

**Copernicus Calling: Finance and Marketing Collaboration can Accelerate
Behavioral Finance Theory Development**

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ABSTRACT

Finance literature and theory is dominated by the efficient market hypothesis ('EMH', Fama, 1970) and asset pricing models based on rational agents. Behavioral Finance literature, based in large part on Prospect Theory ('PT', Kahneman & Tversky, 1979), and in collaboration with Psychology academics, has made significant advances in identifying and explaining violations of the EMH. However, there is a significant gap in the literature that is retarding further advance of behavioral finance as an area of scholarly research. Finance literature is not yet well infused with Marketing theory, particularly as it relates to consumer choice and primary data gathering methodologies. Past attempts to catalyze closer interaction (Thaler, 1985, 2008) have not yet been successful. This review defines the gap and provides a path forward. A key area for future research and testable proposition are presented.

INTRODUCTION

The field of behavioral finance began in earnest with a 1979 paper in *Econometrica* published by Kahneman & Tversky (1979), which introduced Prospect Theory. One of the novel and central insights of Prospect Theory is that utility is related to narrowly framed change in wealth rather than total wealth. The implications of Prospect Theory and its predictions about human choice are sometimes in conflict with other economic models of choice by rational agents. Most famously, in the field of Finance, Prospect Theory at times conflicts with the Efficient Market Hypothesis of Eugene Fama (1970), the latter remaining as close to true north as there is on the Finance compass. Behavioral finance has continued to evolve and develop, largely as an empirical field often used to explain apparent anomalies and mis-pricing of securities or mis-behavior of agents in corporate finance. Key articles by Thaler (1985), DeBondt & Thaler (1985), Campbell & Cochrane (1999), Barberis & Thaler (2003), Fama & French (1993), and Barberis & Huang (2008) have become important foundations for modeling asset-pricing anomalies. PT is well used by practitioners in the investment management industry in the construction of portfolios for the purpose of realizing excess returns. However, as Thaler conceded in a discussion with Fama, sponsored by the University of Chicago Booth School (<https://youtu.be/bM9bYOBuKF4>), there has not been, and may not be, a “Copernicus moment” (1976) in the astronomy of asset pricing.

Nicolaus Copernicus is often credited with formulating the heliocentric model of the universe in 1543 (Sobel, 2012). Copernicus was a cross-disciplinary scholar, studying math, astronomy, philosophy, natural sciences, theology, Latin and, several additional languages. Copernicus also however delayed, for a long time, publishing his theory for fear of scorn as he expected heliocentrism to be viewed as an unconventional absurdity. Top Finance and Marketing journal editors and referees are likely to be somewhat more open minded than the astronomers and religious scholars of Copernicus’ day; however, multidisciplinary theory, particularly truly novel multidisciplinary theory, is not always met with open arms, as detailed in *Anatomy of a Failure* (Thaler, 2008). It is challenging to get an overtly multidisciplinary article published in a top journal, particularly by a scholar from another discipline.

Prospect Theory, or a close variant, has not yet supplanted the Efficient Market Hypothesis (“EMH”) and it is likely that it will not. Ray Ball (2009) delineates what the EMH theory does and does not say about asset prices, and applies it to the 2008 financial crisis. Despite discussed EMH theory limitations, Ball shows the EMH again to be elegant and flexible in understanding asset prices. Yet we ask the question, given the proliferation of asset pricing anomalies relative to the EMH, computing power, big data, and the search for active asset manager excess returns, why is there such a low expectation for a new revolution in behavior-based Finance theory? This paper submits that a low expectation follows from insufficient collaboration undertaken by Finance academics with other disciplines. Collaboration between Psychology, Economics and Finance has been vital. New, and different, cross-disciplinary linkages are required to develop new theoretical streams (Thaler, 2008)(Khaneman & Tversky, 1979).

There is a large cross-disciplinary gap in the Finance literature that this review undertakes to identify and bridge. This review will show the gap is the limited substantive

collaboration between Finance and Marketing colleagues. Marketing is necessarily concerned with predicting consumer behavior and consumer choice. The analytical framework of the Marketing discipline involves combining constructs from the behavioral sciences, economics and quantitative tools (Webster Jr. 1992). The potential for overlap with behavioral finance is clear. Yet this review will show that even when there is insight available from existing Marketing literature that would enhance theory in a Finance paper, it is almost always absent. The absence of Marketing theory in Finance literature is either due to lack of awareness, lack of effort, or it is intentional. It is not the focus of this paper to make any judgment as to why marketing references are absent from Finance literature. Rather the gap is identified and remedies offered for the purpose of improving the rate and impact of advances in behavioral finance theory.

To verify the perception of the gap regarding behavioral finance and any collaborations with Marketing consider the surveys of behavioral finance conducted by Barberis & Thaler (2003) and Baker & Wurgler (2011). The former cites no Marketing literature and the word marketing is not present in the entire manuscript. The latter, Baker & Wurgler (2011), provide an exceptional and detailed survey of the state of behavioral corporate finance literature as well as providing new directions for behavioral signaling and other open research questions. Most key current literature in Finance, Economics, Psychology, and Management is reviewed, but Marketing, Advertising and Consumer literature is not reviewed extensively. There is one Marketing journal reference out of the more than 300 citations, and that is Thaler's mental accounting and consumer choice (1985). As discussed, even though it was published in Marketing Science, Thaler's article (1985) is a behavioral economics article. Thaler's 2008 follow-up note on the 'failure' of his 1985 Marketing Science article "Mental Accounting and Consumer Choice" (1985) is instructive. Ironically, one of the express purposes in publishing in Marketing Science was to encourage colleagues in Marketing to 'join the fun' as he mixed economics and psychology. Of note, "Mental Accounting" was the most cited article in the history of Marketing Science and is one of the most often cited papers in the literature we review herein (Thaler, 1985).

In order to determine if this paper considers a gap confined to Finance and Marketing, we consider collaboration within the International Business discipline. A review of International Business literature by Trevino (2010) analyzed the percent of articles in top journals dedicated to International Business topics. Of the 29 top journals analyzed, Journal of Finance ranked 25th in terms of space devoted to IB issues, and Journal of Financial Economics ranked 22nd. In aggregate, about one in 50 articles in each journal was devoted to IB between the years 1996 and 2008. Trevino reported that Marketing journals dedicate space to international topics at a rate of approximately 1 in 17 articles. Marketing journals dedicate approximately three times more space to International Business issues than Finance journals. It appears that the gap in the Finance literature regarding collaboration with Marketing, may be a function of Finance academics literature review and theory development processes.

The remainder of the paper is organized into five sections as follows: 1) Literature Review by methodology, and summary data. 2) Discussion. 3) Conclusions. 4) Future research and conceptual collaboration guide. 5) References.

LITERATURE REVIEW – METHOD 1 - SYSTEMATIC

In order to be as comprehensive as possible this review was undertaken in two stages. The first method for presenting prior literature is a systematic review of 1009 articles from two of the top Finance journals during the period of 2009 to 2016. The systematic review was however conducted after the thematic review, so as not to bias the thematic review. In the systematic review a representative sample of Finance papers was obtained written subsequent to Thaler's assessment that collaboration between Finance and Marketing had been a failure. The choice of journals is based on two prior articles. The first is Trevino's choice of top journals to review (2010) to assess the dedication of space to International Business topics. The second article by Currie & Pandher (2011) ranks Finance journals on estimated quality. The first articles lists Journal of Finance ('JF') and Journal of Financial Economics ('JFE') as top journals. Currie & Pandher (2011) list JF and JFE as two of the top quality, A+ tier, Finance journals. Starting with JF, and then going as far as required with JFE, a review of 1009 article titles, abstracts and reference lists written since Anatomy of a Failure (Thaler 2008) is undertaken. The titles and topics of 541 JF articles were reviewed, written between 2009 and 2016, along with the topics of 468 JFE articles, which represents all articles published between 2013 and 2016. The article topics were examined as to whether or not there was a prima facie connection to Marketing literature. Once placed in the 'potential collaboration' bucket two operations were performed. First, the number and percentages of references taken from Marketing literature are calculated. Second the selected articles were divided into five topical areas as follows:

1. Trust, loyalty and habit formation.
2. Advertising and branding.
3. Culture, ethnocentrism and home bias.
4. Content analysis.
5. Behavioral bias.

Table 1: Systematic selection of finance articles with clear potential to be informed by marketing literature.

Author	Journal ¹	Year	Title or Interdisciplinary Issue	Author Field(s)	# References	# Marketing References	Total Citations ²	Citations per year ⁴
<u>Advertising and Branding</u>								
Gurun, Matvos, Seru	JF	2016	Advertising expensive adjustable rate mortgages.	Finance	44	0	45	45
Y Yuan	JFE	2015	Market wide attention, trading and stock returns.	Finance	34	0	50	25
Y Larkin	JFE	2013	Brand perception, cash flow stability, financial policy.	Finance	70	8	24	6
Liu and McConnell	JFE	2013	The role of media in corporate governance and capital allocation decisions.	Finance	27	0	80	20
Green and Jame	JFE	2013	Company name fluency, investor recognition, and firm value.	Finance	66	2	42	11
DH Solomon	JF	2012	Selective publicity and stock prices. Companies advertise good news, ignore bad.	Finance	42	0	150	30
Da, Engelberg, Gao	JF	2011	In search of attention using internet traffic.	Finance	55	0	837	140
Engelberg and Parsons	JF	2011	The causal impact of media in financial markets	Finance	28	0	437	73
Fang and Peress	JF	2009	Media coverage and the cross section of stock returns	Finance	36	0	807	101
<u>Behavioral Bias</u>								
Cortes, Duchin and Sosyura	JFE	2016	The role of sentiment in credit. Are approval rates higher on sunny days.	Finance	66	0	2	2
Hvide and Ostberg	JFE	2015	Social interaction at work. Investors buy stocks coworkers have bought.	Finance	62	0	15	8
Conrad, Kapadia, Xing	JFE	2014	Death and Jackpot: Why do individual investors hold overpriced stocks?	Finance	32	0	31	10
<u>Content Analysis</u>								
Jegadeesh, Wu	JFE	2013	Word power: A new approach for content analysis	Finance	16	0	91	23
Loughran and MacDonald	JFE	2013	IPO First Day returns, offer price revisions, volatility, and firm S-1 language	Finance	44	0	112	28
Mayew and Venkatachalam	JF	2012	The Power of Voice: Managerial Affective States and Future Firm Performance	Finance	78	1	164	33
Loughran and McDonald	JF	2011	When is a liability not a liability? Textual analysis, dictionaries and 10-K's	Finance	33	0	971	162
<u>Culture, Ethnocentrism and Home Bias</u>								
He and Manela	JF	2016	Information acquisition in rumor based bank runs.	Finance	43	0	35	35
Gompers, Mukharlyamov, Xuan	JFE	2016	The cost of friendship. Homophily of VC firm syndication (like deal with like).	Finance	38	0	61	61
Dimmock, Kouwenberg, et al.	JFE	2016	Ambiguity aversion and household portfolio choice puzzles.	Fin, Econ	66	0	47	47
Poole, Stoffman and Yonker	JF	2015	The people in your neighborhood	Finance	40	0	69	35
Cronqvist, Siegel, Yu	JFE	2015	Value versus growth investing: Why do different investors have different styles?	Finance	111	0	27	14
Eun, Wang and Xiao	JFE	2015	Culture and R2	Finance	73	0	36	18
Cronqvist, Siegel	JFE	2014	The genetics of investment biases	Finance	77	2	34	11
Solomon, Soltes and Sosyura	JFE	2014	Winners in the spotlight: Media coverage of fund holdings as a driver of flows	Fin, Mgmt	49	0	85	28
Huang and Kisgen	JFE	2013	Are male executives overconfident relative to female executives.	Finance	40	0	251	63
Gurun and Butler	JF	2012	Local media information bias, local advertising, and firm value.	Finance	55	2	187	37
Seasholes and Zhu	JF	2010	Individual Investor Local Bias	Finance	37	0	275	39
Chui, Titman and Wei	JF	2010	Individualism and Momentum around the world	Finance	70	2	665	95
Gomez, Priestly, Zapaterro	JF	2009	Keeping up with the Joneses	Finance	61	0	29	4
Van Nieuwerburgh and Veldkamp	JF	2009	Information immobility and the home bias puzzle	Fin, Econ	54	0	505	63
<u>Trust, Loyalty and Habit Formation</u>								
Giannetti and Wang	JF	2016	Trust influence on stock purchase decisions	Finance	39	0	35	35
van Binsbergen	JF	2016	Good-Specific Habit Formation and the Cross-Section of Expected Returns	Finance	34	1	14	14
Pevzner, Xie and Xin	JFE	2015	The role of trust in stock market reactions to earnings announcements.	Finance	71	0	57	29
Total or Average					1691	18	190	41

1. JF = Journal of Finance, JFE = Journal of Financial Economics

2. Source: Google Scholar

3. Citations per year is per number of years since published including the year of publishing.

In total, with the systematic method, thirty-three articles were found with topics ripe for collaboration with Marketing. Of those 33 collaboration candidates, 17 of the thirty-three articles were from JF publications (for a rate of 3.0%) and 16 of the articles were from JFE publications (3.6%). Of the thirty-three articles reviewed with the systematic method, there are a total of 18 citations from marketing, consumer or advertising journals. One Finance article had eight citations, four articles had two citations, and two articles one. 26 of 33 (79%) articles in the collaboration candidates bucket had zero citations from marketing, advertising or consumer literature. In aggregate 1% of total references were from the Marketing literature.

The largest category of overlap, 14 of 33 articles, related to the category identified as culture, ethnocentrism and home bias. Chui, Titman & Wei (2010) use the most relevant articles to inform culture-oriented theory. Nakata & Sivakumar (1996) and Aaker & Williams (1998) are key drivers of Marketing theory on national culture, and cross-cultural appeals, respectively. Chui et al (2010) also deploy several other gold standard culture and historical ties articles to fill out their theory. The most prolific use of Marketing literature is by Yelena Larkin (2013). As shown in table 2, Larkin’s (2013) study looks at brand perception and value and uses eight advertising and branding oriented articles from Marketing literature to shape the theory of the paper.

Table 2: Marketing literature cited in systematically chosen finance papers.

Author	Journal ¹	Year	Construct or component of marketing theory deployed	Finance article citing	Author Field(s)	Marketing Article Citations ²	Citations per year ³
<u>Advertising and Branding</u>							
Bronnenberg, Dhar, Dube	JM	2007	Importance of local reputation over national branding concept.	Y Larkin (2013)	Marketing	83	8
Dodds, Monroe, Grewal	JMR	1991	Effect of price and brand on consumer perception of quality.	Y Larkin (2013)	Marketing	6381	245
Mizik and Jacobson	JMR	2008	Brand perception and linkages to stock returns.	Y Larkin (2013)	Marketing	269	30
Mizik and Jacobson	JMR	2009	Empirical model of value from brand attributes.	Y Larkin (2013)	Marketing	94	12
Rao and Monroe	JMR	1989	Further evaluation of in store keys to quality perception.	Y Larkin (2013)	Marketing	1869	67
Rao, Agarwal and Dahlhoff	JM	2004	Benefits of various branding strategies.	Y Larkin (2013)	Marketing	490	38
Romaniuk, Sharp, Ehrenberg	AMI	2007	The role of differentiation in brand strategies.	Y Larkin (2013)	Marketing	45	5
Starr and Rubinson	JMR	1978	Loyalty segmentation and purchase decisions.	Y Larkin (2013)	Mktg, Mgmt	70	2
Bao, Shao and Rivers	JAR	2008	Process of creating new brand names.	Green and Jame (2013)	Marketing	43	5
Labroo, Dhar, Schwarz	JCR	2008	Relating customer fluency and liking of a product.	Green and Jame (2013)	Mktg, Psych	190	21
<u>Content Analysis</u>							
Han and Nunes	ACR	2010	Consumer signalling through conspicuous consumption.	Mayew & Venkatachalam (2012)	Marketing	1	0
<u>Culture, Ethnocentrism and Home Bias</u>							
Simonson and Sela	JCR	2011	The genetics of investment biases	Cronqvist, Siegel (2014)	Marketing	51	9
R Thaler	MS	1985	Mental accounting and consumer choice.	Cronqvist, Siegel (2014)	Finance	5547	173
Kimbrough and McAlister	JM	2009	The link between marketing actions and firm value.	Gurun and Butler (2012)	Fin, Mktg	26	3
Srinivasan and Hanssens	JMR	2009	The link between marketing actions and firm value.	Gurun and Butler (2012)	Marketing	468	59
Nakata and Sivakumar	JM	1996	National culture and new product development.	Chui, Titman and Wei (2010)	Marketing	699	33
Aaker and Williams	JCR	1998	Making emotion based appeals across different cultures.	Chui, Titman and Wei (2010)	Marketing	584	31
<u>Trust, Loyalty and Habit Formation</u>							
Guagdani and Little	MS	1983	Understanding brand loyalty and consumer choice.	van Binsbergen (2016)	Marketing	2142	63
Total or Average						1,058	45

1. JM = Journal of Marketing, JMR = Journal of Marketing Research, JCR = Journal of Consumer Research, MS = Marketing Science, AMI = Australasian Marketing Journal, ACR = Advances in Consumer Research, JAR = Journal of Advertising research.

2. Source: Google Scholar

3. Citations per year is per number of years since published including the year of publishing.

4. Han and Nunes paper related to a more heavily cited 2010 paper in JM: Han, Y. J., Nunes, J. C., & Ortes, X. (2010). Signaling status with luxury goods: The role of brand prominence. Journal of Marketing, 74(4), 15-30.

LITERATURE REVIEW – METHOD 2 - THEMATIC

The second method employed to review the current state of Marketing and Finance collaboration is a thematic review of the Finance papers written on behavioral topic with prima facie linkages to Marketing literature. The thematic review has been grouped along the first four topics used in the systematic review: 1) Trust, loyalty and habit formation, 2) Advertising and branding, 3) Culture, ethnocentrism and home bias, and 4) Content analysis. A different fifth category is added in the thematic review: luxury goods. Luxury goods replaced the behavioral bias category

from the systematic method. Table 3 summarizes the 24 articles included in the thematic phase of the literature review.

Table 3: Thematic selection of finance articles with theory or topical overlap to marketing literature.

Author	Journal ¹	Year	Title or Interdisciplinary Issue	Author's Area(s) ⁴	# References	# Marketing References	Total Citations ³	Citations per year ¹	
<u>Advertising and Branding</u>									
Barber and Odean		2008	RFS	How retail investors filter stocks to a potential purchase set.	Finance	32	0	2323	258
Demers and Lewellen		2003	JFE	Interaction of IPO process, website traffic and future revenue.	Finance	33	0	197	14
Fehle, Tsyplakov and Zdorovstov		2005	EPM	Excess return from super bowl ads.	Finance	40	1	80	7
Frieder and Subrahmanyam		2005	JFQA	Retail investors may buy stocks with widely advertised products.	Finance	60	4	288	24
Gruillon, Kanatas and Weston		2004	RFS	Advertising influence on number of investors and liquidity.	Finance	48	0	559	43
Jain and Wu		2000	JF	Mutual fund advertising and fund flows.	Finance	22	0	552	31
Kim and Meschke		2014	apfl.org	Do CEO interviews on CNBC impact stock prices?	Finance	59	0	36	12
Reuter and Zitcewitz		2006	QJE	Advertising and bias affecting mutual fund news and ratings.	Fin, Econ	36	0	276	25
Simon and Sullivan		1993	MS	Using market value of firm to estimate brand equity.	Economics	58	17	1924	80
<u>Luxury Goods</u>									
Art-Sahalia, Parker and Yogo		JF	2004	Upward wealth shocks, luxury good purchases and covariance with equities.	Fin, Econ	52	0	323	25
Diatnik and Steinhart		JMR	2015	Stock purchase evaluation relative to luxury good purchase process.	Fin, Mktg	59	20	32	6
<u>Content Analysis</u>									
Gurun, Matvos and Seru		JF	2016	Analyzed advertising content for ARM mortgages.	Finance	36	0	45	45
Larcker and Zakolyukina		JoAR	2012	Truthful and deceptive conference call content.	Finance	65	0	202	40
<u>Culture, Ethnocentrism and Home Bias</u>									
Eun, Wang and Xiao		JFE	2015	Culture and R2	Finance	73	0	36	18
Gurun and Butler		JF	2012	Local media information bias, local advertising, and firm value.	Finance	55	2	187	37
He and Manela		JF	2016	Information acquisition in rumor based bank runs.	Finance	43	0	35	35
Huberman		RFS	2001	Customer of local phone companies buy that local stock over others.	Finance	42	0	1614	101
<u>Trust, Loyalty and Habit Formation</u>									
van Binsbergen		JF	2016	Good-Specific Habit Formation and the Cross-Section of Expected Returns	Finance	34	1	34	14
Bohnet and Zeckhauser		JEBE	2004	Trust and risk investing in companies and with CEOs.	Economics	38	0	698	49
Campbell and Cochrane		JPE	1999	Modeling historical stock prices based on consumption data.	Finance	51	0	4110	228
Giannetti and Wang		JF	2016	Trust influence on stock purchase decisions	Finance	39	0	35	35
Guiso, Sapienza and Zingales		JF	2008	Low trust and high trust individual participation in stock markets.	Finance	57	0	1001	111
Pevzner, Xie and Xin		JFE	2015	The role of trust in stock market reactions to earnings announcements.	Finance	71	0	57	29
Ravn, Schmitt-Grohe, Uribe		RES	2006	Habit formation across varieties of goods.	Fin, Econ	25	0	37	3
Total or Average						936	45	672	55

1. JF = Journal of Finance, JFE = Journal of Financial Economics, RFS = Review of Financial Studies, JEBE = Journal of Economic Behavior and Organization, JPE = Journal of Political Economy, JMR = Journal of Marketing Research, EPM = European Financial Management.

2. continued, JFQA = Journal of Financial and Quantitative Analysis, JoAR = Journal of Accounting Research, QJE = The Quarterly Journal of Economics, MS = Marketing Science.

3. Source: Google Scholar

4. Citations per year is per number of years since published including the year of publishing.

5. Finance includes accounting.

Trust, Loyalty and Habit Formation

Trust is a subjective evaluation and assessment by one party of the cost of a possible future betrayal by another party (Bohnet & Zechauser, 2004). Trust is an important construct in the relationship between a company and its investors (customers), as well as its potential investors (customers). Trust can be expressed by a long-term holding of a particular stock, repeatedly investing with a particular CEO, or, in the consumer context, repeat purchase of a particular product or service (e.g. 'habitual purchasing'). Key Marketing literature on the trust construct could have enhanced theory development in the reviewed papers. A behavioral finance academic could focus on trust-based articles in the Marketing literature by Morgan & Hunt (1994), Geyskens, Steenkamp & Kumar (1998), and Doney & Cannon (1997) as building blocks for future trust in Finance-oriented literature reviews.

Corporate fraud damages trust for investors or potential investors. Gianetti & Wang (2016) focus on corporate fraud and the awareness of it by a particular population, undermining trust in a general sense in financial markets. The impact is to reduce household participation in the equity market. Participation in this study was coded as zero or one depending on if the household owned any public equities, mutual funds or investment trusts. Awareness of fraud damaged the long-run ability of households to earn sufficient returns for retirement and also was associated with a higher capital cost for firms. The key point of this article for the purposes of this study is the break in trust between individual investors and corporate equity issuers. That a break in trust reduces purchasing (i.e. consumption) of stocks is a concept central to marketing theory and prior literature. In addition to the aforementioned trust studies, Chow & Holden (1997) describe trust as a moderator in understanding loyalty of consumers. Gianetti & Wang's (2016) definition of fraud was based on 'financial misrepresentation cases in the Federal Securities Regulation (FSR) database'. The sample size was 704, over 20 years ending in 2009. The theory a priori was that a higher incidence of fraud in company-headquartered states will be associated with a lower exposure to equity. The data presented supported the hypothesis. Trust matters in the purchase decision of equities.

Guiso, Sapienza & Zingales (2008) develop the concept of trust in stock markets further by focusing on two areas. First, differences in trust show differences in the perception of the probability one will be cheated. Low-trust individuals participate less in the stock market. Second, and somewhat conversely, it may also be that a high level of trust increases risk tolerance. Marketing literature on consumer trust and brand trust is absent from the theory development and 56 references listed.

Habitual, or high loyalty, purchases is an embedded construct within Binsbergen (2016) - firms that sell individual varieties of goods with high consumer habit formation. These goods typically have low elasticity of demand and high repeat purchase characteristics. It is shown that high habit goods sellers have low expected stock returns, low betas and low volatility. The primary mechanism is suggested to be a low susceptibility to shocks because of the high repeat purchase behavior and predictability of its customers. The paper investigates, in some detail, household purchasing behavior and habit formation. Binsbergen (2016) introduces the loyalty variable literature into the theory of the paper through mention of the work of Guadagni & Little (1983). Binsbergen (2016) indicates in the paper that it is, as far as his literature review revealed, the first

investigation of goods-specific consumer habits and stock returns. Ravn, Schmitt-Grohe & Uribe (2006) looked at the issue from a macroeconomic perspective using the terminology ‘deep habits.’ Behavioral finance research that incorporates consumption habits into asset pricing models is part of a broader, rich vein of financial research, which started with Cochrane & Campbell (1999).

Advertising and Branding

Advertising studies are not difficult to find in the Finance literature. There is available data from industry sources on spending, share of voice and internet search. The data are then relatively simple additions as independent variables (‘IV’s’) in empirical studies. Perhaps as a result of the greater quantum of Finance literature on advertising and branding, there are more collaborative pieces in this category. An example of cross-disciplinary collaboration occurred in a study of shareholder value that may or may not be created through advertising spending. Grullon, Kanatas & Weston (2004) conduct a collaborative cross-disciplinary study investigating whether advertising expenditures influence the number of shareholders a firm may have, the types of shareholders, and if stock liquidity is higher or lower. The finding with respect to types of shareholders suggested institutional investors, which may be expected to be at least as rational or more rational (i.e. less prone to mispricing) than individual investors, were shown to be influenced by advertising spending.

Advertising promotes product benefits and general awareness of a product. Frieder & Subramanyan (2005) add a related behavioral construct to how investors form portfolios. That is how stocks get filtered down to a potential purchase set. Individual investors are shown to buy stocks of companies that sell common, easily understood, or widely advertised products. This individual investor behavior has a crowding out effect on institutions. Institutions appear not to exhibit this bias, rather institutional holdings are tilted to larger and lower total volatility stocks. Frieder & Subramanyan (2005) cite three important marketing papers, which will be discussed following. Hoch & Deighton (1989) added to understanding on how investors may learn about a company and its products. Hoch & Deighton (1989) theory and empirical analysis show that consumers learn about products both from advertising and experientially. Kent & Allen (1994) delineate the importance of pre-existing brand recognition with respect to how well recalled an ad may be. The third referenced Marketing literature paper is perhaps most relevant to both Finance and Marketing academics. Lane & Jacobson (1995) measure stock market reactions to brand extension announcements, examining whether brand extensions create or destroy equity value. The conceptual model included key corporate finance and capital market linkages. The conclusion is that brand extension is not positive for equity value because of the trade-offs inherent in leveraging brands. Overall the Frieder & Subramanyan (2005) paper cites six relevant Finance articles (20% of the total reference list) informing theory and methodology. It is also notable that while both authors are marketers, the dependent variable in the study is the change in stock price.

A stand out collaborative effort on the value of brands was undertaken by Simon & Sullivan (1993). The authors estimate how much a company’s brands are worth. The novel element of the paper uses financial market factors to determine how much brands are worth based on how much profit individual brands generate. The study is an empirical one that tracks the value of Coke and Pepsi as brands over a five-year period, banding the variation in the value

resulting from marketing decisions. This is a true interdisciplinary study as it synthesized and integrated with theory from Fama's efficient market hypothesis (1970), accounting, macro- and micro- economics, and strategy. Having already been cited 1911 times according to Google Scholar, the Simon & Sullivan (1993) paper shows the potential impact of cross collaboration between Finance and Marketing scholars. Of the 57 total citations, 16 were marketing oriented, and nine were from the core Finance literature.

Fehle, Tsyplakov & Zdorovstov (2005) undertook to contribute to behavioral finance research by showing that previously announced Super Bowl advertising, once executed during the event, could have a positive effect on the stock price of advertisers. This effect, if true, may be an anomaly relative to the Efficient Market Hypothesis (Fama, 1970). Fehle et al. (2005) showed a small (45 basis point) positive impact for recognizable brands advertising more than an average advertiser, during the Super Bowl. The process studied is part of the category of financial research investigating advertising as a channel for companies to communicate with current and potential investors. Establishing significant associations or causality in advertising, mood, attention, and the efficacy of Super Bowl ads in general on brands is certainly at the heart of Marketing expertise. One of forty citations in Fehle et al. (2005) is taken from the Marketing literature.

Kim & Meschke (2014) explored a similar equity market opportunity by measuring the abnormal share price impact of CEO interviews on CNBC. In an efficient market, with SEC regulation FD in place, a previously announced CEO appearance on CNBC should not be expected to provide opportunity for abnormal returns. Analyzing the information content of the interviews with Marketing colleagues may yield a finer-grained understanding as to whether there was new information content in the interviews that account for the abnormal returns. As with several of the articles reviewed, there is one Marketing-oriented journal in the reference list out of fifty-four citations.

Demers & Lewellen (2003) explored the positive impact on website traffic for an Internet business undertaking an IPO. The marketing benefits can then create a positive feedback loop to additional equity value from the incremental website traffic. In some cases website companies intentionally underpriced IPO's in order to attract attention around first-day moves, incremental traffic and market share, and thus create incremental equity value. The literature has not established a statistically significant association between IPO underpricing and subsequent excess revenue growth. The data for the Demers & Lewellen (2003) study was from Nielsen for Internet traffic and the Center for Research in Security Prices for stock price data. Of the 33 citations in the article, none were obtained from marketing, consumer or advertising journals. All theory development, constructs and scales came without the aid of Marketing literature or constructs.

Barber & Odean (2008) deal with the question of how individual investors (i.e., retail) work their choice sets for stock selection from approximately 7000, down to 100 or less. It is assumed the stocks that may be chosen must somehow have come into the consciousness of the individual investor. The attention is directed to a stock based on either large price moves, high volume, or higher than average news flow. One of those three factors is viewed as a type of advertising for a stock and induces purchase decisions and a rate higher than explained by other

factors, all else being equal. Attention-based decision-making is also indicated by the authors to impact consumer purchases. The natural discussion of marketing theory about purchase sets and consumer decisions under high attention was not undertaken. Zero of 32 citations were from the Marketing literature.

Reuter & Zitzewitz (2006) looked at whether ads influence news editors, such that advertising creates bias in the financial media. The paper considers if coverage of mutual fund companies in personal finance magazines and newspapers is influenced by whether or not the fund companies buy advertising in the journals. Again this is clearly material within the mainstream if Marketing literature. There were 39 total references in the piece, but none were from marketing, advertising or consumer journals. Additional Finance papers, such as that by Jain & Wu (2000), also consider the effects of mutual fund advertising without the aid of any Marketing literature.

Culture, Ethnocentrism and Home Bias

Investors show an irrational propensity to be ethnocentric in the Finance literature. Huberman (2001) showed this empirically with a study demonstrating that the customers of a regional telephone company tend to own the stock of that particular telephone company, rather than a comparable regional telephone company. This could be considered a specific flavor of ethnocentricity. International marketers are very familiar with ethnocentrism. Shimp & Sharma (1987) developed a useful and valid scale for measuring ethnocentrism, the CETSCALE. It is a cross-sectional study of a firm's advertising dollars as the IV influencing dependent variables ('DV's') in models estimating the total number of shareholders, the number of institutional holders, and stock liquidity. Controls in the Huberman (2001) study include market cap and the age of the firm. It would have been prudent to recommend including revenue as an additional control variable. The paper does cite several Finance home-bias papers but not any Marketing literature. As a result the validity of the empirical results can be questioned.

The rate of diffusion of information and the influence of culture is a familiar construct in international marketing. Wills, Samli & Jacob (1991) explain how to address culture and the rate of information absorption in detail. In the Finance literature, He & Manela (2016) discuss the process for information acquisition in rumor-based bank runs. Specifically the paper addresses how information about bank liquidity is acquired by customers, and its contagion effects. Clearly culture could be expected to play a location-specific mediating role in bank run contagion. The constructs of Wills et al (1991) are not discussed.

Omitted variable bias is a significant challenge for any empirical study. Eun, Wang & Xiao (2015) claim that country culture is inappropriately omitted across a broad range of studies in the Finance literature. The evidence offered is co-movement in stock prices across similar cultures. Hofstede (1980 and 2001) and LaPorta (1998) are well used in the literature review, theory and hypothesis construction. While the Eun et al (2015) article is well informed outside of the Finance literature, no use of cultural constructs and methodology available in the Marketing literature were identified. Here a discussion of market clustering, learning, and information diffusion could have been used for an additional model, as the appropriate cultural variables are sought to deal with omitted variable bias. Relevant articles are presented in table 4 following. Another example of a cultural construct is found in Pevzner, Xie, & Xin (2015) "*When firms*

talk, do investors listen?” The level of trust present generally in a particular society has an association with an investor’s perceptions on corporate news releases. More trusting societies are more likely to believe what is in a press release. The effect was particularly true in poorer, less educated societies.

Content Analysis

Content analysis is a key component of the social sciences. Finance literature, and particularly the behavioral stream, has recently taken it up in force, attempting to decode messages in written, verbal and non-verbal corporate communications. The seminal article on the topic is by Kassanjian (1977) in the **Journal of Consumer Research**. Content analysis methods have been updated over time, including a recent handbook by Neuendorf (2016). Gurun & Butler (2012) undertook an analysis of local media reporting regarding local companies. The analysis showed local bias in reporting. Variables in the empirical analysis included TSN Media Intelligence for ad expenditures at the brand level and ad expenditures in the last reported financial statements. Two marketing citations (approximately 4% of total citations) were deployed to inform the analysis. However, the validity of the content analysis and measurement of advertising could be questioned due to the lack of use of standard and valid measures provided in the Marketing literature.

Content analysis was the basis for a 2016 empirical study by Gurun, Matvos, & Seru (2016). The subject of the analysis was the advertisements of expensive mortgages. The authors undertook a content analysis of 37,432 print and direct mail campaigns. The authors asked the question whether or not advertising is causing consumers to make higher cost (i.e., bad choices) decisions in selecting mortgages. The systematic investigation focused on adjustable rate mortgages and concluded that reset rates are generally hidden. The study also highlighted the importance of Internet search advertising in mortgage origination. However, out of 36 listed references, none came from marketing, advertising or consumer journals; despite the fact that the word advertising appears 402 times in the article.

Conference calls are a common method firms use to communicate important information to investors and the financial press. Larcker & Zakolyukina (2011) analyzed conference call terminology and labeled calls as either truthful or deceptive. Resultant short portfolios of deceptive companies produced notable excess returns. The empirical analysis focused on linguistic elements of the earnings calls. The research was informed collaboratively by linguistic research. The authors used at least six key sources from linguistic and deception analysis literature. The collaboration with linguistics increases the strength of the conclusions. There may be further opportunity to refine scales with the aid of Marketing or advertising literature related to truth in advertising, or false advertising.

Luxury Goods

Luxury goods has been well addressed with collaborative research, with important avenues for future studies. Collaboration by Disatnik & Steinhart (2015) helped fill a gap in understanding how stock investors might look at a stock purchase similarly to a luxury-branded product purchase. Key themes addressed include habit formation as to how a particular item stays in a purchase set. The equity risk premium puzzle, a key anomaly in Finance literature relative to the risk-adjusted returns of equities, may also be addressed with luxury constructs. The puzzle posits

that equity returns are higher than would be predicted by a rational investor risk model such as the efficient market hypothesis (Fama, 1970). Ait-Sahalia, Parker & Yogo (2004) in their paper describe how upward wealth shocks for already high wealth households result in incremental consumption of luxury goods. The consumption of luxury goods exhibits lower marginal utility, even at relatively lower levels of consumption. Further, the purchase of luxury items co-varies more with equities than aggregate measures of consumption. The difference in utility for luxury goods and its covariance with stock returns has important implications for the equity risk premium puzzle. Marketing literature contains significant theoretical insights with respect to luxury goods and the marginal utility of the highest wealth consumers. There is no mention of marketing or advertising in the article, nor references to the Marketing literature.

DISCUSSION

Future Finance literature will benefit from a base list of foundational Marketing literature that will help provide additional insight for the formation of novel behavioral finance oriented theory. It can also assist in identifying mediators and moderators for established theory such as the Efficient Market Hypothesis or Prospect Theory. We assist the advance of behavioral theory with this article in at least two ways. First, table 4 includes a list of relevant citations across four categories of research that were reviewed: 1) Advertising and Branding, 2) Content Analysis, 3) Culture, Ethnocentrism and Home Bias, and 4) Trust, Loyalty and Habit Formation. Second, we discuss a process flow for more complete behavioral finance literature reviews.

Table 4: Key marketing literature relevant for future Finance theory development.

Author	Journal ¹	Year	Title or Interdisciplinary Issue	Total Citations ²	Citations per year ³
<u>Advertising and Branding</u>					
Hoch and Deighton	JM	1989	Consumer learning as a four stage experience based process.	1085	39
Kent and Allen	JM	1994	Understanding advertising memorability and effectiveness.	642	28
Lane and Jacobson	JM	1995	Brand extension impact on stocks prices.	596	27
Luo	JM	2008	Marketing spend around IPO's.	66	7
<u>Content Analysis</u>					
Kassarjian	JCR	1977	Content analysis in consumer research.	2462	62
Neuendorf	Book	2016	Content analysis guidebook.	7887	7,887
Samiee and Jeong	JAMS	1994	Content analysis, particularly with international management teams.	203	9
Rust and Coolil	JMR	1994	Reliability measures for qualitative data.	671	29
<u>Culture, Ethnocentrism and Home Bias</u>					
Hofstede	JIBS	1983	Differences in culture and values across 50 countries.	3218	95
Nakata	Book	2009	Updated cultural frameworks.	76	10
La Porta, Lopez-de-Silanes, Shleifer	JPE	1998	Law and finance across 49 countries.	18293	963
Shimp and Sharma	JMR	1987	Developing a scale to measure ethnocentrism.	2502	83
Wills, Samli & Jacob	JAMS	1991	Understanding behavior and culture construct including learning and context.	152	6
Boyacigiller, Adler	AMR	1991	Avoiding validity issues and inappropriate use of scales across cultures.	1236	48
<u>Trust, Loyalty and Habit Formation</u>					
Doney and Cannon	JM	1997	Trust construct in buyer seller relationships.	7973	399
Geyskens, Steenkamp and Kumar	IJRM	1998	Modeling economic and non-economic satisfaction.	1001	53
Guadagni and Little	MS	1983, 2008	Method to operationalize UPC scanner panel data.		
Morgan and Hunt	JM	1994	The commitment-trust construct in marketing.	21694	943
Total or Average				4,103	629

1. JM = Journal of Marketing, IJRM = International Journal of Research in Marketing, MS = Marketing Science, JIBS = Journal of International Business, JPE = Journal of political economy, JMR = Journal of Marketing Research.

2. continued. JAMS = Journal of the Academy of Marketing Science, MS = Marketing Science

3. Source: Google Scholar

3. Citations per year is per number of years since published including the year of publishing.

Trust, Loyalty and Habit Formation - Academics are always on the hunt for additional data for empirical studies. Such data and empirical methods are provided by Guadagni & Liitle (1983, 2008). The Guadagni & Liitle (1983) paper is second in terms of citations in the history of Marketing Science (to Thaler, 1985). One of the keys to the 1983 Guadagni & Liitle paper popularity was its operationalizability, and that both retail and marketing industry consultants used its methods regularly. This was one of the first papers to use UPC scanner panel data as a first hand look at consumer behavior and the model had some predictive power. Guadagni & Liitle (1983) introduce a loyalty variable called 'Hooked-ness'. Guadagni & Liitle (1983) show high loyalty and hooked-ness associated with higher valuation and a lower cost of capital. Guadagni & Liitle (1983, 2008) may serve as an empirical base for joint Marketing and Finance theory to make generalizable conclusions about predicting consumer choice from rational deviations in investor behavior. One limitation of the study is the use of macroeconomic data to look at secondary household expenditure data and the categorization of goods.

Content analysis – Content analysis done to date in Finance literature has validity questions to deal with. The coding of text, assessment of language tone and the information content of advertisements is being done on a one-off basis, or typically uses the precedent of one or two Finance papers and related language articles. The standard for content analysis in

Marketing literature is Kassirjian (1977), and it should be deployed to inform relevant behavioral finance studies. More recently Neuendorf (2016) produced a detailed ‘how to’ book on content analysis. It is already popular, being cited 7887 times in its first year in print according to Google Scholar. Collaboration between Marketing and Statistics academics, Rust & Cooil (1994), resulted in the development of a reliability measure for qualitative judgments known as the PRL (proportional risk of loss).

Culture, Ethnocentrism and Home Bias – Hofstede (1983) and La Porta (1998) are well used in the Finance literature. However, the former needs to be updated with current thinking on culture including work by Nakata (2009). Shimp & Sharma (1987) developed a valid scale to measure ethnocentrism that has applicability in behavioral finance studies. Ethnocentrism has great potential to shed light on certain elements of investor bias. Validity issues and emic versus etic measurement errors occur in the Marketing literature as well as Finance (Boyacigiller & Adler, 1991), however, the tendency toward more precise conclusions in Finance point to the urgency of using correct and consistent cultural scales.

Advertising and Branding – Finance has developed a strong interest in advertising and its effect on returns and messages. 18 of the 57 articles included in the systematic and thematic reviews are from the advertising and branding category. Indeed it would have been possible to solely review the literature of either the effect of Super Bowl advertising on stock prices or the advertising and media strategy around IPOs. However, as with content analysis, the methodology used to assess advertisements is not consistent across Finance literature. Frieder & Subramanyan (2005) cite three building block components of the Landor Image Power Survey data that can be deployed in future work. The components are a brand quality perception variable called ESTEEM, a brand familiarity term SHAREOFMIND, and an overall brand strength term called IMAGE POWER. Lane & Jacobson (1995) study whether brand extensions create or destroy equity value. The Lane & Jacobson (1995) conceptual model included key corporate finance and capital market linkages. The conclusion was that brand extension is not positive for equity value because of trade-offs in leveraging brands. Hoch & Deighton (1989) identify a four-stage process about how investors may learn about a company and its products. The four stages are hypothesizing, exposure, encoding and integration. Kent & Allen (1994) delineate the importance of pre-existing brand recognition with respect to how well recalled an ad may be. New product information associated with known brands had higher recall than for lesser-known brands.

The second way we assist theory development is via a conceptual process flow for improving literature reviews in Finance papers (Figure 1). Scholars would first consider if the primary theory underpinning the motivation for a study is neo-classical or behavioral. If neo-classical then research questions would revolved around the EMH (Fama, 1970) and follow on models such as the q-factor model. Neo-classical models would consider the relevant marketing literature for moderators, which may influence the significance of identified risk factors. Studies based on PT would seek to identify marketing construct mediators. The marketing construct or variable in a behavioral model may itself be the previously sought or misidentified risk factor in a multi-factor model. We propose a specific research propositions following figure 1. The issue of how to arrive at new research questions and hypotheses is more relevant than the actual proposition herein. It is clear the conceptual process flow of figure 1 will lead to a new

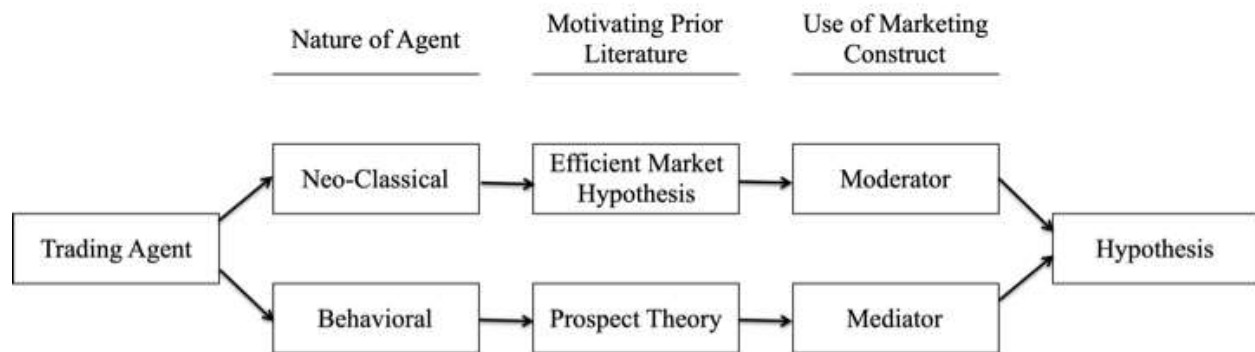
collaborative research opportunities.

FUTURE RESEARCH AND RESEARCH PROPOSITION

To understand the power of future collaboration, consider the marketing construct of consumer ethnocentrism. Future behavioral finance studies may extend Shimp & Sharma’s (1987) CETSCALE (Consumer Ethnocentrism – Scale) for use in asset pricing models influenced by ethnocentrism and home bias. The original scale was developed to consider the ethnocentric biases of U.S. consumers leading to purchase of American-made products. The scale included 17 items. The methodology employed in the development of the CETSCALE can be used to develop an investor scale of ethnocentrism and home bias. The resultant improvement in qualitative data measurement and reliability would aid in empirical testing of marketing-linked behavioral finance constructs with respect to asset returns.

Conclusions that arise out of the integrated theory development and hypothesis testing may lead to a more replicable, valid and complete picture of behavioral investor biases. Testing and identification of behavioral biases influencing asset pricing may identify risk factors heretofore largely empirically attributed to risk factors including size, valuation, momentum, investment and returns (Fama & French, 1993)(Carhart, 1997)(Hou, Xue & Zhang, 2015).

Figure 1 – Conceptual process flow of integrated Finance and Marketing Hypothesis Development



Research Proposition - List (2004) shows that the experience influences whether trading behavior of agents exhibits an endowment effect or conforms more to neo-classical expectations. The endowment effect has been studied and shown to be associated with the profits realized from momentum strategies (Grinblatt & Han, 2005). However, prior marketing theory indicates the rate of process of updating reference prices may be linked to marketing construct of cultural of information. Specifically Wills, Samli & Jacobs (1991) show scholars how to address culture by considering a framework of involvement, learning, context and diffusion. Theory from List (2004), Grinblatt & Han (2005) and Wills, Samli & Jacob (1991) motivate research proposition 1 which is based on the conclusion from following figure 1 that cultural context mediates momentum factors.

RP1: Short-term momentum will be priced in lower involvement, high diffusion cultures, and will not be priced in high involvement, low diffusion cultures.

CONCLUSION

A clear gap in the Finance literature is identified with respect to the need for collaboration and synthesis of relevant Marketing literature. The systematic segment of this review showed that Finance scholars are omitting relevant marketing literature from their publications. Second, marketing constructs that are considered are deployed in an ad-hoc manner with validity issues relating to operationalization of prior methods and scales. Third, there is no evidence that would show that the rate of collaboration between Marketing and Finance is increasing.

As to whether or not Finance academics should care, and whether the gap should be filled, it is relevant to consider the 2015 special issue in *JFE* on ‘cultural finance.’ In an introductory article, Luigi Zingales (2015) posits Finance is the most fertile field of study in which to collaborate. The opportunity is in part a function of the interaction between societal culture and corporate culture. Zingales’ sentiment is noteworthy. In order to accelerate theory development a better understanding of financial markets and corporate finance practices, Finance scholars should begin to collaborate with marketing scholars on behavioral and cultural constructs of mutual interest. A new stream of collaboration would follow fruitful collaborations with all Economics disciplines. Just as it is difficult to imagine Finance literature without the impact of economists like Engle (ARCH/GARCH, 1982) and Psychology academics like (Kahneman and Tversky, 1979), it will some future day be normal course for marketing constructs to be used to inform asset pricing theory and models.

The catalyst to fulfill the potential for a collaboration between Marketing and Finance will come from editors and referees. The critical role of editors and referees is recounted by Thaler in his 2008 follow-up note on the 1985 *Marketing Science* article. The referees at the time of course did not know ex ante the paper would be the most cited article in *MS* history (and it may not have altered reception). The fundamentals of the article, though written by a behavioral economist, explored consumer behavior from a mental accounting perspective. The proposition was that apparently irrational behavior occurs in exchanges on a regular basis. The theory provided important implications for marketing tactics such as selling additional features on large ticket items (i.e., add-ons to an automobile purchase) along with pricing strategy. Though the article may not have met its collaborative catalytic goal up to now, the need still exists, as clearly shown in this review. Editors and referees should systematically include revision instructions that include broader literature reviews, proof of instrument validity, and more a priori theory development for behavioral models in particular. Finance literature informed by other disciplines is powerful.

Copernicus is calling once again. Integrated theory will not come from empirical detection and posteriori research. Computing power, big data, empiricism and demand from the institutional investment industry may have lured academic Finance literature from theoretical foundations at times. The promising outlook however is in gathering academically valid, primary consumer data, across a variety of cultures, nationalities and sub-nation units, which is the exact

concern of much of the Marketing literature. The merger of Finance skill in modeling and collecting secondary data along with marketing skills in a priori theory and primary data gathering will increase the potential for observing new constructs and developing new corporate finance and asset pricing theories. In the spirit of early Finance and Marketing collaboration by Seifert & Ford (1989, 1998), we expect Finance academics and journals will, in time, more than adequately answer the call.

LIMITATIONS OF STUDY

This methodology explicitly assumes that article titles and abstracts in the **Journal of Finance** and **Journal of Financial Economics** will provide some indication of a behavioral finance topic, or an indication of a research question linked to a construct studied in marketing, psychology, or management literature. For example the article titled '*Culture and R2*' (Eun, Wang & Xiao, 2015) had a very clear link in this review. As a result some articles that are in fact collaborative with Marketing academics may have been missed, or literature reviews with several marketing studies may have been left out. This limitation may not be material given this study finds that most articles with obvious behavioral and marketing linkages include no references from marketing, consumer or advertising journals.

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