

BRAND ASSETS AND MARKET VALUE: THE ECONOMIC
RELEVANCE OF TRADEMARK PORTFOLIOS

A THESIS

Presented to

The Faculty of the Department of Economics and Business

The Colorado College

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Arts

By

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May, 2014

BRAND ASSETS AND MARKET VALUE: THE ECONOMIC
RELEVANCE OF TRADEMARK PORTFOLIOS

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May 2014

Economics

Abstract

This paper uses a novel dataset of trademark activity for U.S. apparel firms to examine the economic relevance of trademarks to firm market value. Trademarks are the legal representations of a firm's brands and, as brand assets, have the ability to improve firms' market position and influence consumer purchase behavior. However, our understanding of the role trademarks play in firms' valuations in financial markets is limited. This study finds that firms' trademark portfolios are value relevant to market participants, and carries important implications for corporate IP policies and practices.

KEYWORDS: (Tobin's q , trademarks, brand assets, intellectual property, market value)

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CHAPTER 1

INTRODUCTION

"We're going to aggressively protect our intellectual property. Our single greatest asset is the innovation and the ingenuity and creativity of the American people. It is essential to our prosperity and it will only become more so in this century."

—Barack Obama, Export-Import Bank Annual Conference, March 11, 2010

As the quote above demonstrates, the Obama Administration has made the promotion of innovation and intellectual property (IP) rights among its most publicized items on the domestic agenda. Innovation—the process through which new ideas are generated and successfully introduced in the marketplace—is a primary driver of U.S. economic growth and national competitiveness (National Economic Council, 2011). According to a study conducted by the U.S. Economics and Statistics Administration (ESA) and the United States Patent and Trademark Office (USPTO), employment in industries identified as IP-intensive amounted to a total of 40.0 million jobs, or 27.7% of all jobs in the U.S. economy in 2010 (U.S. Department of Commerce, 2012). These IP-intensive industries accounted for about \$5.06 trillion of added value to the economy, or 34.8% of U.S. gross domestic product (GDP) in the same year (U.S. Department of Commerce, 2012). Further, merchandise exports of IP-intensive industries totaled \$775 billion, accounting for 60.7% of total U.S. merchandise exports (U.S. Department of Commerce, 2012). These figures substantiate the important role innovative activities play

both in the domestic U.S. economy, and our competitive position in global markets as well.

At the heart of innovation are improved solutions that meet previously unsatisfied needs in markets, and in society overall. Innovation comes in many forms—products, services, processes, and technologies—and IP rights provide innovators the means to establish ownership of their innovative creations. Patents, trademarks, and copyrights—the various forms of IP rights—are the legal representations of these ownership rights, and allow innovators to secure the tangible benefits of their efforts. Without them, creators of IP would lose the incentives to innovate, as others would be able to exploit the fruits of their labor. Investments required to develop IP are often substantial, and these property rights provide assurance that innovators will benefit from and recover the costs of their efforts—allowing owners to control the use and implementation of their innovations, and maintaining economic incentives to innovate. According to the ESA and the USPTO, IP protection affects commerce in the following ways:

- Providing incentives to invent and create;
- Protecting innovators from unauthorized copying;
- Facilitating vertical specialization in technology markets;
- Creating a platform for financial investments in innovation;
- Supporting entrepreneurial liquidity through mergers, acquisitions and IPOs;

- Making licensing-based technology business models possible; and
- Enabling a more efficient market for technology transfer and trading in technology and ideas.

This study will analyze the effect trademarks have on a company's market value, and expects to find that firms' trademark portfolios are of economic relevance. Unlike patents and copyrights, which protect ownership rights over new technologies and original authorships, respectively, a trademark is a legal representation of a firm's brand assets.¹ As defined by the USPTO, a trademark is "generally a word, phrase, symbol, or design, or combination thereof that identifies and distinguishes the source of the goods of one party from those of others". The trademark is an important source of IP protection, as it is a company's trademarks, or brand, that enable consumer recognition of its products and services. Consumer recognition is essential to establishing consumer associations of quality—or other consumer considerations—with the brand. In other words, trademarks enable companies to communicate to consumers the value proposition of their goods and services in order to influence buying decisions. Favorable buying decisions allow companies to capture market share in their given industry, which creates economic value to the company and promotes growth in the economy.

¹ The term 'brand asset' is taken from Philip Sandner (2009). He chooses to use this terminology to highlight the existence of different asset classes of intangible assets a company can invest in: e.g., knowledge assets—technology-based assets and brand assets—market-based assets.

Consider the Starbucks brand as an example. The brand is captured by their trademarked logo featuring the green, black, and white depiction of a crowned mermaid. As a global and well-established brand, this logo is highly recognizable to consumers, regardless of their penchant for coffee. However, to the intelligent consumer, Starbucks is not known just for its quality coffee, or the intimate coffee experience of its retail locations. Starbucks is also known as a responsible corporate citizen that focuses on ethical sourcing of raw materials and local community involvement. Consumers value this, and know to expect all these things from any and all products branded with the Starbucks mermaid. These considerations affect purchase behavior, and can influence a consumer to choose a Starbucks coffee over that of its competitors. The investments Starbucks has made to establish these consumer associations is substantial, and its trademarks essentially give Starbucks the legal protection over those associations. The result is the world's largest coffee brand and a place among Interbrand's listing of the top 100 "Best Global Brands in 2013" with a valuation of nearly \$4.4 billion.²

With revenues of nearly \$15 billion in 2013, Starbucks' financial success is a testament to the economic value of a company's brand assets.³ Strong brands enhance business performance primarily through their influence on three key stakeholder groups: (current and prospective) customers, employees, and investors (Rocha, 2014). In the past decade, recognition of the important relationship between intangible assets, such as brand

² Interbrand is a global brand management firm. In 2010, their brand valuation methodology was the first to be certified as compliant with the requirements of the International Standards Organization's ISO 10668 international standards for monetary requirements for brand valuation.

³ Figure according to Yahoo! Finance

assets, has been steadily growing. However, valuations of brand assets are notoriously misrepresented in accounting for firm value and are largely not capitalized on firms' balance sheets. Under current U.S. Generally Accepted Accounting Principles (GAAP), most intangible assets are not recognized in firms' financial statements unless they are acquired for a specific, discernable amount. This is due to concern over whether the values of internally developed intangible assets are reliably estimable, as intangible assets inherently lack physical embodiment. Yet, past research has found that unrecognized intangibles contribute to firm value. Lev and Sougiannis (1996) reported limited value relevance of accounting information in R&D intensive industries, and Barth *et al.* (1998) found that brand values estimated by the *Financial World*⁴ (1997) are value relevant. The Marketing Science Institute⁵ (MSI) reports that off-balance-sheet assets represent over 75% of the value of Fortune 500 companies. Regardless of imperfect accounting practices, it is understood that intangible assets are important to various company operations and processes, and have the potential to “augment the earning power of a firm's physical assets” (Simon & Sullivan, 1993). Therefore, it is imperative that both researchers and practitioners strive to develop a better understanding of the role of brand assets in driving financial performance and shareholder value.

As accounting standards have failed to do so, past researchers have looked to financial markets as an objective source for company valuation (Ross, 1983), that may

⁴ *Financial World* was a U.S. business magazine that went out of business in 1998.

⁵ The MSI is a non-profit organization dedicated to bridging the gap between marketing science theory and business practice, with a list of approximately 70 corporate clients and a global network of academics.

more accurately assess a company's intangible assets. A firm's value in the public equity markets is determined by a firm's ability to generate future cash flows (Rappaport. 1986), and financial investors analyze both firms' tangible and intangible assets (Griliches, 1981; Hall, 2000) to form expectations of those firms' future cash flows. Therefore, it is expected that a firm's market value reflect the 'real' value of a firm's intangible assets.

This study adapts a market value approach (Griliches, 1981; Hall *et al.*, 2005, 2006) to evaluate the economic value of brand assets while controlling for other intangibles such as patents. A Tobin's q framework is expanded to accommodate brand assets in addition to knowledge assets such as patents. We find that trademark portfolios are, indeed, positively related to firm market value. The structure of the paper is as follows: Chapter 2 will provide a review of the literature. Chapter 3 will outline the market value approach. Chapter 4 will describe the data set, as well as provide some descriptive statistics of the data. Chapter 5 provide the results and Chapter 6 will discuss the results, and highlight important implications for brand valuation and brand management practices.

CHAPTER 2

LITERATURE REVIEW

Marketing managers allocate a considerable amount of their budgets to build and manage brand assets (Madden, Fehle & Fournier, 2006). Consequently, these managers face increasing pressures to provide economic justification on such expenses (Srivastava,

Shervani & Fahey, 1999). Given the unreliability of accounting practices to accurately value brand assets, several empirical studies in the marketing and management literature have employed financial markets as an independent measure of brand value.

Simon and Sullivan (1993) present a technique that estimates a firm's brand equity⁶ based on financial market value of the firm. Brand equity is defined as the incremental cash flows that accrue to branded products over unbranded products. The applied methodology separates firms' market value into tangible and intangible assets then separates a brand equity value from non-brand-related intangibles, such as R&D and patents, using financial market estimates for brand-related profits. This study finds that industries and firms with highly recognized brands have high estimates of brand equity. Barth *et al.* (1998) examine the association between the brand valuation methodology developed by Interbrand and firm market value. The valuation methodology consists of three primary components: analyses of the competitive strength of the brand, the role the brand plays in the purchase decisions, and the financial performance of the branded products or services, combining both quantitative and qualitative considerations (Rocha, 2014). The study finds that these estimates of brand values provide significant explanatory power of equity price movements.

These studies are among the few to take an objective approach by relating brands to financial markets (Barth *et al.*, 1998; Kallapur & Kwan, 2004; Lane & Jacobson, 1995; Rao *et al.*, 2004; Simon & Sullivan, 1993). With few exceptions (Bosworth & Rogers,

⁶ Brand equity is synonymous with brand assets.

2001; Greenhalgh & Rogers, 2006, 2007; Krasnikov et al., 2009; Sandner, 2009; Sandner & Block, 2011; Sandner et al., 2014; Seethamraju, 2003), the use of trademark data in past empirical analysis of brand assets in relation to firm market value is notably scarce. This is surprising, as trademarks are the fundamental and legal anchors of a company's brand, and, as previously stated, it is a company's brand that enables consumer recognition of a company's products and services and influences consumer choice. Consumer recognition is essential to establishing consumer associations of quality with that company's offerings, which by extension enables a particular price positioning of those products and services relative to competitors. In other words, trademarks enable companies to communicate to consumers their value propositions that influence buying decisions. Therefore, it is expected that financial markets value a company's trademarks because, as legal representations of a brand, trademarks have the ability to impact a company's earning power.

Greenhalgh and Rogers (2007) is an example of one of the few studies that assess the value of trademarks as reflected in financial markets. Following the work of Griliches (1981), they employ a Tobin's q framework, extending the equation to accommodate trademark data in addition to knowledge assets. Knowledge assets are defined as R&D expenditures and patents—different forms of IP that are also poorly capitalized by accounting standards. They find that knowledge assets and trademark activity are positively associated with the market value of a sample of 1,600 large UK firms from a range of manufacturing and service sectors. This study employs flow variables to proxy

for R&D, patent and trademark stocks. This may be seen as a limitation of the study, as flow variables account for only annual changes. Financial markets tend to value past investments in a companies' various assets, as those past investments serve to build on the base with which a company develops or markets its products today (Sandner & Block, 2009). Further, the study uses trademark application data. Again, using application data assumes that past advertising investment applies to the trademark being applied for today, which may not always be the case. A firm's stock of registered trademarks, or a firm's full portfolio of trademarks, may provide a better representation of the firm's brand assets, as stock variables include historical data. Therefore, evaluating how financial markets value a firm's stock of trademarks may provide better indication of the degree to which markets value a company's brand assets.

Studies that employ stock variables to such analysis are extremely few (Sandner, 2009; Sandner & Block, 2011). Similar to Greenhalgh and Rogers (2007), Sandner and Block (2011) follow the methodology of Griliches (1981) and employ a Tobin's q framework. Again, they extend the model to incorporate trademark data. The results show a significantly stronger positive relationship between knowledge assets and trademarks and firm market value than shown in the Greenhalgh and Rogers (2007) study.

Among the few studies that have incorporated brand assets, in the form of trademarks (Bosworth & Rogers, 2001; Greenhalgh & Rogers, 2006, 2007; Krasnikov et al., 2009; Sandner, 2009; Sandner & Block, 2011; Sandner et al., 2014; Seethamraju,

2003), the majority of research has focused on European trademark data. Empirical research on U.S. trademark data is notably limited, likely due to the inaccessibility of such data. However, the USPTO recently released their “Trademark Case Files Dataset”. This is effectively the first publically available dataset that allows for large scale, comprehensive analysis of U.S. trademark data. This study will be among the first to analyze this data set, and will employ a market value approach to examine the effect U.S. firms’ trademark stocks have on firm market value. The sample contains a total of 37 U.S. firms within the apparel and apparel accessory sector (NAICS 448 and SIC: 56) with revenues over \$500,000. This sector was chosen due to the high dependability such firms have on their brand and its recognizability among consumers. It has also been identified as a trademark-intensive industry by the U.S. Department of Commerce (2012). The intent of this study is to further the limited empirical research on firms’ brand assets, as represented by trademarks, and, further, to improve our understanding of the economic role of trademarks.

CHAPTER 3

THEORY

Market Value Approach

The market value approach takes a firm-level approach, which combines firm accounting data with their valuation in financial markets (Lindenberg & Ross, 1981; Montgomery & Werner, 1988; Sandner, 2009). In the past, this approach has been used to

assess returns to firms' innovative activity and the economic value of intangible assets (Griliches, 1981; Hall, 2006). This approach operates under the assumption that companies are bundles of both tangible and intangible assets. These assets include inventory, plants and equipment, customer relationships, reputation, brands, and knowledge assets (Hall *et al.*, 2007). In financial markets, investors estimate company values according expectations of future earnings from its assets. Therefore, it is expected that firms' market values reflect the 'real' value of their intangibles. The model is comparable to hedonic price models, which seek to measure the contribution of single characteristics of a good to that good's price (Hall *et al.*, 2007; Sandner, 2009). The model follows the work of Grilichies (1981). The typical linear market value model is given by:

$$V_{it}(A_{it}, K_{it})=(A_{it}+K_{it}) \quad (3.1)$$

where V_{it} denotes the market value of firm i at time t . The book value of total tangible assets is represented by A and K is the stock of intangible assets not included on the balance sheet. Both categories are summed together, implying that firm value is equal to the sum of its components' values.

Knowledge assets, K , can be represented by R&D investments (Hall, 1993; Hall & Oriani, 2006) or patents (Blundell *et al.*, 1999). Some studies include both R&D and patent data in the equation (Bloom & van Reenen, 2002; Connolly & Hirschey, 1988;

Grilichies, 1981; Grilichies *et al.*, 1991; Hall *et al.*, 2005; Megna & Klock, 1993; Toivanen *et al.*, 2002). Notably, Hall *et al.* (2005) finds citation-weighted patent stocks to be more informative than mere patent stocks. Given this insight, this study will include citation-weighted patent data.

Including Trademarks in the Equation. The approach for expanding the market value equation to incorporate trademark stocks follows that of Sandner and Block (2009). Trademarks are treated as assets symmetrical to knowledge assets. This follows the approach of Hall and Oriani (2006), which includes ‘other intangible assets’ in addition to physical and knowledge assets. Similarly, Hall *et al.* (2007) assume that different asset classes can effect the market value equation symmetrically and additively. Following this methodology, advertising expenditures (Connolly & Hirschey, 1988; Hall, 1993) and trademarks (Greenhalgh & Rogers; Sandner, 2009; Sandner & Block, 2011) have been included in past studies employing the market value approach, as brands, and trademarks as their legal foundation, can be treated as a unique asset class (Aaker, 1991). The market value equation is thus expanded to include trademark stocks:

$$V_{it}(A_{it}, K_{it}, TM_{it})=(A_{it}+K_{it}+TM_{it}) \quad (3.2)$$

The equation includes trademark portfolios, treated as an additional additive term symmetrical to other asset classes. For empirical analysis, equation [3.2] is modified as follows:

$$\log \frac{V_{it}}{A_{it}} = \log A_{it} + \log \left(\frac{K_{it}}{A_{it}} + \frac{TM_{it}}{A_{it}} \right) \quad (3.3)$$

CHAPTER 4

DATA

To evaluate the conceptual model, a novel data set is compiled with information from a number of secondary sources. The dataset includes firm-level accounting, financial market, trademark, and patent data. Firm financial data were obtained from the Morningstar database. Trademarks and patent data were manually consolidated to build firm-level IP portfolios. The sources of both were the USPTO. Trademark data comes from the USPTO's "Trademark Case Files Dataset". This is among the very first studies to analyze that dataset.

As the study required accounting and financial information, only publically traded companies were considered. The Mergentonline database was used to identify U.S. firms with revenues greater than \$500 million within the apparel and apparel accessory industry (NAICS 448 and SIC: 56). These criteria yielded 37 observations. Morningstar provided accounting and financial figures for period 2012-2003—firms' total assets, total debt, and

market capitalization. This is the first known study to analyze U.S. data for this period of time with an industry focus on major U.S. apparel and apparel accessory firms.

Trademarks were taken from the “Trademark Case Files Dataset”, which was composed of a total of 6,707,708 individual observations. Registered trademark serial numbers were then sorted according to firm ownership. The dataset was then sorted for trademarks that were live and registered during the 2012-2003 period. The patent dataset was similarly compiled.

Tobin’s q

This section describes the dependent variable, Tobin’s q . We take the natural logarithm of Tobin’s q , defined as the ratio of a company’s market value V to the book value of its assets A (Greenhalgh & Rogers, 2006; Hall & Oriani, 2006; Hall *et al.*, 2007; Sandner, 2009; Sandner & Block, 2011). Book value of firm assets is given by firm total assets, as reported on firm balance sheets. Firm market value is given by the sum of the value of firm market capitalization and the market value of its total debt. Market capitalization is calculated by multiplying the market value of a firm’s equity by the number of outstanding shares. Difficulties arise in determining the market value of a firm’s debt. This study follows the approach of Hall and Oriani (2006) “by simply adding the nominal value of outstanding debt to the market capitalization”. Therefore, the book value of total debt as reported on firm balance sheets is used to serve as the market value of firm debt. These processes follow the methodology of Sandner (2009).

Knowledge Assets. Knowledge assets are rarely capitalized on company balance sheets; hence data is not directly accessible. Knowledge assets are composed of R&D investment and patents. According to GAAP, R&D activities are expensed annually in the period in which they occur. Therefore, past studies that have employed R&D investment to proxy for innovation have compiled R&D stock variables by capitalizing past R&D expenses. However, this study does not include R&D investments as a component of knowledge assets due to the nature of the firms included in the dataset. Conceptually, this is justified by the fact that apparel and apparel accessory industry is not an R&D-intensive industry. This is evidenced by the fact that the firms in our dataset do not report R&D expenses in their annual reports. Lev and Sougiannis (1996) find that value relevance of accounting information is limited in R&D intensive industries, citing that “a direct relationship between R&D costs and specific future revenue generally has not been demonstrated”. Although more recent studies (Sander, 2009; Sandner & Block, 2011) have shown that R&D stocks do have a positive relationship to firm market value, the validity of the results of this study are not expected to be significantly affected due to the industry focus of this study.

Patent portfolios serve as another component of knowledge assets in past studies. Patent stocks are calculated as follows:

$$P_t^{\text{stock}} = P_t^{\text{flow}} + P_{t-1}^{\text{stock}} \quad (4.1)$$

Patents were counted among firm patent portfolios according to issue date. To account for patent value, patent citations are used to add a value-weighted component to patent portfolios.

$$C_t^{\text{stock}} = C_t^{\text{flow}} + C_{t-1}^{\text{stock}} \quad (4.2)$$

Trademark Stocks. The calculation of trademark stocks follows the process of knowledge stocks. Annual inflows of trademarks concern live and registered trademarks only. The formula for trademark stocks is as follows:

$$TM_t^{\text{stock}} = TM_t^{\text{flow}} + TM_{t-1}^{\text{stock}} \quad (4.3)$$

Estimation Method. Following similar studies in the past, this study employs an ordinary least squares (OLS) regression technique (Cockburn & Grilichies, 1988; Grilichies, 1981; Jaffe, 1986). This method approximates $\log(1+x)$ by x , allowing for an estimation of the market value equation, or Tobin's q . It should be noted that recent studies (Hall *et al.*, 2007; Sandner, 2009; Sandner & Block, 2011) diverge from these past methods, citing poor OLS estimation of x when x is large. However, the value of x , or trademark stock, is never large enough in our data to significantly effect our market value estimations. To account for time-dependent factors, a set of year dummy variables is

included. As country of origin and industry were the same for all firms, dummy variables for these firm-specific factors were not included. Summary statistics are given in Table 4.1.

Table 4.1 Summary Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
year	359	2008.591	2.863178	2004	2013
stockplusf~m	354	125.0198	155.231	4	830
patentstock	359	8.259053	33.60105	0	266
citationst~k	358	27.22905	178.5157	0	1922
tobinsq	344	2.368547	1.787451	0.492446	15.1399
logassets	359	13.70548	1.03885	10.6348	16.1518

CHAPTER 5

RESULTS

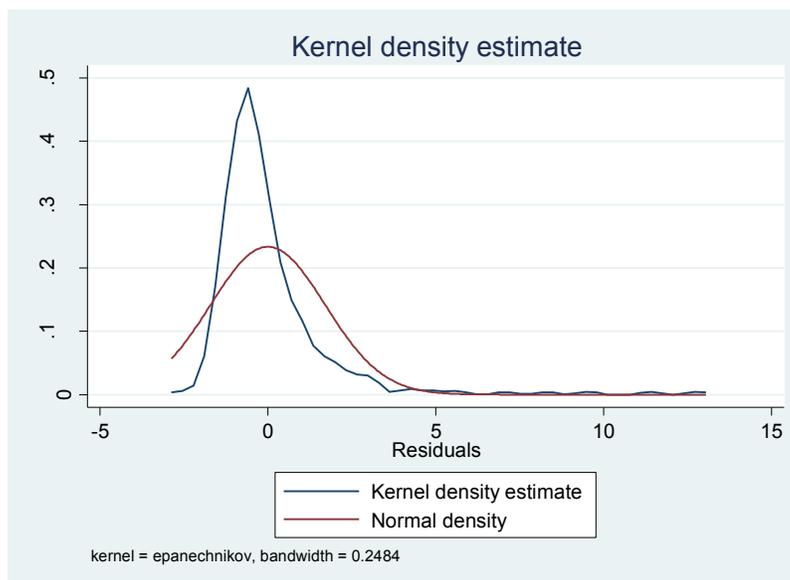
The OLS regression estimating the effects of brand assets on firm market value are shown in Table 5.1. The model includes patent stocks to capture firm knowledge assets, and weights patent stocks by the stock of citations yielded by patents. The initial regression revealed heteroskedasticity in the results. After running a Breusch-Pagan test, the regression was run again with robust standard errors. Our results do show a non-

normal distribution of error terms (Figure 5.1). This is relatively concerning, as the OLS regression assumes a normal distribution. However, as the number of observations in our dataset is not terrible small, the results are still considered relevant. The coefficient of patent stock is shown to be statistically insignificant (-0.002, $p > 0.127$). Similarly, citation production is also statistically insignificant (-0.000, $p > 0.797$). These results were expected, as the industry in question is not known as technology-intensive. However, patents were included in the dataset as a number of firms in the sample were known as active patenting firm. Therefore, patent data was included to control for the effect these patent portfolios might have on the market value equation. In addition, all patent citations in the data were made no earlier than 2010; thus it was not expected that these observations would be significant. However, the coefficient of trademark stocks are positively related to firm market value and statistically highly significant (0.0006, $p < 0.005$). To analyze the explanatory power of the model, R^2 -value is calculated, yielding a value of 0.198. The results confirm the hypothesis that financial market participants view trademark portfolios as economically value relevant.

Table 5.1 Regression Results

TobQ	Coef.	Robust Std. Err.	t	P>t
logassets	-0.03761	0.036496	-1.03	0.304
year2	0.02388	0.139884	0.17	0.865
year3	0.073068	0.130241	0.56	0.575
year4	-0.34644	0.138497	-2.5	0.013
year5	-0.76801	0.130139	-5.9	0
year6	-0.3772	0.136436	-2.76	0.006
year7	-0.27631	0.13678	-2.02	0.044
year8	-0.37724	0.144937	-2.6	0.01
year9	-0.31092	0.144996	-2.14	0.033
year10	-0.18122	0.133819	-1.35	0.177
tmstock	0.000628	0.000223	2.81	0.005
patentstock	-0.00206	0.001344	-1.53	0.127
citationstock	-0.00006	0.000233	-0.26	0.797

Figure 5.1 Visual Normality Test



CHAPTER 6

DISCUSSION AND IMPLICATIONS

As legal representations of a company's brand, trademarks bestow the ownership rights that enable a firm to develop and protect the value of their brand assets. These rights ensure that the benefits of past value-added investments cannot be exploited by others. Although past studies have shown that intangible assets—brand assets included—have the ability to increase a firm's earning power (Simon & Sullivan, 1993), and that brand assets are valued by the market (Barth *et al.*, 1998), few studies have incorporated trademarks in intangible and brand asset value analysis (Bosworth and Rogers, 2001; Greenhalgh and Rogers, 2006, 2007; Krasnikov *et al.*, 2009; Sandner, 2009; Sandner and Block, 2011; Sandner *et al.*, 2014; Seethamraju, 2003). The paucity of such research is concerning considering the important role trademarks play in the ability of a firm to influence purchase behavior. Further, little research has focused on the role of trademarks in U.S.-specific firms, despite past studies that find that trademark intensity is highest among U.S. firms. This study investigates the economic relevance of trademarks, specifically exploring the relationship between U.S. apparel firms' trademark portfolios and their market values. Similarly to prior research in this space, this study finds that trademarks are economically relevant, complementing past research on the market value of intangible assets (Blundell *et al.*, 1999; Cockburn & Grilichies, 1988; Grilichies, 198; Hall *et al.*, 2007; Sandner, 2009; Sandner & Block, 2011).

This study has important implications for corporate IP policies and practices. Investments required to build a strong, sustainable brand are often considerable. Therefore, it is essential to determine how these investments and brand-building activities create value for both consumers and investors. This study shows that by filing for trademark registrations, firms signal to financial markets that they are committed to protecting the value of their brand assets. Further, Seethmanraju (2003) finds that disclosures of brand or trademark acquisitions accompanied by quantitative information on the trademarks acquired are received favorably by investors, indicating that better disclosure of brand valuations are valued by investors. By providing investors with more transparency regarding their brand assets, firms can strengthen their market valuations.

Although the results of this study were positive and significant for trademarks, the following limitations are noted. Compared to similar studies, our firm sample is small, including just 37 firms. However, this is by virtue of the focus on a single industry in the U.S. economy—the apparel industry. Additionally, due to the labor-intensive process of compiling trademarks portfolios, and the limited resources at disposal to this researcher, an expansive sample size could not be accommodated. The original “USPTO Trademark Case Files Dataset” was compiled of a total of 6.7 million observations; therefore, the process of manually compiling trademark stocks for even just 37 firms was extremely time-intensive. This study might have been improved further if firms’ marketing and advertising expenditures were incorporated into the model. These expenditures may account for past investments in brand building, and have been found to be valued by

investors (Wang *et al.*, 2009). However, access to resources necessary to aggregate historical marketing and advertising expenditures made such an extension of the study impractical.

Avenues for further research include the incorporation of trademark value indicators. To date, only two such studies (Sander, 2009; Sander & Block, 2011) attempt to account for such value indicators, and neither employ U.S. trademark data. Value indicators considered for this study included trademark maintenance activities, as trademarks registered with the USPTO must be maintained at six and ten year intervals. Value might also be ascribed to certain trademarks with registrations on multiple products. Such adaptations to this study might further our understanding of trademark value.

In all, our understanding of the relationship between trademark activity and firm value is incomplete. This study attempts to improve that understanding, and posits the need for greater emphasis on trademarks in the IP and marketing literature.

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