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Gene Fama's Impact: A Quantitative Analysis

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Abstract

This paper provides a quantitative perspective on Gene Fama's influence on the scholarly community. He has more than 140,000 Google cites while the median number of citations for the Fellows of the American Finance Association is 32,792. Gene Fama has published highly-cited papers in six decades. His most impactful theoretical work took place earlier than his most impactful empirical work. While Gene Fama's most impactful empirical asset pricing work was published in the Journal of Financial Economics, his most impactful theoretical/conceptual work was published in the Journal of Finance and in the Journal of Law and Economics. An important dimension of the impact of Gene Fama on the finance profession is through his Ph.D. students. These students include one Nobel prize winner, six AFA presidents, and four editors of top finance journals.

* Respectively, Distinguished University Professor of Finance and Statistics, University of Rochester and NBER, and Reese Chair of Banking and Monetary Economics, Ohio State University, NBER, and ECGI. We thank Bryan Baugh and Andrei Gonçalves for research assistance.

Gene Fama has been the most prominent empiricist in finance for fifty years. He is the founder of empirical research in modern finance. For somebody who believes in numbers like he does, it is fitting to evaluate his impact using quantitative measures. We do so in this paper. As we collected data, we learned more about how exceptional Gene's impact is.

A scholar impacts the scholarly community because his research increases our knowledge. The most straightforward measure of how research increases our knowledge is a measure of how that research is cited. We focus on a broad measure of citations, namely citations from Google Scholar, as our main measure. Using Google Scholar, Gene has more than 140,000 citations. To put this number in perspectives, we compare Gene's citations to those of Fellows of the American Finance Association. We find that the median number of Google Scholar citations for the Fellows of the American Finance Association is 32,792. Another striking piece of data is that only four Fellows have more than 100,000 citations.

We then explore in more detail which papers are most highly cited. Gene has three papers that have both more than 2,000 citations in the Social Sciences Citation Index and more than 11,000 Google citations. Strikingly, only one of these papers is an empirical paper. It is the paper with Ken French on "Common risk factors in the returns on stocks and bonds" published by the Journal of Financial Economics. The other two papers are the "Efficient capital markets: A review of theory and empirical work" and the paper with Michael Jensen titled "Separation of ownership and control." Our examination of the citations to Gene's papers shows how broad his range of interest was through his career. Of his top three papers, two are in the field of asset pricing and one is in the field of corporate finance. The "Efficient capital markets" paper is, in many ways, Gene's most influential paper. The citations do not show it partly because the contribution of the paper is to define the concept of efficient capital markets in a way that has lasted for more than forty years. When authors talk about efficient capital markets, they refer to Gene's definition, but they rarely cite him, which is the ultimate mark of the influence of a paper,

namely that its contribution becomes so embedded in a field's way of thinking and communicating that there is no need to cite the original paper when referring to its key concept.

Gene's influence has spread through students. Gene has advised an extremely large number of Ph.D. students. We attempt to create a complete list of students advised either as chair or as a member of the student's committee and found 102 students. These students have gone on to conduct research as they learned to do it from Gene. These students are influential on their own. A simple way to see the success of Gene as an advisor is that 11 of his students have more than 10,000 Google citations. Six of his former students have been president of the American Finance Association and one received the Nobel Memorial Prize in Economic Sciences.

We conclude the paper with an attempt to explain why Gene has been so successful and for so long. Gene's professional life spans four complete decades. In each one of these decades, he published at least 15 papers. For the last complete decade, he was in his sixties. The decade where he produced papers with the highest average number of citations is the 1990s, when he was in his fifties. His three most cited works are each published in a different decade. This lifecycle pattern of production is unusual among Nobel Prize winners. We speculate that it is the product of a fierce intellect who loves what he is doing and has an unparalleled work ethic.

Section 1. Gene Fama's impact on finance.

A scholar can impact his field as well as the world at large. It is not straightforward to measure the impact of a scholar on the world outside academia. There is no quantitative measure that we know of. Nevertheless, it is easy to note that "efficient markets" is a household name throughout the world. The efficient markets view has inspired countless laws, regulations, and policies. It affects how investors make their investment decisions and evaluate their performance. It also has been blamed for a financial crisis.

To measure a scholar's impact on his field, the simplest and most conventional approach is to quantify how often scholars in his field reference his work. The limitations of citation counts are well-known, but despite these limitations they provide the most straightforward and objective assessment of a scholar's impact. There are two distinct approaches to counting citations. The most traditional approach is to use the Social Sciences Citation Index (SSCI). The other approach is to use Google Scholar. Search within Google Scholar is made easier with a program called "Publish or Perish" (Harzing (2007)). Nevertheless, results with Google Scholar can be sensitive to how the search is conducted. To minimize the risk of errors, we conducted the search multiple times. Two research assistants conducted the search separately for each name. We then worked to reconcile their results when they were materially different. The number of citations in Google Scholar to SSCI is roughly 5 to 1.

With Google Scholar, Gene has 140,562 citations. Using SSCI instead, Gene has 30,154 citations. To put the number of citations in perspective, we collect the citations of all the Fellows of the American Finance Association. The list of the Fellows includes all past presidents of the AFA as well as elected Fellows. Each year at least one Fellow has been elected. Gene is the first elected Fellow of the AFA. All winners of the Nobel Memorial Prize in Economics with work in finance are Fellows. This list does not provide a perfect comparison group as some highly cited financial economists are not Fellows. For instance, Tim Bollerslev is not a Fellow, but he would be among the top ten most highly cited Fellows as his citation count is 63,678. Table 1 shows the Google citations for all Fellows with more than 20,000 Google citations. Thirteen fellows have less than 20,000 Google citations. Figure 1 plots the distribution of the number of citations for AFA Fellows.

The Table and the Figure show clearly how large Gene's impact is compared to the typical Fellow. The mean Google citations for the AFA Fellows (excluding Gene) is 38,985. The distribution is quite skewed as the median is 31,855. Gene's cites are therefore more than three times the mean and more than four times the median. The standard deviation of the number of Google citations for AFA Fellows is 32,655. Consequently, Gene's number of Google citations is more than three standard deviations above the mean. The top five AFA fellows in Google citations are in order: Andrei Shleifer, Gene Fama,

Michael Jensen, Kenneth Arrow, and Robert Engle. Not surprisingly, three of the five have received the Nobel Memorial Prize in Economics.

With the introduction of the World Wide Web, a new measure of interest in a scholar's work has become the number of downloads. Gene has been involved with the Social Sciences Research Network (SSRN) since its inception. He is Chair of the Board of Trustees of SSRN. Data from SSRN shows again the extent of the interest in Gene's work. SSRN publishes statistics on the top authors. Gene's papers have been downloaded an astounding 386,573 times on SSRN.

Section 2. Where does the impact come from?

We now turn to a more detailed examination of the citation impact of Gene's work. Google Scholar reports citations on 107 papers and two books. In Table 2, we separate the papers into six groups: asset pricing, efficient markets, corporate control, banking, dividend policy and capital structure, and interest rates, exchange rates, and futures prices. Though dividing papers across these groups is straightforward for most papers, we recognize that there is some subjectivity in some of the choices we make. Gene's impact is strongest in the first three groups. In each of these groups, Gene has at least two papers with more than one thousand cites in SSCI and at least one paper with 10,000 Google sites. The other three groups have distinctly less impact – by Gene's standards, but not by the standards of almost all members of the finance profession – as no paper has more than 500 SSCI citations and no paper has more than 2,000 Google citations.

Figure 2 shows the distribution of the number of papers across areas. The asset pricing group has the most papers, as Gene has published 37 papers in asset pricing. The interest rate and foreign exchange area is the second most active group. In contrast, the corporate control and banking groups are the least active. Figure 3 shows that the corporate control group has the most citations per paper. This success is due to two enormously successful papers. The first one, with Michael Jensen, is "Separation of ownership and control." The second one is by Gene alone and is "Agency problems and the theory of the firm." The first paper has 2,321 SSCI citations and the second has 1,743 SSCI citations. The efficient

markets group is the second most successful group in terms of average citations per paper. This group includes the "Efficient capital markets" paper which has 2,432 SSCI and 11,658 Google Scholar citations. Gene's dissertation, "The behavior of stock-market prices," is the second most cited article in that group with 1,373 SSCI citations and 6,598 Google Scholar citations. Finally, the asset pricing group is the third most successful group in citations per paper. That group includes three papers that have more than 1,000 SSCI citations. These three papers include two papers with Ken French published in the 1990s, "Common risk factors in the returns of stocks and bonds," and "The cross-section of expected stock returns." The third paper is the paper with Jim MacBeth from the seventies titled "Risk, return, and equilibrium: Empirical tests."

Gene has both empirical papers and theoretical papers. His first theoretical paper was published in 1965, which is the first year that Gene appeared in scholarly journals. Some of the theory papers have a mathematical model. Others are more conceptual. Two of the three most impactful papers of Gene are theoretical conceptual papers: The "Efficient capital markets" paper and the "Separation of ownership and control" paper. Gene has theoretical papers in each of the groups we identify. However, the impact of these papers differs according to the group. The top five papers in the Corporate Control group are all theoretical papers. They have a total of 24,315 Google citations. Fifteen out of 44 AFA Fellows have fewer Google citations for their whole career output. Both of Gene's Banking papers are theoretical. In the Efficient Markets group, three of the top five papers are conceptual theoretical papers, with a total of 19,427 Google citations. In the Asset Pricing and Interest Rates and Exchange Rates Group, no theoretical paper is among the top ten papers. In the Dividend Policy and Capital Structure Group, two theoretical papers are among the top ten cited papers. However, neither paper has a large number of citations by Gene's standards. Specifically, "Risk-adjusted discount rates and capital budgeting" has 352 Google citations while "The effects of a firm's investment and financing decisions" has 307 Google citations.

The data we collect makes it possible to ascertain where Gene published his papers. Figure 4 shows that he published 23 papers in the Journal of Finance, followed closely by the Journal of Financial

Economics with 20 papers. In contrast, he published only two papers in the Review of Financial Studies. He also published in the main economics journals with 9 papers in the American Economic Review and 5 in the Journal of Political Economy. Figure 5 shows the average number of citations per paper across the journals in which Gene published. His highest average number of citations per paper is in the Journal of Law and Economics. Only three of Gene's papers are published in that journal and they are all co-authored with Michael Jensen. These papers have a total of 23,657 citations.

Finally, it is amazing to see that Gene's work spans parts of six decades. Figure 6 shows the number of papers he published in each decade from the 1960s through the current decade. Since the first and last decades only include about 5 years when Gene was publishing, it is not surprising that the number of papers is smaller, but the sustained quantity of output reflected in this graph is truly unique in our experience. Figure 7 shows the average citations per paper across decades. The 1980s and 1990s, which include much of the Fama-French asset pricing research and the Fama-Jensen corporate control work, have the highest average levels of citations per paper. Nevertheless, papers from all of these decades have extremely high levels of average citations.

Section 3. Gene's impact through his students.

Scholars have an impact on the field through the students they train who go on to have themselves an impact on the field. In that dimension, Gene's achievement is unique among the founders of modern finance. He advised 102 Ph.D. students either as chair or as a member of the committee. Collectively, these students have 585,645 Google citations. Of these 102 students, he was the chair for 48 students. These students have 438,353 Google citations. The average number of citations per Ph.D. student whose dissertation committee was chaired by Gene is 9,132.

Among the students for whom Gene was the advisor, Michael Jensen has the largest number of Google citations with 123,957. Without him, the average number of citations per Ph.D. student advised by Gene drops to 6,689. The students with more than 20,000 Google citations include Campbell Harvey, Richard Roll, Myron Scholes, and one of the authors of this article, G. William Schwert. The list includes

two former editors of the Journal of Finance, the founding editor and the current editor of the Journal of Financial Economics, editors of the Journal of Accounting and Economics and the Journal of Accounting Research, and five former presidents of the American Finance Association.[1]

In keeping with the relevance of Gene's work for the world of investments, it is not surprising that several of his former students are investment managers. Clifford Asness and John Liew co-founded AQR Capital Management in 1998. Today AQR has over $113 billion in assets under management. The firm Dimensional Fund Advisors (DFA), which was started in 1981 by two of Gene's students, David Booth and Rex Sinquefield, has designed its menu of products and services around the Fama-French asset pricing research. As of June 2014, DFA had over $378 billion assets under management. Gene has been an active part of DFA's success as a Director and consultant. Needless to say, the success of DFA has been very beneficial for the University of Chicago as reflected in the naming of the "Booth School of Business" in 2008.

Section 4. Some comments on Gene's uniqueness.

Gene's impact on the field of finance, or more generally, the field of economics, is remarkable when it is just measured quantitatively as we just did. However, the numbers do not tell the whole story.

In addition to Gene's impact through his own work and through his students, for over fifty years Gene has had a significant influence on his professional colleagues. This is most obvious through his interactions with the faculty at the University of Chicago, but scholars also benefit from comments from Gene on their papers even when they are not at the University of Chicago. Both of us were visitors at Chicago and we know countless other visitors whose approach to finance was influenced by Gene and whose work, like ours, has benefitted and still benefits from interacting with him. His uniquely economical e-mails commenting on papers are always valuable.

[1] We include Campbell Harvey in the list of AFA presidents as he will hold the title in two years.

One of Gene's biggest contributions has been his presence in the finance seminar at the University of Chicago. The ultimate test for a paper by an empiricist has long been whether Gene would approve of it, or more to the point, whether he would find it credible. Gene, in that seminar, always has had the ability to keep people honest with their work and with what the data were saying. There is always a possibility that Gene could ask for the code as he is known to have done. As a result, he makes the work that is presented at that seminar better, whether it is presented by faculty members or by individuals coming from the outside. Gene has never hesitated to say what he thinks about papers he reads or papers that he listens to. As we know from experience, the fact that a paper is a lead article in a leading journal does not prevent Gene from concluding that the empirical results of the paper are not credible. Gene never thought that science could progress without absolute honesty.

As journal editors, both of us have had the opportunity to interact with Gene as an author and as a referee for more than 35 years. He has been a role model. In fact, when one of us (René Stulz) created the "Tips for Authors" list on the Journal of Finance web site (which migrated to the Journal of Financial Economics web site when René finished his terms as JF editor), many of the examples of how authors should write papers and react to referees' reports are based directly on Gene's behavior.

We have both been privileged to observe Gene's behavior as a referee of others' papers. Gene is the longest continuously active editor at the JFE, having been a co-editor when it was first published in 1974. Many people who achieve much more modest success in our profession often find it too taxing to continue to serve as a referee, reading, thinking about, and offering constructive criticism to authors who are hoping to get their papers published in an academic journal. Gene, in contrast, has always found time to contribute his time and thoughts to his professional colleagues, usually without any direct means of receiving recognition for his efforts since referee reports are anonymous to the author. As shown in Figure 8, since 1994 Gene averages more than four referee reports per year for the JFE, which is higher than the average workload for the rest of the editorial board. Figure 9 shows that his average turnaround time is a little more than 10 days, compared with about 32 days for the rest of the editorial board and over 40 days for ad hoc referees. His behavior as a referee for the Journal of Finance from 1988-2000 was

similar. In short, Gene continues to work hard and quickly as an anonymous colleague, even when the only one who can actually see his behavior in detail is the editor.

It is rare for a scholar to maintain such an intense involvement with research at the forefront of the field for fifty years like Gene has done. Empirical research on the lifecycle of the impact of Nobel prizewinners in economics shows that authors of theoretical/conceptual contributions peak early in life (see Weinberg and Galenson (2005)). More empirically oriented researchers appear to make their contributions later in life. Gene made highly impactful contributions in his 20's, but the Nobel Prize committee cites work form his 50's as well. He published seven asset pricing papers with more than 1,000 Google citations in his 50's. In his 60's, he had two corporate finance papers with more than 1,000 cites. His three most highly cited papers were published in 1970, 1983, and 1993.

What is it that makes these papers special? None of the papers is a technical tour-de-force. None uses the most advanced econometric or theoretical techniques. Instead, each one of these papers opens up a new way for financial economists to think about their field. The 1970 paper does so by making sense of what market efficiency means and why it has to be taken seriously. The 1983 paper sets up a framework to understand corporate governance. Finally, the 1993 paper proposes an empirical asset pricing model that has been the benchmark model for finance research ever since.

Why have these papers been so successful? Why has Gene been so successful? Gene always works on his papers relentlessly. He has always understood that it is not enough to have insights or results. They have to be communicated so that they will impact the profession. To do that, Gene keeps rewriting his drafts. He always has strong opinions on how papers should be written. As editors, both of us have imposed some of these opinions on countless authors. Gene also works intelligently. He works extremely efficiently and without distractions. Gene's discipline is unparalleled. It leads him to avoid distractions that make most of us less productive, but doing so allows him to be in his office with a regularity that would be close to impossible to replicate for most of his colleagues in finance. This discipline has not stood in the way of him being a kind and considerate person. One of us, René Stulz, remembers that one of the first phone calls he received after back surgery was from Gene. It is often said

that for a paper to be highly cited, it is important to travel far and wide to present the paper and to work hard at selling it through personal interactions. This view may be correct, but if it is, Gene is a huge exception. Finally, and most importantly, Gene has always loved and respected research – and data.

References

Harzing, A. W., 2007, Publish or perish, available from http://www.harzing.com/pop.htm.

Weinberg, B. A., and D. W. Galenson, 2005, Creative careers: The life cycles of Nobel laureates in economics, working paper 11799, National Bureau of Economic Research, Cambridge, Ma.

Table 1. Google Scholar Citations to Fellows of the American Finance Association

Showing all Fellows with 20,000 or more citations.
There are 45 Fellows as of 2014.

		Total Citations
1	Andrei Shleifer	168,336
2	Eugene F. Fama	140,562
3	Michael C. Jensen	123,957
4	Kenneth Arrow	112,621
5	Robert F. Engle	84,429
6	Robert E. Lucas, Jr.	69,926
7	Richard Thaler	68,839
8	Kenneth R. French	64,030
9	Robert C. Merton	59,972
10	John Y. Campbell	55,381
11	Stephen A. Ross	54,710
12	Stewart C. Myers	48,867
13	Raghuram Rajan	45,559
14	René Stulz	45,397
15	Robert Shiller	43,261
16	Bengt Holmström	41,357
17	Myron S. Scholes	38,455
18	Jeremy Stein	37,932
19	Sheridan Titman	37,389
20	Sanford J. Grossman	35,902
21	Harry Markowitz	33,261
22	William F. Sharpe	33,012
23	Richard Roll	32,792
24	Darrell Duffie	30,917
25	Douglas W. Diamond	27,553
26	Franklin Allen	26,670
27	Lars Peter Hansen	26,082
28	John C. Cox	25,311
29	Eduardo S. Schwartz	24,759
30	Burton G. Malkiel	24,550
31	Michael J. Brennan	21,219
32	John H. Cochrane	20,451

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Asset Pricing						
1	11,697	2,430	EF Fama, KR French	Common risk factors in the returns on stocks and bonds	1993	Journal of Financial Economics
2	10,515	1,801	EF Fama, KR French	The cross-section of expected stock returns	1992	The Journal of Finance
3	7,584	1,620	EF Fama, JD MacBeth	Risk, return, and equilibrium: Empirical tests	1973	The Journal of Political Economy
4	3,287	727	EF Fama, KR French	Industry costs of equity	1997	Journal of Financial Economics
5	2,571	627	EF Fama, KR French	Business conditions and expected returns on stocks and bonds	1989	Journal of Financial Economics
6	2,498	587	EF Fama, KR French	Permanent and temporary components of stock prices	1988	The Journal of Political Economy
7	2,448	446	EF Fama, KR French	Size and book-to-market factors in earnings and returns	1995	The Journal of Finance
8	2,375	553	EF Fama, KR French	Dividend yields and expected stock returns	1988	Journal of Financial Economics
9	1,940	435	EF Fama	Stock returns, real activity, inflation, and money	1981	The American Economic Review
10	1,894	509	EF Fama, GW Schwert	Asset returns and inflation	1977	Journal of Financial Economics
11	1,558	252	EF Fama, KR French	Value versus growth: The international evidence	1998	The Journal of Finance
12	1,064	215	EF Fama	Stock returns, expected returns, and real activity	1990	The Journal of Finance
13	984	178	EF Fama, KR French	The equity premium	2002	The Journal of Finance
14	784	152	JL Davis, EF Fama, KR French	Characteristics, covariances, and average returns: 1929 to 1997	2000	The Journal of Finance
15	750	94	EF Fama, KR French	The capital asset pricing model: Theory and evidence	2004	The Journal of Economic Perspectives
16	549	176	EF Fama	Multi-period consumption-investment decisions	1968	The American Economic Review
17	512	66	EF Fama	Components of investment performance	1972	The Journal of Finance
18	424	35	EF Fama, KR French	The CAPM is wanted, dead or alive	1996	The Journal of Finance

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Asset Pricing						
19	404	129	EF Fama	Risk, return and equilibrium: Some clarifying comments	1968	The Journal of Finance
20	389	133	EF Fama	Portfolio analysis in a stable Paretian market	1965	Management Science
21	321	49	EF Fama, KR French	The value premium and the CAPM	2006	The Journal of Finance
22	267	44	EF Fama, KR French	Luck versus skill in the cross-section of mutual fund returns	2010	The Journal of Finance
23	239	45	EF Fama	Multifactor portfolio efficiency and multifactor asset pricing	1996	Journal of Financial and Quantitative Analysis
24	210	56	EF Fama	Risk, return, and equilibrium	1971	The Journal of Political Economy
25	189	49	EF Fama, GW Schwert	Human capital and capital market equilibrium	1977	Journal of Financial Economics
26	146	35	EF Fama, KR French	Disagreement, tastes, and asset prices	2007	Journal of Financial Economics
27	109	45	EF Fama, JD MacBeth	Tests of the multiperiod two-parameter model	1974	Journal of Financial Economics
28	90	6	EF Fama, KR French	Size, value, and momentum in international stock returns	2012	Journal of Financial Economics
29	71	14	EF Fama	A note on the market model and the two-parameter model	1973	The Journal of Finance
30	56	9	DG Booth, EF Fama	Diversification returns and asset contributions	1992	Financial Analysts Journal
31	53	10	EF Fama, KR French, DG Booth, R Sinquefield	Differences in the risks and returns of NYSE and NASD stocks	1993	Financial Analysts Journal
32	51	11	EF Fama	Determining the number of priced state variables in the ICAPM	1998	Journal of Financial and Quantitative Analysis
33	49	14	EF Fama, KR French	Average returns, B/M, and share issues	2008	The Journal of Finance
34	39	13	EF Fama, JD MacBeth	Long-term growth in a short-term market	1974	The Journal of Finance
35	32		EF Fama, KR French	The economic fundamentals of size and book-to-market equity	1992	Unpublished working paper. University of Chicago
36	31		EF Fama, KR French	The CAPM: Theory and evidence	2003	Center for Research in Security Prices (CRSP …

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Asset Pricing						
37	26	11	EF Fama	Ordinal and measurable utility	1972	Studies in the theory of capital markets
	56,206	11,576	Sub-total			
Efficient Markets						
1	11,658	2,432	EF Fama	Efficient capital markets: A review of theory and empirical work	1970	The Journal of Finance
2	6,598	1,373	EF Fama	The behavior of stock-market prices	1965	The Journal of Business
3	4,251	794	EF Fama, KR French	Multifactor explanations of asset pricing anomalies	1996	The Journal of Finance
4	4,206	834	EF Fama	Efficient capital markets: II	1991	The Journal of Finance
5	3,563	627	EF Fama	Market efficiency, long-term returns, and behavioral finance	1998	Journal of Financial Economics
6	3,265	815	E Fama, L Fisher, M Jensen, R Roll	The adjustment of stock prices to new information	1969	International Economic Review
7	741	100	EF Fama	Random walks in stock market prices	1965	Financial Analysts Journal
8	732	174	EF Fama, ME Blume	Filter rules and stock-market trading	1966	The Journal of Business
9	669	150	EF Fama	Mandelbrot and the stable Paretian hypothesis	1963	The Journal of Business
10	495	89	EF Fama, KR French	Dissecting anomalies	2008	The Journal of Finance
11	468	142	EF Fama, R Roll	Parameter estimates for symmetric stable distributions	1971	Journal of the American Statistical Association
12	438	159	EF Fama, R Roll	Some properties of symmetric stable distributions	1968	Journal of the American Statistical Association
13	166	46	EF Fama, AB Laffer	Information and capital markets	1971	The Journal of Business
14	110	14	EF Fama	Efficient capital markets: Reply	1976	The Journal of Finance
15	62	45	EF Fama	Tomorrow on the New York Stock Exchange	1965	The Journal of Business
16	58	10	EF Fama, KR French	The anatomy of value and growth stock returns	2007	Financial Analysts Journal

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Efficient Markets						
17	57	23	EF Fama	Perfect competition and optimal production decisions under uncertainty	1972	The Bell Journal of Economics and Management Science
18	45		EF Fama	Perspectives on October 1987, or, What did we learn from the crash?	1988	
19	45	44	EF Fama, KR French	Luck versus skill in the cross section of mutual fund alpha estimates	2009	The Journal of Finance
	37,627	7,871	Sub-total			
Corporate Control						
1	11,421	2,321	EF Fama, MC Jensen	Separation of ownership and control	1983	Journal of Law and Economics
2	8,716	1,743	EF Fama	Agency problems and the theory of the firm	1980	The Journal of Political Economy
3	3,520	712	EF Fama, MC Jensen	Agency problems and residual claims	1983	Journal of Law and Economics
4	506	98	EF Fama, MC Jensen	Organizational forms and investment decisions	1985	Journal of Financial Economics
5	152	12	EF Fama	Contract costs and financing decisions	1990	The Journal of Business
6	91	26	EF Fama	Time, salary, and incentive payoffs in labor contracts	1991	Journal of Labor Economics
7	88	30	EF Fama, AB Laffer	The number of firms and competition	1972	The American Economic Review
	24,494	4,942	Sub-total			
Banking						
1	1,813	378	EF Fama	What's different about banks?	1985	Journal of Monetary Economics
2	889	192	EF Fama	Banking in the theory of finance	1980	Journal of Monetary Economics
	2,702	570	Sub-total			
Dividend Policy & Capital Structure						
1	1,730	279	EF Fama, KR French	Testing trade-off and pecking order predictions about dividends and debt	2002	Review of Financial Studies
2	1,704	295	EF Fama, KR French	Disappearing dividends: Changing firm characteristics or lower propensity to pay?	2001	Journal of Financial Economics

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

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Dividend Policy & Capital Structure						
3	744	169	EF Fama, H Babiak	Dividend policy: An empirical analysis	1968	Journal of the American Statistical Association
4	551	87	EF Fama, KR French	Taxes, financing decisions, and firm value	1998	The Journal of Finance
5	540	119	EF Fama, KR French	Forecasting profitability and earnings	2000	The Journal of Business
6	501	87	EF Fama, KR French	Financing decisions: who issues stock?	2005	Journal of Financial Economics
7	391	82	EF Fama, KR French	New lists: Fundamentals and survival rates	2004	Journal of Financial Economics
8	352	84	EF Fama	Risk-adjusted discount rates and capital budgeting under uncertainty	1977	Journal of Financial Economics
9	307	63	EF Fama	The effects of a firm's investment and financing decisions on the welfare of its security holders	1978	The American Economic Review
10	250	47	EF Fama, KR French	Profitability, investment and average returns	2006	Journal of Financial Economics
11	206	38	EF Fama	The empirical relationships between the dividend and investment decisions of firms	1974	The American Economic Review
12	193	21	EF Fama, KR French	The corporate cost of capital and the return on corporate investment	1999	The Journal of Finance
13	138	59	GD Eppen, EF Fama	Cash balance and simple dynamic portfolio problems with proportional costs	1969	International Economic Review
14	110	22	EF Fama	Discounting under uncertainty	1996	The Journal of Business
15	73	30	GD Eppen, EF Fama	Solutions for cash-balance and simple dynamic-portfolio problems	1968	The Journal of Business
16	63	26	GD Eppen, EF Fama	Three asset cash balance and dynamic portfolio problems	1971	Management Science
17	25		EF Fama, KR French	Dividends, debt, investment, and earnings	1997	
	7,878	1,508	Sub-total			

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Interest Rates, Exchange Rates, and Futures Prices						
1	1,458	385	EF Fama	Forward and spot exchange rates	1984	Journal of Monetary Economics
2	1,074	411	EF Fama	Short-term interest rates as predictors of inflation	1975	The American Economic Review
3	1,033	252	EF Fama, RR Bliss	The information in long-maturity forward rates	1987	The American Economic Review
4	669	208	EF Fama	The information in the term structure	1984	Journal of Financial Economics
5	626	203	EF Fama, KR French	Commodity futures prices: Some evidence on forecast power, premiums, and the theory of storage	1987	The Journal of Business
6	483	147	EF Fama, MR Gibbons	Inflation, real returns and capital investment	1982	Journal of Monetary Economics
7	417	97	EF Fama	Term-structure forecasts of interest rates, inflation and real returns	1990	Journal of Monetary Economics
8	315	105	EF Fama, MR Gibbons	A comparison of inflation forecasts	1984	Journal of Monetary Economics
9	281	77	EF Fama, KR French	Business cycles and the behavior of metals prices	1988	The Journal of Finance
10	221	93	EF Fama	Inflation uncertainty and expected returns on Treasury bills	1976	The Journal of Political Economy
11	221	82	EF Fama	Forward rates as predictors of future spot rates	1976	Journal of Financial Economics
12	211	75	EF Fama, A Farber	Money, bonds, and foreign exchange	1979	The American Economic Review
13	202	76	EF Fama	Term premiums in bond returns	1984	Journal of Financial Economics
14	159	39	EF Fama	Term premiums and default premiums in money markets	1986	Journal of Financial Economics
15	132	44	EF Fama	Financial intermediation and price level control	1983	Journal of Monetary Economics
16	122	42	EF Fama	Interest rates and inflation: The message in the entrails	1977	The American Economic Review
17	119	35	EF Fama	Inflation, output, and money	1982	The Journal of Business
18	60	22	EF Fama, GW Schwert	Inflation, interest, and relative prices	1979	The Journal of Business
19	57	12	EF Fama	The behavior of interest rates	2006	Review of Financial Studies

Table 2. Google Scholar and Social Science Citation Index Citations to Papers and Books by Eugene Fama

	Google Scholar	SSCI	Authors	Title	Year	Publication
Interest Rates, Exchange Rates, and Futures Prices						
20	47		EF Fama	A pricing model for the municipal bond market	1977	Manuscript, University of Chicago
21	38	11	EF Fama	Transitory variation in investment and output	1992	Journal of Monetary Economics
22	3		EF Fama	Annual inflation and money growth	1979	
23	2		EF Fama	Money and inflation	1979	
24	2		EF Fama	A price model for the municipal bond market	1977	University of Chicago, unpublished manuscript
25	1		EF Fama	Short-term inflation and money growth	1979	
	7,953	2,416	Sub-total			
Books						
1	2,237	772	EF Fama	Foundations of finance: Portfolio decisions and securities prices	1976	
2	1,465	499	EF Fama, MH Miller	The theory of finance	1972	
	3,702	1,271	Sub-total			

Table 3. Google Scholar Citations to Eugene Fama's PhD Students with 1,000 or More Citations

	Name	PhD Year	Google Scholar Citations	
1	Michael C. Jensen*	1967	123,957	**
2	Myron Scholes*	1970	38,397	
3	Campbell R. Harvey*	1986	34,802	**
4	Richard W. Roll*	1967	32,490	
5	Ross L. Watts*	1971	24,703	
6	G. William Schwert*	1975	21,024	**
7	William H. Beaver	1965	19,762	
8	Ray Ball*	1972	17,551	
9	Brad M. Barber	1991	15,411	**
10	Francis A. Longstaff*	1987	14,565	
11	Robert F. Stambaugh*	1981	14,206	
12	A. Craig MacKinlay*	1985	12,683	
13	Hans R. Stoll	1966	12,425	
14	Roger Ibbotson*	1974	9,252	**
15	James D. Macbeth*	1975	9,007	
16	Stephen H. Penman	1978	8,845	
17	Marshall E. Blume	1967	8,772	
18	Donald B. Keim*	1983	8,023	**
19	Philip R. Brown*	1968	7,682	
20	Michael Bradley	1979	7,596	
21	Mark M. Carhart	1995	7,484	
22	Jeffrey Jaffe	1971	6,485	
23	Ka-Keung C. Chan	1985	6,307	
24	Theo J. Vermaelen	1980	6,021	
25	April M. Klein	1983	5,978	
26	Erik Stafford*	1999	5,899	
27	Alon Brav*	1998	5,878	
28	Gautam Kaul*	1985	5,290	
29	Robert A. Korajczyk*	1983	5,028	**
30	Paul A. Zarowin*	1985	4,992	
31	Michael R. Gibbons [Econ Dept]*	1980	4,943	
32	Tyler G. Shumway*	1996	4,693	
33	Marc R. Reinganum	1979	4,570	
34	Paul H. Schultz	1988	4,302	
35	Jennifer S. Conrad	1986	3,998	
36	Giovanni Barone-Adesi	1982	3,473	

Table 3. Google Scholar Citations to Eugene Fama's PhD Students with 1,000 or More Citations

	Name	PhD Year	Google Scholar Citations
37	Robert R. Bliss*	1991	3,179
38	Christopher C. Geczy	1999	2,981
39	Tuomo O. Vuolteenaho*	2000	2,915
40	John P. Gould	1966	2,722
41	Michael D. Ryngaert*	1988	2,690
42	William G. Christie	1989	2,560
43	Anthony W. Lynch	1994	2,539
44	Christopher J. Malloy*	2003	2,529
45	Allan W. Kleidon*	1983	2,505
46	Hyuk Choe*	1990	2,426
47	Christopher K. Polk*	1998	2,373
48	Eric Jacquier*	1991	2,339
49	Scott E. Stickel*	1985	2,011
50	Patrick Joseph Hess	1980	1,912
51	Karl B. Diether	2004	1,697
52	Tamir Agmon	1971	1,612
53	Kewei Hou	2002	1,592
54	Beni Lauterbach*	1986	1,520
55	Clifford S. Asness*	1994	1,337
56	Raymond M. P. Kan	1994	1,299
57	Randolph B. Cohen*	1998	1,208
	Total (including all 102 students)		585,645

Notes:

* Fama was the Chair or Co-Chair of the Committee.

** From Google Scholar web page. Other citation data collected using "Publish or Perish" software.

Fig. 1. Distribution of Citations to AFA Fellows

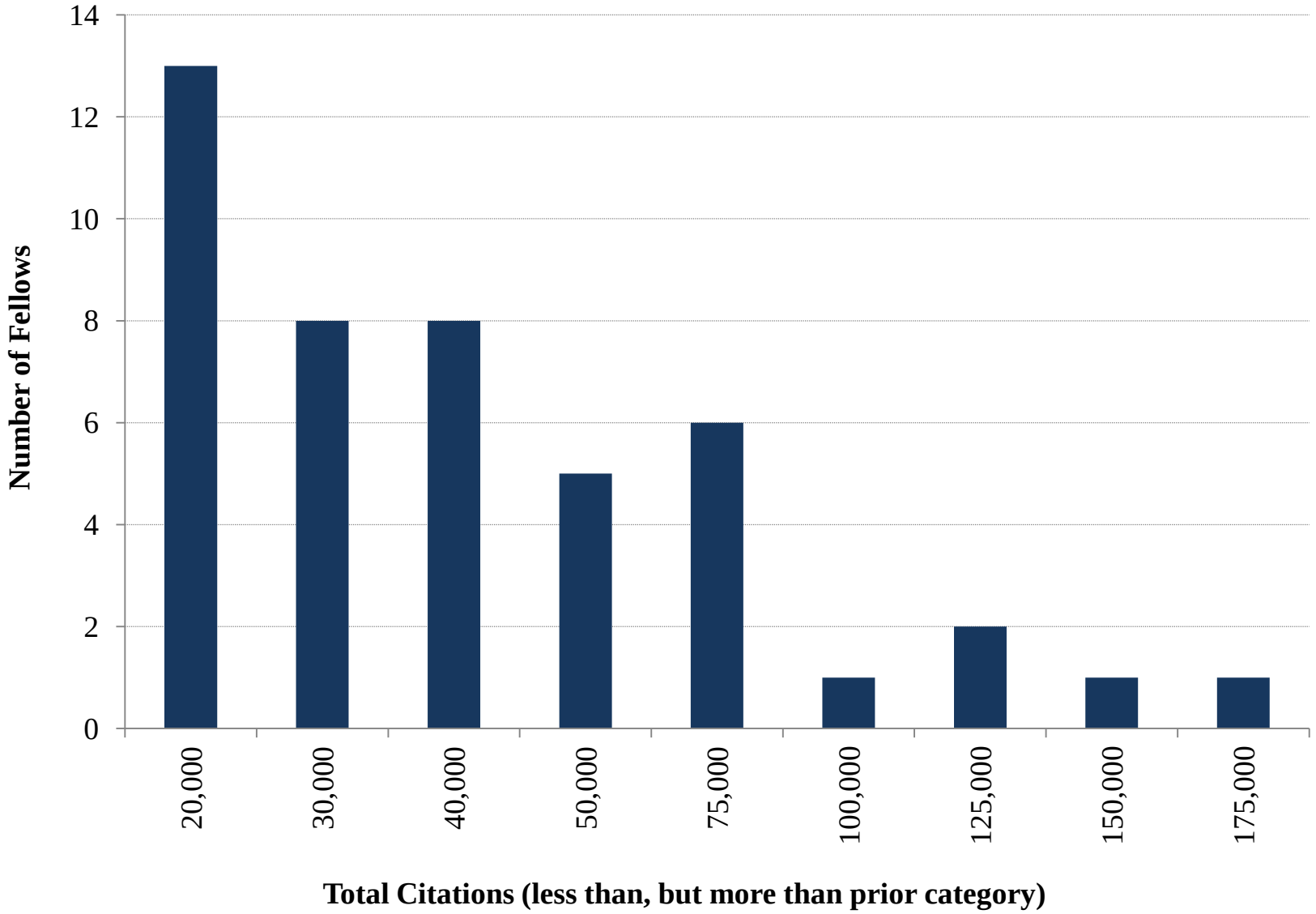

Fig. 2. Distribution of Fama Papers Across Research Areas

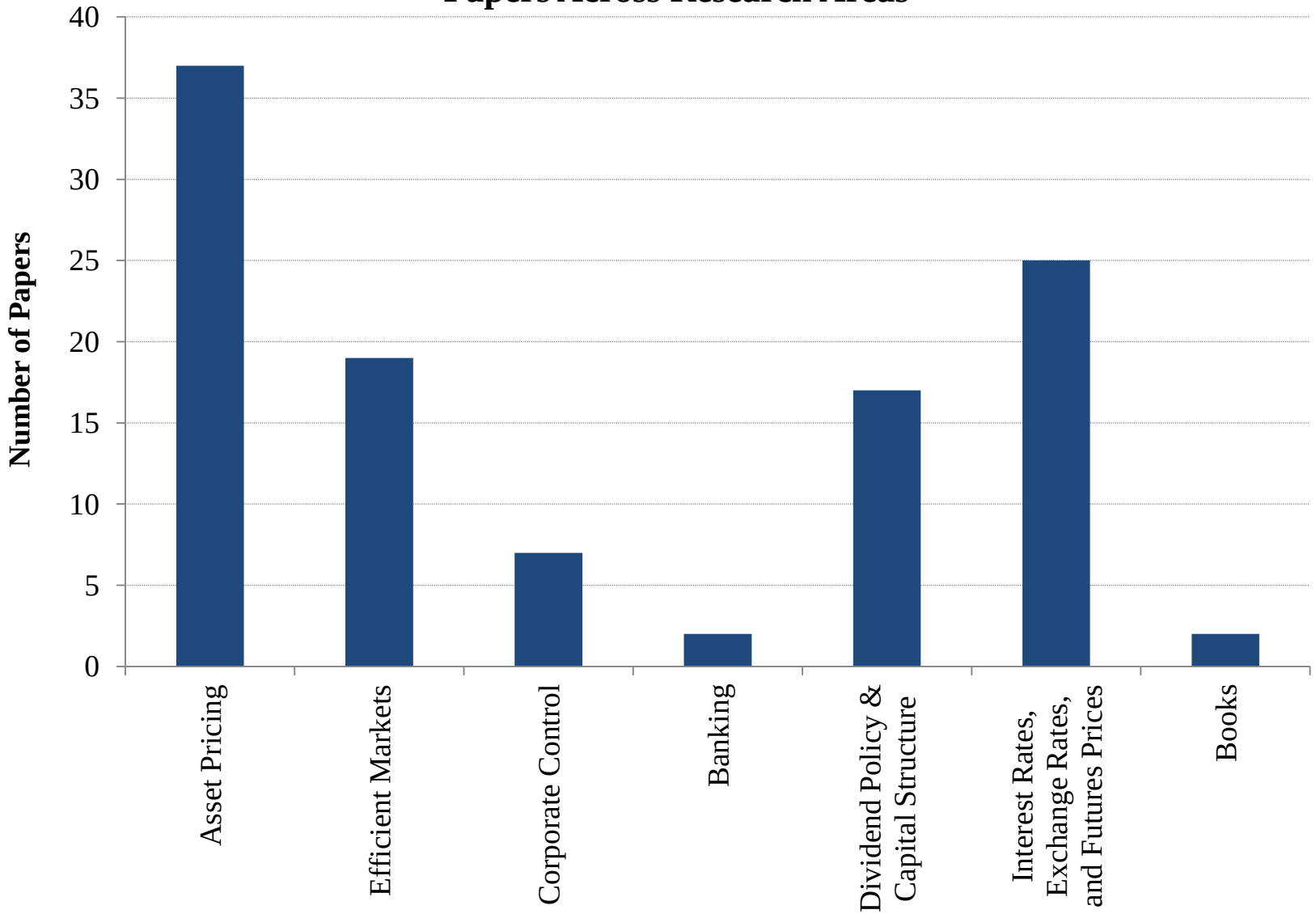

Fig. 3. Average Citations to Fama Papers Across Research Areas

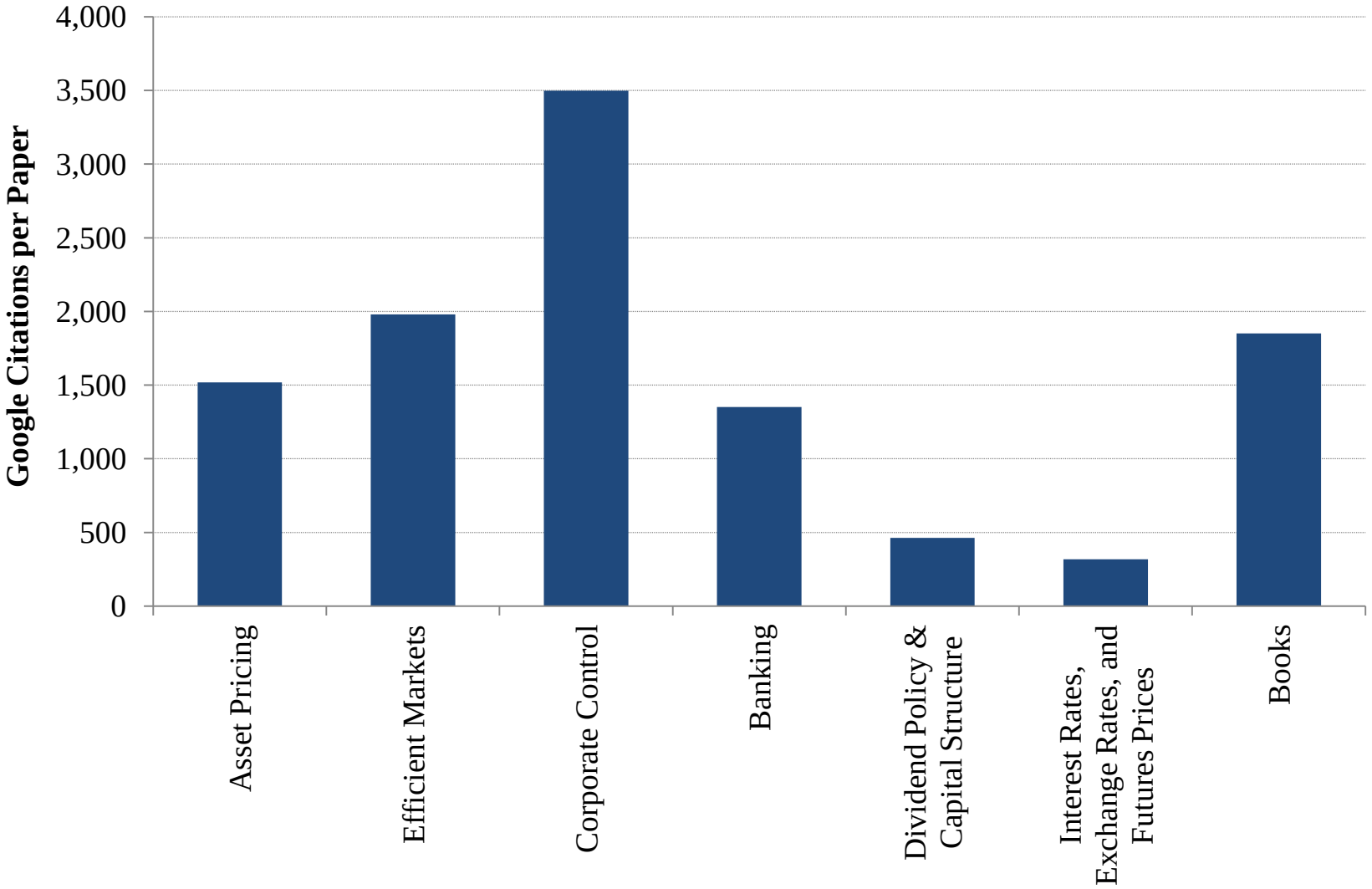

Fig. 4. Distribution of Fama Papers Across Journals

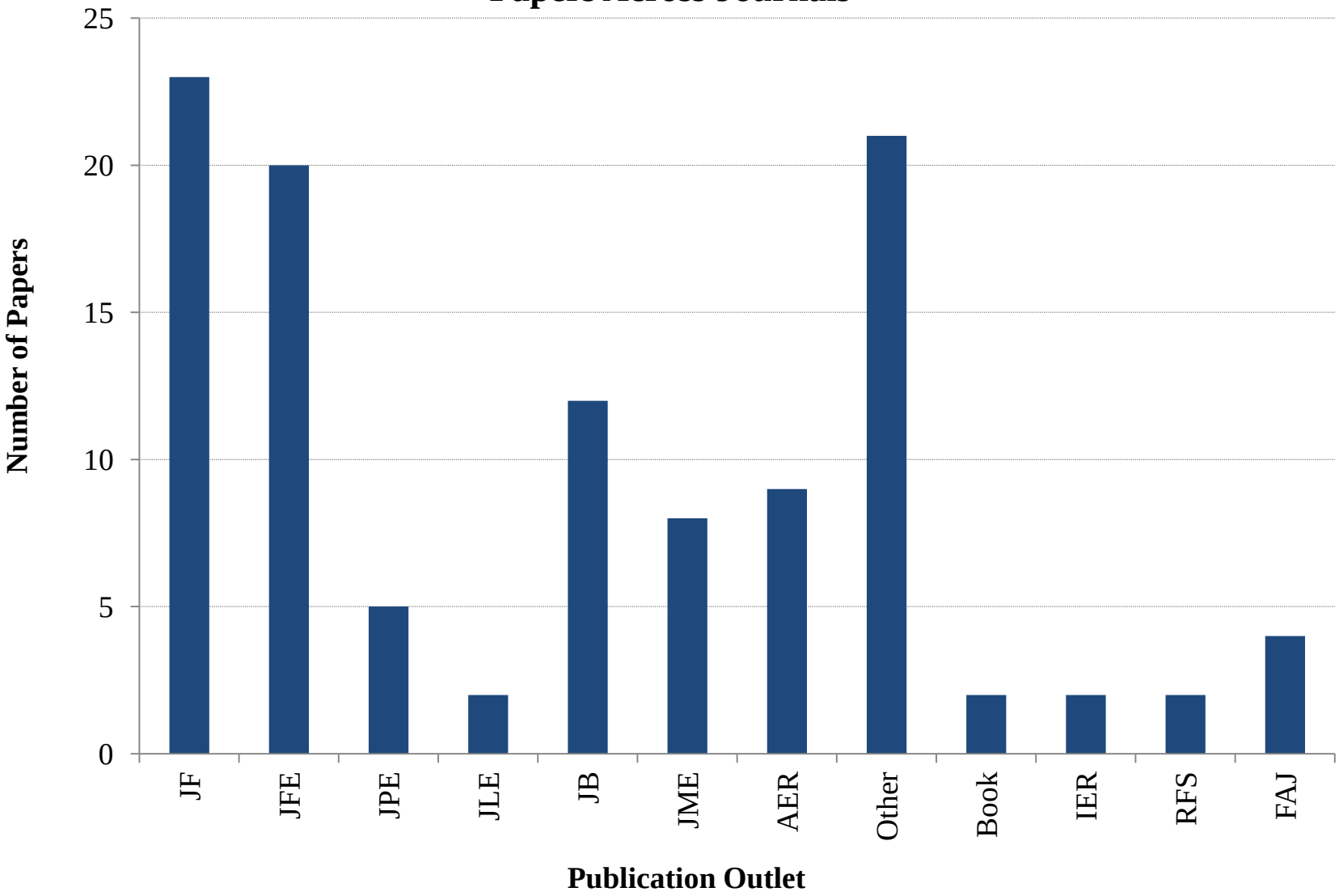

Fig. 5. Average Citations per Fama Paper Across Journals

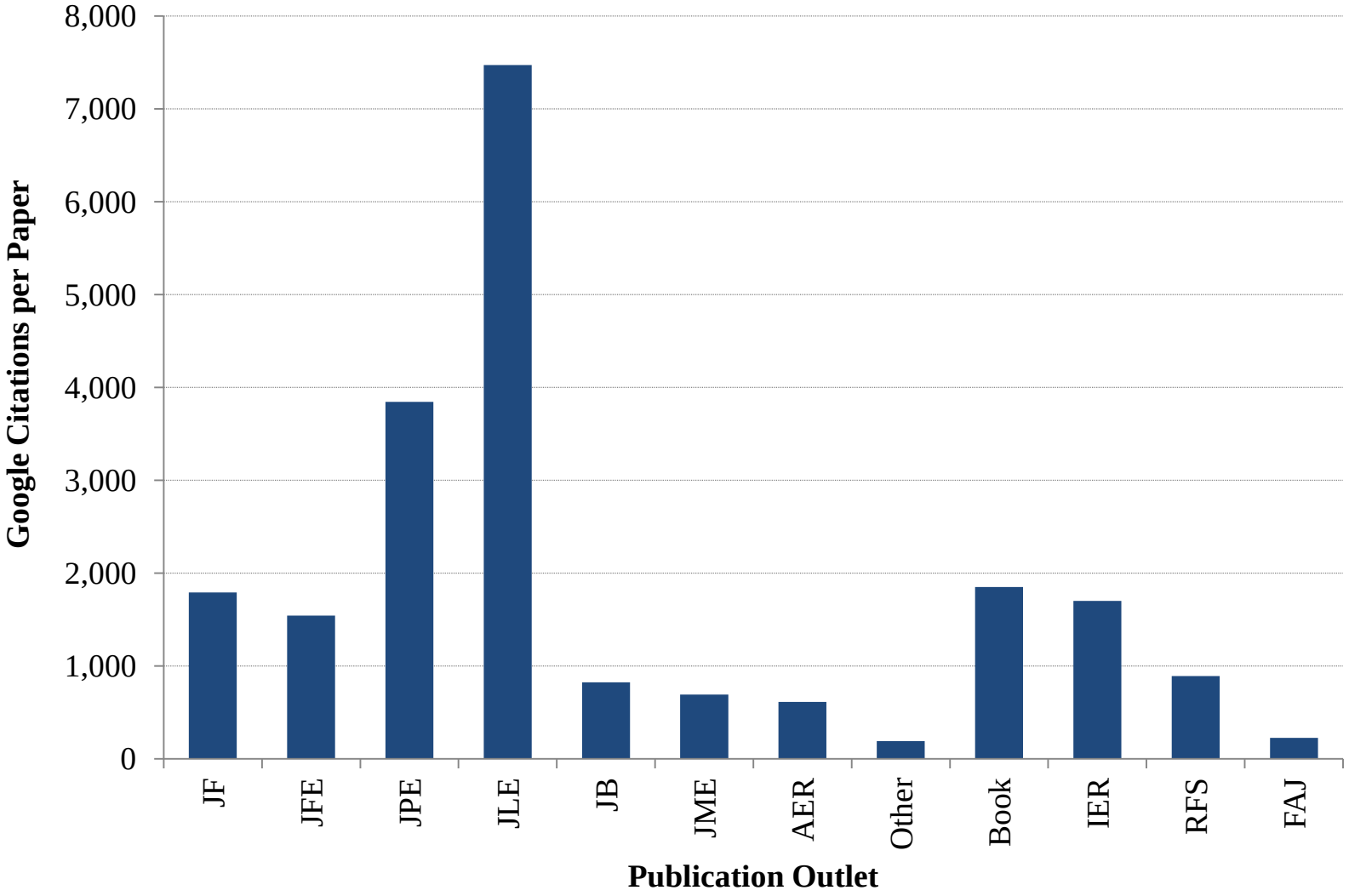

Fig. 6. Distribution of Fama Papers Across Decades

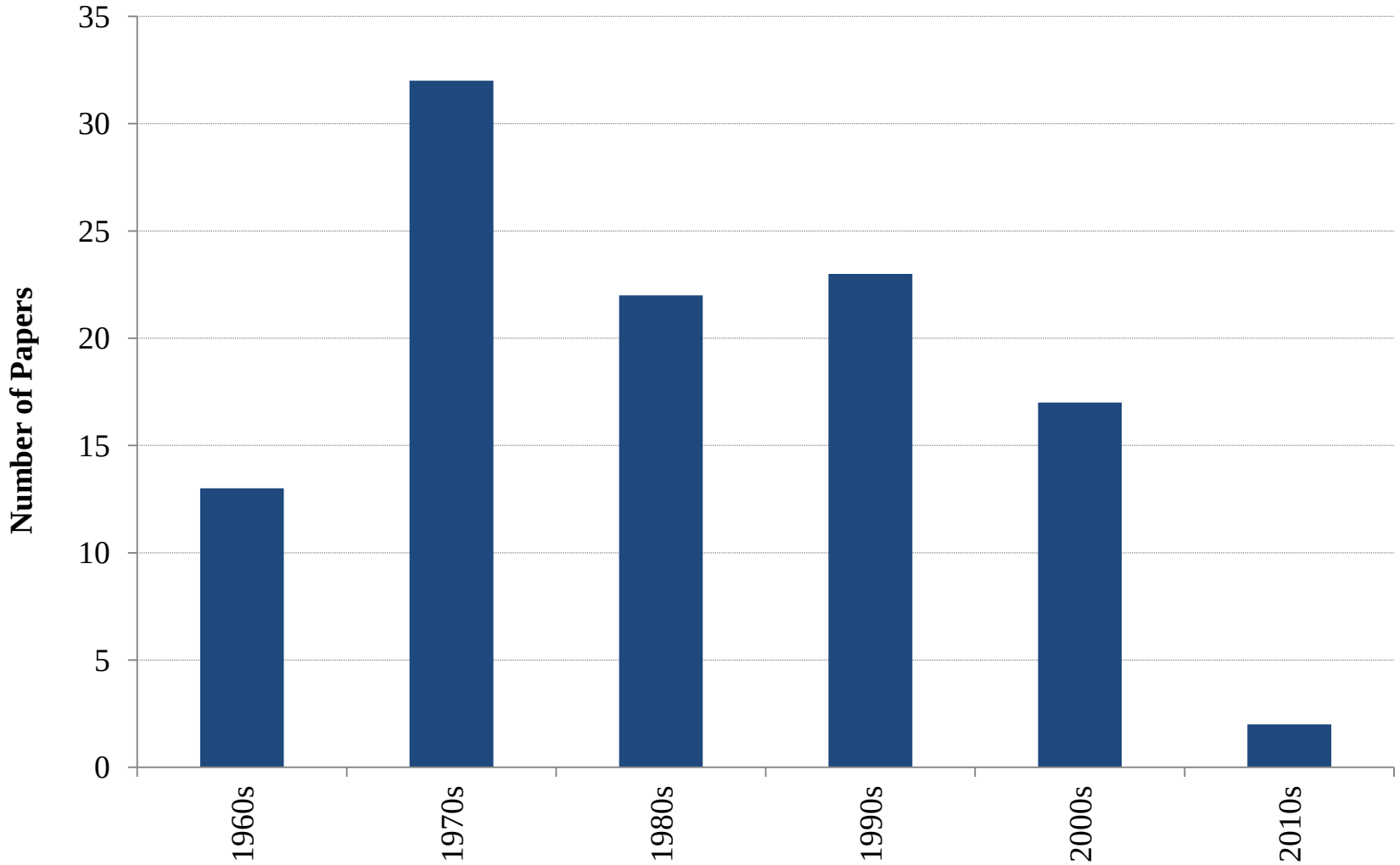

Fig. 7. Average Citations per Fama Paper Across Decades

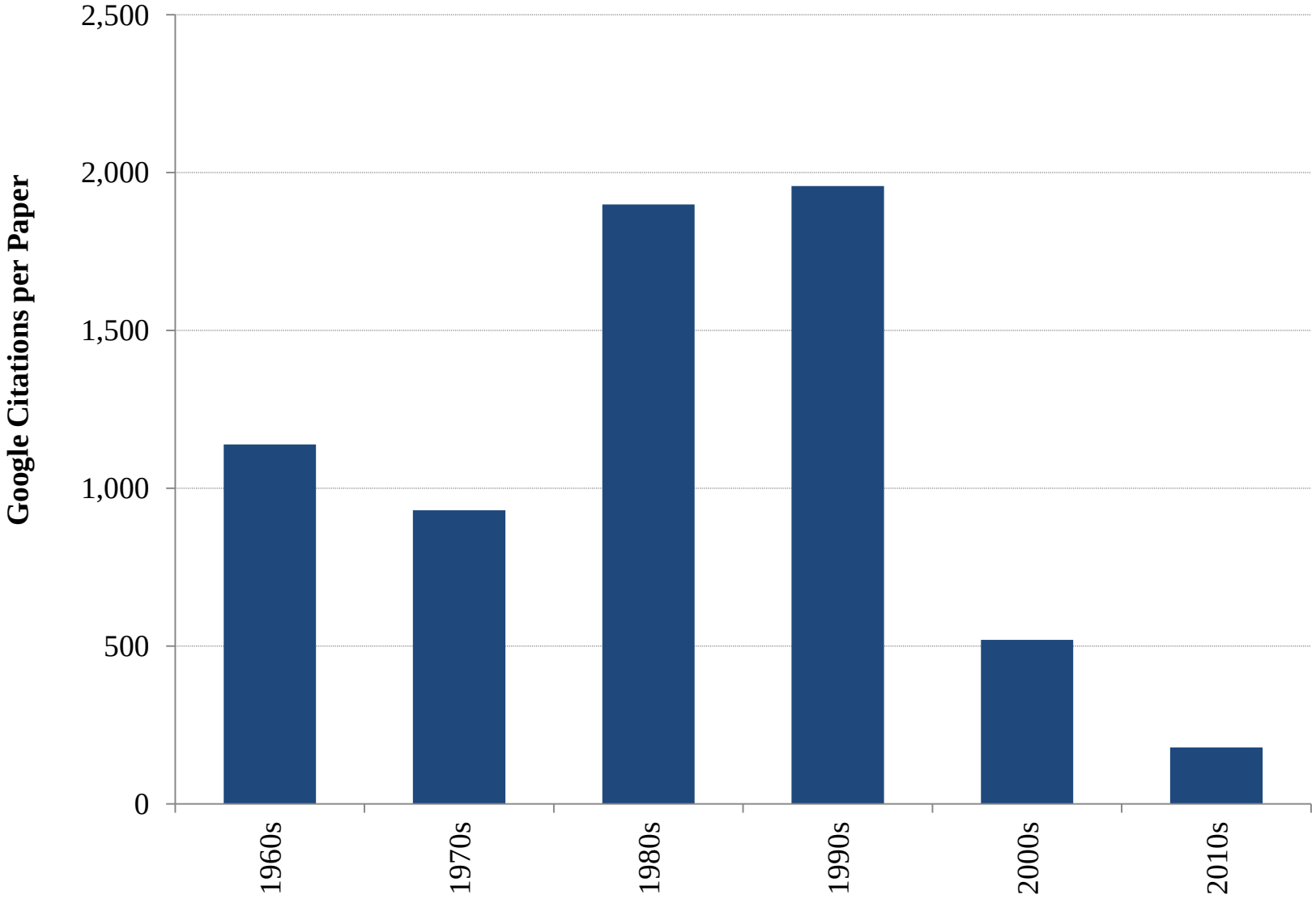

Fig. 8. Average Number of *JFE* Referees' Reports, 1994-2013

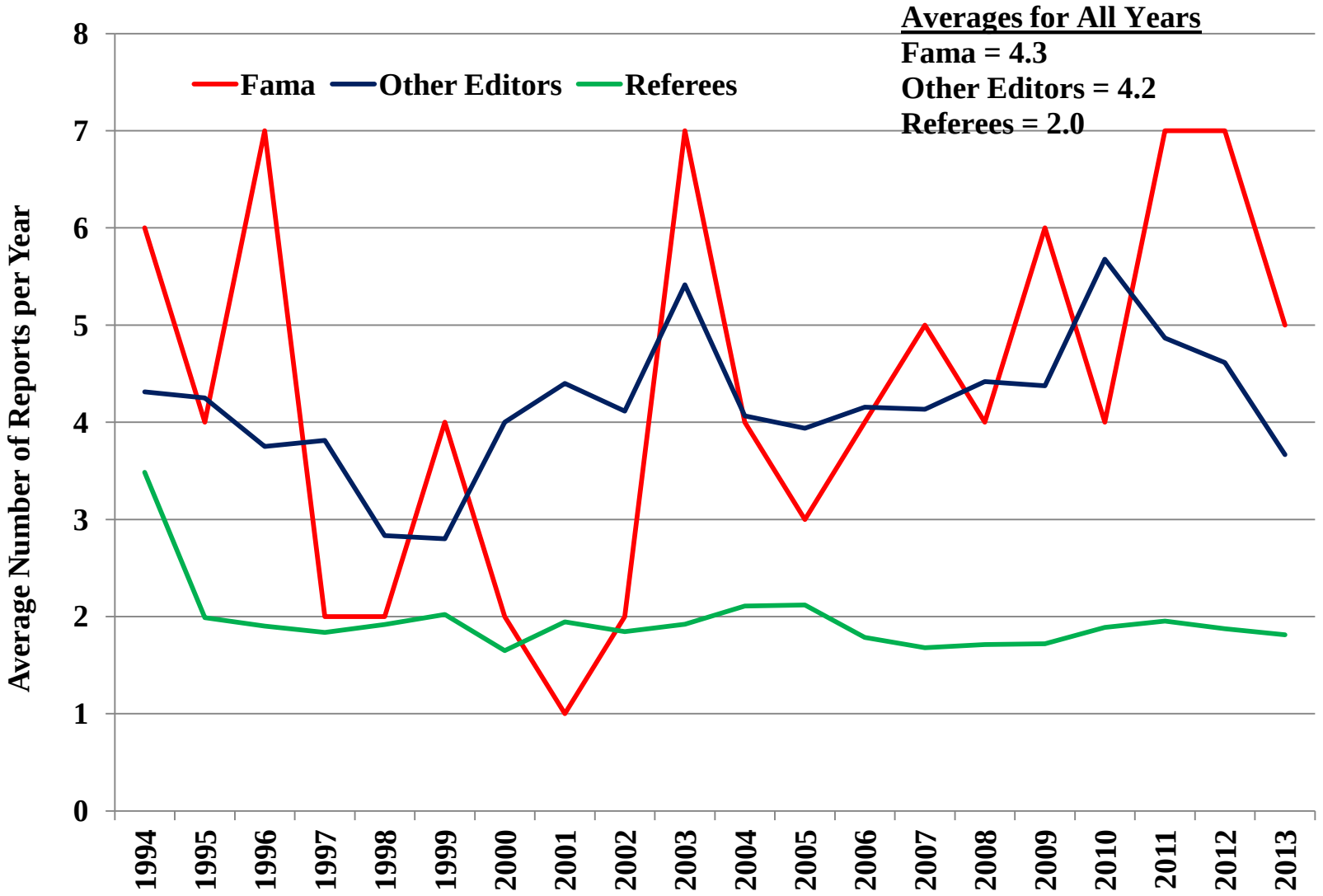

Fig. 9. Average Turnaround Time for *JFE* Referees' Reports, 1994-2013