	5682	1445	4	1984	10	0.525	0.562	0
13	JCF	32	4693	536	9	2001	7	1.035	1.774	0
14	FS	26	2986	299	10	2002	6	1.212	1.597	0
15	QF	25	3384	796	4	2001	1	0.824	0.957	0
16	FAJ	24	2529	447	6	2001	57	0.952	0.959	0
17	JFSR	23	2177	366	6	2008	33	1.176	–	0
18	IIFE	20	1917	393	5	1997	2	0.784	0.776	0
19	JFMk	18	1998	223	9	2002	5	1.093	1.505	0
20	FRBSL	16	1011	244	4	2004	86	0.640	0.748	0
21	EFM	16	1201	271	4	2005	11	0.738	1.431	0
22	RF	11	485	144	3	2008	12	1.440	–	0
23	JOR	10	333	102	3	2006	1	0.182	0.427	0
24	JFEC	10	422	128	3	2007	5	0.976	1.580	0
25	JEF	10	643	290	2	2008	15	0.934	–	1

¹JB ended publication in 2006

Abbreviations: R = Rank; H = *h*-index; TC and TP = Total citations and papers; Y = Year when the journal was included in WoS; Vol. = First volume included in WoS; IF and IF5 = 2 and 5-Year Impact Factor 2011; T50 = Number of papers in the Top 50 list shown in Table 3

Journal abbreviations: JF = J. Finance; JFE = J. Financial Economics; RFS = Review of Financial Studies; JB = J. Business; JFQA = J. Financial and Quantitative Analysis; JBF = J. Banking and Finance; JMC = J. Money, Credit and Banking; JIMF = J. Int. Money and Finance; FM = Financial Management; MF = Mathematical Finance; JFI = J. Financial Intermediation; JFM = J. Futures Markets; JPM = J. Portfolio Management; JCF = J. Corporate Finance; FS = Finance and Stochastics; QF = Quantitative Finance; FAJ = Financial Analysts J.; JFSR = J. Financial Services Research; IIFE = Int. J. Finance & Economics; JFMk = J. Financial Markets; FRBSL = Federal Reserve Bank of St Louis; EFM = European Financial Management; RF = Review of Finance (before European Finance Review); JOR = J. Operational Risk; JFEC = J. Financial Econometrics; JEF = J. Empirical Finance

4 The Most Influential Papers in Finance

Many papers have made fundamental contributions to the financial literature. Some of them have even led to the Nobel Prize in economics. This section tries to identify the most influential ones by analyzing the 50 most cited papers of all time according to WoS. This measure aims at identifying the influence and popularity that a paper has reached in the financial literature. However, several limitations may occur due to the specific research considered in each paper that may attract more researchers and citations than other very good papers but with less use in the scientific community. In general terms, it is assumed that the most cited studies represent the majority of the key papers in the financial literature although some exceptions may appear. Table 3 presents a list with the 50 most cited articles in finance.

The most cited papers are very well-known in the scientific community. Some of them have led to the Nobel Prize in economics including the paper by Markowitz,

Table 3 The 50 most cited papers in finance according to WoS

R	J	TC	Title	Author/s	Year
1	JFE	7264	Theory of firm: managerial behaviour, agency costs and ownership structure	MC Jensen, WH Meckling	1976
2	JF	3185	Portfolio selection	H Markowitz	1952
3	JF	2630	Capital asset process: a theory of market equilibrium under conditions of risk	WF Sharpe	1964
4	JF	2335	Efficient capital markets: review of theory and empirical work	EF Fama	1970
5	JFE	2231	Common risk factors in the returns on stocks and bonds	EF Fama, KR French	1993
6	JFE	2095	Corporate financing and investment decisions when firms have information that investors do not have	SC Myers, NS Majluf	1984
7	JF	1691	The cross-section of expected stock returns	EF Fama, KR French	1992
8	JF	1621	Counter speculation, auctions, and competitive sealed tenders	W Vickrey	1961
9	JFE	1559	Determinants of corporate borrowing	SC Myers	1977
10	JF	1515	A survey of corporate governance	A Shleifer, RW Vishny	1997
11	JB	1488	The behaviour of stock-market prices	EF Fama	1965
12	JB	1460	The variation of certain speculative prices	B Mandelbrot	1963
13	JF	1428	Legal determinants of external finance	R La Porta, F Lopez De Silanes, A Shleifer et al.	1997
14	JF	1382	Corporate ownership around the world	R La Porta, F Lopez De Silanes, A Shleifer	1999
15	JF	1277	Pricing of corporate debt: risk structure of interest rates	RC Merton	1974
16	MF	1209	Coherent measures of risk	P Artzner, F Delbaen et al.	1999

(continued)

Table 3 (continued)

R	J	TC	Title	Author/s	Year
17	JF	1173	Financial ratios, discriminant analysis and prediction of corporate bankruptcy	EI Altman	1968
18	JFE	1167	Management ownership and market valuation: an empirical analysis	R Morck, A Shleifer, RW Vishny	1988
19	RFS	1121	A closed form solution for options with stochastic volatility with applications to bond and currency options	SL Heston	1993
20	JFE	1117	Equilibrium characterization of term structure	O Vasicek	1977
21	JFE	1110	Option pricing: simplified approach	JC Cox, SA Ross, M Rubinstein	1979
22	JF	1086	On persistence in mutual fund performance	MM Carhart	1997
23	JF	1060	The modern industrial revolution, exit, and the failure of internal control systems	MC Jensen	1993
24	JF	998	On the relation between the expected value and the volatility of the nominal excess returns on stocks	LR Glosten, R Jagannathan, DE Runkle	1993
25	JFE	993	Using daily stock returns: the case of event studies	SJ Brown, JB Warner	1985
26	JF	940	Returns to buying winners and selling losers: implications for stock market efficiency	N Jegadeesh, S Titman	1993
27	JFE	913	Option pricing when underlying stock returns are discontinuous	RC Merton	1976
28	JFE	886	The market for corporate control: the scientific evidence	MC Jensen, RS Ruback	1983
29	JF	873	Informational asymmetries, financial structure, and financial intermediation	HE Leland, DH Pyle	1977
30	JMC	843	A general equilibrium approach to monetary theory	J Tobin	1969
31	JF	842	The pricing of options on assets with stochastic volatilities	J Hull, A White	1987
32	JFE	836	Bid, ask and transaction prices in a specialist market with heterogeneously informed traders	LR Glosten, PR Milgrom	1985
33	JF	802	Efficient capital markets. 2	EF Fama	1991
34	JF	791	Does the stock market overreact	WFM Debondt, R Thaler	1985
35	JF	747	Multifactor explanations of asset pricing anomalies	EF Fama, KR French	1996
36	JFE	729	Estimating betas from nonsynchronous data	M Scholes, J Williams	1977
37	JFE	726	Valuation of options for alternative stochastic processes	JC Cox, SA Ross	1976
38	JMC	724	Postwar US business cycles: an empirical investigation	RJ Hodrick, EC Prescott	1997
39	JB	723	Dividend policy, growth, and the valuation of shares	MH Miller, F Modigliani	1961

(continued)

Table 3 (continued)

R	J	TC	Title	Author/s	Year
40	JF	698	The capital structure puzzle	SC Myers	1984
41	JFE	691	Outside directors and CEO turnover	MS Weisbach	1988
42	JFE	684	Critique of asset pricing theory tests 1: Past and potential testability of theory	R Roll	1977
43	JFE	678	Higher market valuation of companies with a small board of directors	D Yermack	1996
44	JEF	675	A long memory property of stock market returns and a new model	Z Ding, CWJ Granger, RF Engle	1993
45	JF	667	Problems in selection of security of portfolios: performance of mutual funds in period 1945–1964 - 1	MC Jensen	1968
46	JFE	663	Industry costs of equity	EF Fama, KR French	1997
47	JFE	663	Expected stock returns and volatility	KR French, GW Schwert, RF Stambaugh	1987
48	JFE	658	The separation of ownership and control in East Asian Corporations	S Claessens, S Djankov, LHP Lang	2000
49	JFE	651	Additional evidence on equity ownership and corporate value	JJ McConnell, H Servaes	1990
50	JB	641	Economic forces and the stock-market	NF Chen, R Roll, SA Ross	1986

Sharpe, Vickrey and Merton. JF and JFE dominate the list with more than 80 % of the papers. Note that the last column of Table 2 shows the number of papers that each journal has in the top 50. Note that the results shown in Table 3 are in accordance with previous studies (Alexander and Marbry 1994; Chung et al. 2001; Arnold et al. 2003) although important deviations are found due to the evolution of financial research during the last years and the strong growth seen in WoS that has increased a lot the number of citations.

Regarding authors in the list, it is worth noting that Eugene F. Fama and Andrei Shleifer have published four of the top 50 papers. Michael C. Jensen also obtain remarkable results having three papers in the top 50. Kenneth R. French. Rafael La Porta, Florencio López De Silanes, Robert Merton, Stewart C. Myers and Robert W. Vishny have two papers each. Another interesting issue is that most of the papers come from American institutions and authors. Non-English speaking countries have a very low presence in the list. Currently, it seems that they are increasing their number of publications and citations but still far away from the USA.

Note that many key papers in finance have been published in a more general economic journal. Among others, it is found the famous paper of Black and Scholes (1973) published in the Journal of Political Economy (JPE) about the pricing of options that gave Myron Scholes the Nobel Prize in economics. Observe that this paper, if ranked in the list, would get the second position with 5253 citations. Table 4 presents an additional list of highly cited papers in finance that were not published in journals strictly dedicated to finance.

Table 4 Other highly cited papers published in other journals

J	TC	Title	Author/s	Y
JPE	5253	Pricing of options and corporate liabilities	F Black, M Scholes	1973
AER	2720	Agency costs of free cash flow, corporate-finance, and takeovers	MC Jensen	1986
JPE	2400	Law and finance	R La Porta, F Lopez-de-Silanes, A Shleifer et al.	1998
JLE	2203	Separation of ownership and control	EF Fama, MC Jensen	1983
BJE	2178	Theory of rational option pricing	RC Merton	1973
AER	2038	The cost of capital, corporation finance and the theory of investment	F Modigliani, MH Miller	1958
JPE	1693	Agency problems and the theory of the firm	EF Fama	1980
RESt	1631	The valuation of risk assets and the selection of risky investments in stock portfolios ...	J Lintner	1965
ECMT	1619	A theory of the term structure of interest rates	JC Cox, JE Ingersoll, SA Ross	1985
JPE	1546	Risk, return and equilibrium: Empirical tests	EF Fama, JD MacBeth	1973
ECMT	1366	Continuous auctions and insider trading	AS Kyle	1985
RES	1202	Financial intermediation and delegated monitoring	DW Diamond	1984
ECMT	1179	Intertemporal capital asset pricing model	RC Merton	1973
JPE	1147	Bank runs, deposit insurance, and liquidity	DW Diamond, PH Dybvig	1983
JECM	1041	ARCH modelling in finance: a review of the theory and empirical evidence	T Bollerslev, RY Chou, KF Kroner	1992
JPE	1021	The structure of corporate ownership: Causes and consequences	H Demsetz, K Lehn	1985
JPE	993	Large shareholder and corporate control	A Shleifer, RW Vishny	1986
JET	954	Martingales and arbitrage in multiperiod securities market	JM Harrison, DM Kreps	1979
JET	932	Arbitrage theory of capital asset pricing	SA Ross	1976
AER	844	Financial dependence and growth	RG Rajan, L Zingales	1998

Note that the requirement to be included in this list is to have received at least 840 citations and be within the scope of finance. Abbreviations are available in Tables 2 and 3 except for JPE = J. Political Economy; AER = American Economic Review; JLE = J. Law & Economics; BJE = Bell J. Economics; RESt = Review of Economics and Statistics; ECMT = Econometrica; RES = Review of Economic Studies; JECM = J. Econometrics; JET = J. Economic Theory

Apart from JPE, it is worth noting that American Economic Review and Econometrica are those journals that have also published many leading papers in financial research.

5 Conclusions

A general bibliometric overview of scholarly research in finance has been presented. Several fundamental issues have been considered including a journal analysis and the most influential papers in the field. A major result found in the paper is that the USA clearly dominates the field with the leading papers and authors in finance. Moreover, they are responsible for publishing the leading journals. The information has been collected through WoS that is usually regarded as the main database for academic research. The results are in accordance with the common knowledge being the most popular research ranked in the first positions.

This paper has provided a general bibliometric overview of financial research over the last decades. Although the results are in accordance with the common knowledge, it is worth noting that some important limitations may produce changes on the results shown in the paper. Therefore, the paper aims to be informative rather than trying to provide some general strict rankings.

Acknowledgments Support from the European Commission through the project PIEF-GA-2011-300062 is gratefully acknowledged.

References

- Alexander Jr, J.C., Mabry, R.H.: Relative significance of journals, authors, and articles cited in financial research. *J. Fin.* **49**, 697–712 (1994)
- Alonso, S., Cabrerizo, F.J., Herrera-Viedma, E., Herrera, F.: H-index: A review focused on its variants, computation and standardization for different scientific fields. *J. Inf.* **3**, 273–289 (2009)
- Arnold, T., Butler, A.W., Crack, T.F., Altıntig, A.: Impact: What influences finance research? *J. Bus.* **76**, 343–361 (2003)
- Bar-Ilan, J.: Informetrics at the beginning of the 21st century—a review. *J. Inf.* **2**, 1–52 (2008)
- Black, F., Scholes, M.: Pricing of options and corporate liabilities. *J. Polit. Econ.* **81**, 637–654 (1973)
- Broadus, R.N.: Toward a definition of “Bibliometrics”. *Scientometrics* **12**, 373–379 (1987)
- Chan, K.C., Chang, C.H., Chang, Y.: Ranking of finance journals: some Google scholar citation perspectives. *J. Empir. Fin.* **21**, 241–250 (2013)
- Chan, K.C., Chen, C.R., Steiner, T.L.: Production in the finance literature, institutional reputation, and labor mobility in academia: A global perspective. *Fin. Manage.* **31**, 131–156 (2002)
- Chung, K.H., Cox, R.A.K., Mitchell, J.B.: Citation patterns in the finance literature. *Fin. Manage.* **30**, 99–118 (2001)
- Currie, R.R., Pandher, G.S.: Finance journal rankings and tiers: An active scholar assessment methodology. *J. Bank. Fin.* **35**, 7–20 (2011)
- Merigó, J.M., Gil-Lafuente, A.M., Yager, R.R.: An overview of fuzzy research with bibliometric indicators. *Appl. Soft Comput.* **27**, 420–433 (2015)
- Olhete, E., Theoharakis, V., Travlos, N.G.: Faculty perceptions and readership patterns of finance journals: a global view. *J. Fin. Quant. Anal.* **40**, 223–239 (2011)