Intangible Assets Valuation in the Hospitality Industry

Ruixue Du

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Hospitality and Tourism Management

Raman Kumar, Co-Chair

Vincent P. Magnini, Co-Chair

Michael D. Olsen

Manisha Singal

Muzaffer Uysal

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ABSTRACT

Market value of firms and book value of firms are rarely the same. The difference, which is attributed to unrecorded or unrecognized intangible assets, has increased significantly since the 1970s. The issue of appropriately valuing these intangible assets, however, still remains unresolved. The purpose of this study is to address this lack of understanding of valuing intangible assets in the hospitality industry. Five intangible asset investments: Research and Development, Training, Advertising, Labor, Pension, and one business model, Franchising, are chosen as the valuation constructs in this study based on previous research in the hospitality industry. The valuation models for the casual dining restaurant industry and the quick service restaurant industry are compared.

The sample of this study includes 13 casual dining restaurant firms and 12 quick service restaurant firms. Compustat North America is the primary data source for this study. The annual data for casual dining restaurant firms from 1980 to 2011 is collected from this database. There are 238 firm-years in total. Two firm-years are excluded due to systematic missing values, and 15 firm-years are excluded due to missing share price information. Thus, the final count of data points for casual dining restaurant firms usable for analysis purposes is 221. The annual data for quick service restaurant firms from 1980

to 2011 is also collected from the Compustat North America database. There are 251 firm-years in total. Eight firm-years are excluded due to systematic missing values, and 47 firm-years are excluded due to missing share price information. Thus, the final count of data points for quick service restaurant firms usable for analysis purposes is 196.

Pearson correlation and multivariate analyses are performed to answer the four research questions in this study. Two hypotheses are supported while one hypothesis is not supported and one hypothesis remains unanswered due to Multicollinearity issues identified in multiple regression models. The results of this study show that 1) R&D, training, advertising, labor and pension are all important valuation constructs in the hospitality industry, and 2) there are some differences, however, between casual dining restaurant firms and quick service restaurant firms. This study fills the gap in the current literature by providing a quantitative method to value intangible assets in the hospitality industry that uses the valuation constructs identified in previous hospitality research. The practical implications of this study will provide managers in the hospitality industry with helpful insights for strategic decision making, specifically in regards to research and development, advertising and employee compensation.

DEDICATION

To my father Shuliang Du

and

my mother Fangming Zhu

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Completing this dissertation has been such a special journey for me. Many unexpected developments have truly made this journey more colorful and unforgettable. I would like to take this opportunity to express my sincere gratitude to all individuals who have helped me along this journey in different ways.

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Chapter One Introduction

1.1 Introduction

Market values and book values are rarely the same for publicly traded firms. Different disciplines have provided various explanations for this discrepancy. In finance literature, this market premium is primarily attributed to growth opportunities and possible mispricing. Growth opportunities or growth options are like real call options a firm has, the value of which depend on the firm's future discretionary investments (Myers 1977). In accounting literature, this discrepancy is commonly referred to as unrecognized intangible assets and appreciation of tangible assets. In management and legal literature, intellectual capital is the term used to describe the difference between a firm's market value and book value. However, although these explanations take different perspectives, they are not inconsistent with each other. Growth opportunities could be part of the unrecognized intangible assets. Similarly, intellectual capital could also be included in unrecognized intangible assets. In this study, I attempt to explain the difference between market value and book value by the unrecognized appreciation in tangible assets and unrecognized intangible assets.

A portion of the market premium can be allocated to tangible assets for reasons such as increased value of inventories, equipment, land, and buildings. The other portion of the market premium can be attributed to unrecognized intangible assets. There are several different methods to value inventories, such as, First in First Out, Last in First Out or Weighted Average Cost methods. Since inventories usually are short-term in nature and these inventory valuation methods incorporate market conditions, inventories do not contribute a large portion to the

market premium. Land and buildings, whereas, are valued at historical costs on a firm's balance sheet. Market conditions are not considered in the value presented. The appreciation of land and buildings constitute the majority portion of market premium allocated to tangible assets (Williams 2002).

Intangible assets include both identifiable intangible assets and unidentifiable intangible assets. Intangible assets are organized into three categories: human capital, relational capital and structural capital (Bontis 1999; Gillis 2003). Modern corporation theory indicates that the primary goal of a firm is to maximize profitability (Jensen and Meckling 1976). Therefore, in order to achieve this ultimate goal, a firm should acquire useful resources, internally or externally, and operate to generate profits based on these resources. According to resource-based view (RBV), a firm should possess resources that are valuable, rare, imperfectly imitable, and sustainable, which can contribute to the firm's financial performance (Barney 1991). Both tangible assets and intangible assets can possess these characteristics and ultimately contribute to the firm's performance.

Market-to-book ratio has been used to measure the discrepancies between market value and book value for publicly traded firms. Lev (2001 p.9) documented an upward trend for Standard and Poor 500 (S&P 500) companies for the period from the 1980s to the 2000s. The market-to-book ratio has been continuously increasing from the value of 1.0 in the early 1980s to the value of 7.5 in the early 2000s for those companies (Lev 2001). In addition, a shift in the make-up of the market value of publicly traded firms is documented by Blair and Wallman (2001). Twenty percent of corporate value was due to intangibles in 1978. This figure increased to 80 percent in 1999 (Sullivan Jr and Sullivan Sr 2000).

This significant change in the market value make-up has posed new challenges for investors, analysts, and the management as to how to properly measure and value intangible assets. Consequently, many efforts have been devoted to identifying the most appropriate ways to measure and value intangible assets, which can not only provide guidance on pricing for mergers and acquisitions, but can also enlighten entrepreneurs on how to create internally or acquire externally valuable intangible assets.

1.2 Problem Statement

"*A growing share of economic activity today consists of exchanges of ideas, information, expertise, and services. Corporate profitability is often driven more by organizational capabilities than by control over physical resources, and even the value of physical goods is often due to such intangibles as technical innovations embodied in the products, brand appeal, creative presentation, or artistic content.*"

------ *Michael H. Armacost*

As previously stated in the introduction section, the intangible assets portion of a firm's total assets has been increasing dramatically since the 1970s (Sullivan Jr and Sullivan Sr 2000). Intangible assets are playing a dominant role in value creation (Lev 2001). Therefore, many efforts have been devoted to measuring and valuing intangible assets. Current literature has identified sources of intangible assets (Green 2004; Andreas et al. 2007; Green and Ryan 2005), and valuation techniques of intangible assets have been proposed, such as the balanced scorecard (Kaplan and Norton 1992; Melymuka 2004; Kaplan and Norton 1996). Such intangible assets

have been linked to the financial performance of a firm (Gillis 2003; Hua et al. 2007; Sriram 2008). Existing literature, however, mainly focuses on high tech related firms, in which intangible assets usually occupy dominant portions of the balance sheets (Sriram 2008; Andreas et al. 2007; Green and Ryan 2005; Green 2004). As such, further research is recommended in various industries because the sources of intangible assets vary depending on the industries investigated (Andreas et al. 2007).

In terms of market capitalization, casual dining restaurant firms usually fall into the small to middle categories. Except Darden Restaurants, none of the other casual dining restaurant companies is listed on the S&P 500 index. The average market-to-book value was 2.72 in 1998 and 3.25 in 2001 for casual dining restaurants, which is much lower than the 7.5 of S&P 500 firms. Limited research has been done within hospitality industry with regard to measuring and valuing intangible assets. More attention has been given to hotels, rather than to restaurants, in the form of case studies focusing on hotel valuation (Hua et al. 2007; Hsu and Jang 2008; Jerman and Kavcic 2010; O'Neill and Belfrage 2005; Jerman et al. 2009; Kinnard Jr et al. 2001). A comprehensive set of intangible assets measurements has been developed for human capital related intangible assets, as well as for organizational capital related intangible assets under the setting of casual dining restaurant industry (Lee 2011; Murphy 2006). Despite these contributions, the question of whether the distinct features of casual dining restaurant firms (e.g. relatively small market capitalizations and low market-to-book ratios) mandate a different composition of corporate value with regard to tangible assets and intangible assets remains unanswered. In addition, no quantitative research has been conducted to link these intangible assets measurements to the market value of casual dining restaurant firms.

1.3 Purpose of the Study

As stated above, although intangible assets have drawn the interests of academic researchers from various fields, such as finance, accounting and management, the issue of measuring and valuing intangible assets has not been explicitly examined in the hospitality literature. The purpose of this study is to address this gap in our understanding of valuing intangible assets in the casual dining restaurant industry as well as to provide practical implications to managers in the hospitality industry. In particular, this study aims to achieve the following objectives:

1. Investigate the impact of land and buildings appreciation on market-to-book ratio.

2. Examine the impact of franchising decisions on the market-to-book ratio.

3. Evaluate the importance of developing, acquiring and maintaining intangible assets in the casual dining restaurant industry.

4. Compare the importance of intangible assets valuation constructs between the casual dining restaurant industry and the quick service restaurant industry.

1.4 Research Questions

To summarize the previous discussion, this study intends to address the following four issues:

1. What is the effect of the appreciation in land and buildings on the market-to-book ratio in the casual dining restaurant industry?

2. What is the impact of franchising decisions on the market-to-book ratio in the casual dining restaurant industry?

3. How do intangible assets contribute to the market value of a firm in the casual dining restaurant industry?

4. Is there any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs?

1.5 Theoretical Background

1.5.1 Definition of Intangible Assets

It would be necessary to understand the term of "asset" before the discussion of intangible assets. An asset is generally defined as an item of value owned. From financial accounting perspective, assets are economic resources owned or controlled by an entity and can produce future economic benefits to the entity. Based on the physical characteristics, assets can be divided into tangible assets and intangibles assets, which both possess all of the attributes of assets. Tangibles assets are those assets that can be seen, touched and felt; whereas everything else is considered as an intangible asset.

The term intangible is generally used to describe things that are not made of physical substance, not able to be touched, or not tangible. Intangible assets have been defined differently by researchers. Examples of these definitions are "a non-physical claim to future benefits" (Lev 2001), "non-physical factors" (Blair and Wallman 2001), "knowledge, experience, expertise, and associated soft assets" (Klein 1998), "everything that is not physical or investment, but is of

value to the company" (Daum 2003), "employee competence, internal structure, and external structure" (Sveiby 1997), and "the sum of everything everybody in a company knows that gives it a competitive edge" (Stewart 1997).

Intangible assets have been referred to with different academic terms in various disciplines. "Intangible assets" is most commonly used in the accounting literature; "knowledge assets" is preferred by economists while "intellectual capital" is adopted by the management and legal literature (Lev 2001). The term "intangible assets" is also used by the finance literature. However, the definition of intangible assets in the finance literature is slightly different from that in the accounting and management literature. Intangible assets in the finance literature are those assets that have been recorded on a balance sheet, for example, patents, copyrights, and goodwill. The difference between a firm's market value and book value is attributed to growth opportunities and mispricing. Unlike the finance literature, the accounting and management literature uses "intangible assets" to describe the discrepancy between a firm's market value and book value. In this study, the term "intangible assets" will be used to refer to all of a firm's intangible assets that are not recorded or underreported on its balance sheet. "Unrecognized intangible assets" will represent the difference between a firm's market value and book value that cannot be attributed to tangible assets.

Intangible assets include both identifiable intangible assets and unidentifiable intangible assets. Identifiable intangible assets are those that can be separately measured and quantified, and can exist independently of the business. Patents and copyrights are examples of identifiable intangible assets. On the other hand, unidentifiable intangible assets are those that cannot exist independently of the business. Goodwill is an example of an unidentifiable intangible asset.

Identifying the dimensions of intangible assets is a controversial area in the literature. Various researchers have dedicated attention to developing the dimensions of intangible assets for better measurement, among which human capital is the most common identified dimension (Bontis 1996; Roos et al. 1998; Lev 2001; Sullivan 2000; Stewart 1997). Some other common dimensions are relational capital (Bontis 1996), innovation capital (Edvinsson and Malone 1997; Lev 2001), customer capital (Edvinsson and Malone 1997; Stewart 1997; Kaplan and Norton 1992) and structural capital (Roos et al. 1998; Bontis 1996; Stewart 1997).

1.5.2 Resource-Based View

Firm resources are defined as "those (tangible and intangible) assets which are tied semi-permanently to the firm" (Wernerfelt 1984). The resource-based view of the firm suggests that, in order to achieve sustainable competitive advantage, a firm should possess resources that are valuable, rare, imperfectly imitable, and sustainable (Barney 1991; Wernerfelt 1984). The resource-based view of the firm chooses a different unit of analysis than industrial organization research, which was one of the dominant streams of study in the theory of the firm in the 1970s and the 1980s. Industrial organization research focuses on the strategy analysis on the industry level (Scherer 1980; Porter 2008) while resource-based view shifts the unit of analysis from industry-level to firm-level (Wernerfelt and Montgomery 1986; Rumelt 1991). This shift in strategy research is a result of the argument that the nature of a firm's resources is the primary factor that affects the attractiveness of an industry (Andrews 1971; Wernerfelt and Montgomery 1986). Regardless of industry, each individual firm possesses idiosyncratic

resources that distinguish it from its competitors, and the firm's most critical resources are intangible assets (Itami and Roehl 1987).

1.5.3 Co-Alignment Theory

Rather than shifting the entire focus from industry-level to firm-level, co-alignment theory proposed a combination view of firm strategic management (Olsen et al. 2008). The center of co-alignment theory is a four-factor model that incorporates both industry-level analysis and firm-level analysis into a strategic management process.

"the concept of strategic management refers to the ability of the management of the firm to properly align the firm with the forces driving changes in the environment in which the firm competes."

------*(Olsen et al. 2008)*

To achieve this alignment, a firm must first constantly examine the external environment carefully to identify and monitor those important value drivers that will potentially pose threats or bring opportunities to the firm. After environmental scanning, the second step is to propose competitive methods that will help the firm alleviate the threats and take advantage of the opportunities previously identified. Then, the next step is to allocate the appropriate resources to facilitate the pursuit of the proposed competitive methods. The last step in this alignment process is to evaluate the firm's performance in regards to how well the firm has responded to an identified external event with the proposed competitive methods (Olsen et al. 2008).

One of the key elements in this alignment is to integrate a firm's core competencies with the proposed competitive methods. The level of the competitive advantages and the financial benefits a firm can achieve depend on the level of the integration between the firm's core competencies and the firm's competitive methods (Olsen et al. 2008). Core competencies are things that a firm does well, which can help the firm to achieve competitive advantages (Prahalad and Hamel 1990; Hamel and Prahalad 1994; Andriessen et al. 1999; Olsen et al. 1998). As such, core competencies are not only built upon intangible assets, but are also critical intangible assets themselves. Therefore, co-alignment theory addresses the importance of intangible assets in a firm.

1.6 Research Methodology

1.6.1 Multivariate Analysis

Multivariate analysis is a set of statistical techniques that allow researchers to investigate multiple measurements simultaneously (Hair et al. 2006). Multiple regression will be applied to analyze the first, second, third and fourth research questions. Multiple regression examines how dependent variables would change when any one of the independent variables changes. To answer research question one, two, three and four, multiple regression will be performed to investigate how market-to-book ratio has changed due to land and buildings appreciation and franchising and how firm value changes with the change of intangible value.

The difference between market value and book value will be the dependent variable of this study. Independent variables include research and development cost, advertising cost,

training cost, extra labor cost, extra pension cost and franchising. Control variables include revenues, number of employees, total assets, market returns, return on assets and concepts.

1.6.2 Pearson Correlation

The Pearson Correlation is a measure of the strength of linear dependence between two variables. The first research examines the relationship between the unrecognized appreciations in land and buildings and the market-to-book ratios in the casual dining restaurant industry. The Pearson Correlation will be employed to answer the first research question.

1.6.3 Hausman Test

A Hausman test is employed to determine fixed effects and random effects in a multiple regression model. The sample data in this study is panel data in nature. Panel data contains multiple observations for one individual at different time points. A Hausman test will help to determine the efficiency of fixed models and random models with panel data.

1.7 Summary

As stated above, although the difference between a firm's market value and book value, which is attributed to unrecorded or unrecognized intangible assets, has increased significantly since the 1970s, the issue of appropriately valuing intangible assets still remains unresolved (Sullivan Jr and Sullivan Sr 2000; Blair and Wallman 2001; Lev 2001; Kanodia et al. 2004) . This study attempts to start filling the gap in our knowledge regarding intangible valuation in the hospitality industry as well as provide practical implications to managers in the hospitality industry. The primary concern of this study is to examine how intangible assets contribute to a firm's value.

Chapter Two Literature Review

The purpose of this study is to address the gap in our understanding of valuing intangible assets in the casual dining restaurant industry. This chapter aims to provide a thorough review of previous research on intangible assets.

2.1 Definition of Intangible Assets

Intangible assets have been referred to in a number of different ways by both academic researchers and industry professionals. It is necessary to understand the term "asset" before the discussion of intangible assets. An asset is generally defined as an item of value owned. From a financial accounting perspective, assets are economic resources owned or controlled by an entity and can produce future economic benefits to the entity. Based on the physical characteristics, assets can be divided into tangible assets and intangibles assets, which both possess all of the attributes of assets. Tangibles assets are those assets that can be seen, touched and felt, whereas everything else is considered as an intangible asset. Examples of tangible assets of a firm are computers, desks, machinery and equipment. Customer lists, copyrights, contractual obligations and patents are examples of intangible assets.

Intangible assets distinguish themselves from tangible assets with four unique characteristics. First, there is more uncertainty about future benefits associated with intangible assets than tangible assets. Second, the value of intangible assets is subject to wider fluctuations than that of tangible assets. Third, the value of intangible assets may be applicable to only one firm. Finally, the lives of intangible assets may be indeterminable.

The term intangible is generally used to describe things that are not made of physical substance, not able to be touched, or not tangible. Intangible assets have been defined differently by researchers. Examples of these definitions are "a non-physical claim to future benefits" (Lev 2001), "non-physical factors" (Blair and Wallman 2001), "knowledge, experience, expertise, and associated soft assets" (Klein 1998), "everything that is not physical or investment (a firm's holdings in stock and bonds), but is of value to the company"(Daum 2003), "employee competence, internal structure, and external structure" (Sveiby 1997), and "the sum of everything everybody in a company knows that gives it a competitive edge" (Stewart 1997).

As stated above, intangible assets have been referred to with different academic terms in different disciplines. The term "intangible assets" is most commonly used in the accounting literature (Lev 2001); "knowledge assets" is preferred by economists (Teece 1998), while "intellectual capital" is adopted by the management and legal literature (Stewart 1997). The term "intangible assets" is also adopted by the finance literature. However, the definition of intangible assets in the finance literature is slightly different from that in the accounting and management literature. Intangible assets in the finance literature are those assets that have been recorded on a balance sheet, for example, patents, copyrights, and goodwill. The difference between a firm's market value and book value is attributed to growth opportunities and mispricing. Unlike the finance literature, the accounting and management literature uses "intangible assets" to describe the discrepancy between a firm's market value and book value. In this study, the term "intangible assets" will be used to refer to all of a firm's intangible assets that are not recorded or underreported on its balance sheet. Unrecognized intangible assets represent the difference between a firm's market value and book value that cannot be attributed to tangible assets.

Figure 2.1 Intangible Assets in Different Disciplines

Disciplines	Terms	Concepts
Accounting	Intangible Assets	A non-physical claim to future benefits The difference between market value and book value (Lev, 2001)
Economics	Knowledge Assets	Tactic and codified know-how (Teece, 1998)
Finance	Intangible Assets	Assets that have been recorded on balance sheet, for example, patents, copyrights, and goodwill
Management and Legal	Intellectual Capital	The sum of everything everybody in a company knows that gives it a competitive edge (Stewart, 1997)

Intangible assets include both identifiable intangible assets and unidentifiable intangible assets (Cohen 2005). Identifiable intangible assets are those that can be separately measured and quantified, and can exist independently of the business. On the other hand, unidentifiable intangible assets are those that cannot exist independently of the business. Goodwill is an example of an unidentifiable intangible asset. From the valuation point of view, identifiable intangible assets are easier to be measured than unidentifiable intangible assets, since unidentifiable intangible assets usually cannot be separated from an entity.

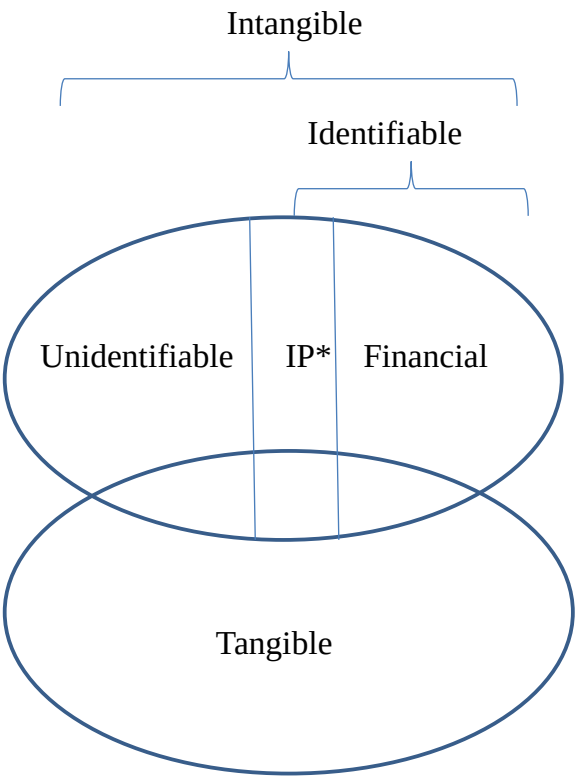
Figure 2.2 Identifiable vs. Unidentifiable Intangible Assets

Category		Example
Identifiable Intangible Assets	Can be separately measured Can exist independently of the business	Copyright Patent
Unidentifiable Intangible Assets	Cannot be separately measured Cannot exist independently of the business	Goodwill Human capital

Figure 2.3 depicts the composition of a firm's assets. As indicated in the graph, identifiable intangible assets include intellectual property and financial assets. Patents, copyrights, and trademarks are examples of intellectual property. All financial assets are intangible in nature, such as bonds and stocks held as investments, although some of them are securitized by physical assets. They represent ownerships of future benefits. Human capital and

organizational capital are examples of unidentifiable intangible assets. Some identifiable and unidentifiable intangible assets are listed on a firm's balance sheet, while other identifiable and unidentifiable intangible assets are not reported on any financial statements until some transactions trigger their recognition, such as an acquisition (Cohen 2005). In the accounting literature, these unrecognized identifiable and unidentifiable intangible assets contribute to the gap between a firm's book value and market value. Some tangible assets associate with intangible assets. For example, an airplane is a tangible asset but also a virtual repository of patented technologies (Cohen 2005). This is why there is an overlap between a firm's tangible assets and intangible assets.

Figure 2.3 Assets of a Firm



*IP: Intellectual Property
Source: Intangible Assets: Valuation and Economic Benefits (Cohen, 2005)

Market-to-book ratio has been used to measure the discrepancies between market value and book value for publicly traded firms. Lev (2001 p.9) documented an upward trend for Standard and Poor 500 (S&P 500) companies for the period from the 1980s to the 2000s. The market-to-book ratio has been continuously increasing from the value of 1.0 in the early 1980s to the value of 7.5 in the early 2000s for those companies (Lev 2001). In addition, a shift in the make-up of the market value of publicly traded firms is documented by Blair and Wallman (2001). Twenty percent of corporate value was due to intangibles in 1978. This figure increased to 80% in 1999 (Sullivan Jr and Sullivan Sr 2000).

2.2 Importance of Intangible Assets

2.2.1 Intangible Assets and Resource-Based View

The resource-based view of the firm is one of the dominant streams of research of understanding how a firm can achieve sustainable competitive advantages in the 1990s. How to achieve sustainable competitive advantages is a fundamental question that strategic management strives to answer. Several approaches have been proposed to solve this puzzle, such as, industrial organization and resource-based view.

First named by Wernerfelt (Wernerfelt 1984), resource-based view provides a different angle from the perspective of industrial organization economics to study strategic management. Old industrial organization relies upon the Structure-Conduct-Performance paradigm to connect the market with industry performance. It starts the analysis from the market structure, then moves to firm conducts, and ties this analysis with industry profitability (Scherer and Ross 1990).

New industrial organization centers its research on game theory, and starts its analysis with the firm (Wernerfelt and Montgomery 1986; Rumelt 1991). From the unit of analysis point of view, resource-based view is closer to new industrial organization research.

Resource-based view shifts the research focus from industry level to firm level, from product perspective to resource perspective. Wernerfelt (1984) describes resources and products as *"For the firm, resources and products are two sides of the same coin."* Although not officially named until Wernerfelt (1984), the same concept can be traced to several earlier classic works of Penrose (1959) and Andrews (1971).

Penrose (1959) proposes the idea that firms can be considered as a broader set of resources. This idea is widely accepted as the first contribution Penrose makes to resource-based view. The second contribution credited to Penrose is through a sequential balance use of external and internal resources, an optimal pattern of firm expansion can be achieved. Penrose holds a different view from traditional economics, which ignores human factors in its analysis. The manager is added into Penrose's equation. In Penrose's theory, managers pursue profits, and seek economic growth. Nevertheless, the growth is limited by managerial constraints. These classic works focus upon social wealth, which is in line with old industrial organization, rather than the appropriation of wealth (Andrews 1971; Penrose 1959).

Resource-based view suggests that firms can gain sustainable competitive advantages through possessing and utilizing a bundle of strategic resources. Wernerfelt (1984) borrows the definition of resources from Caves:

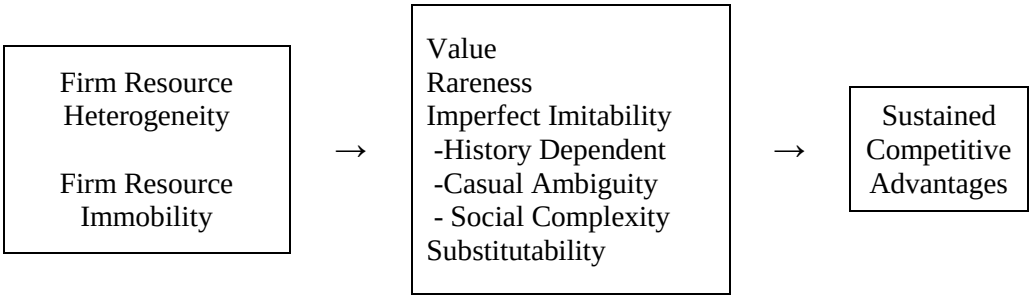
"a firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semipermanently to the firm"(Caves 1980)

Wernerfelt (1984) proposes the concepts of resource position barrier and resource-product matrices, which are similar to entry barriers and growth-share in product analysis. According to Wernerfelt (1984), first mover advantages can be explained through the concept of resource position barriers. A first mover advantage in an attractive resource is expected to yield high returns in the markets where the resource in question is dominating. Therefore, firms should strive to develop and possess such barriers, and then incorporate these possessed barriers in the resource-product matrix. Resource-product matrix will then lead to the consideration of alternative grow paths for the firms. For example, sequential entry, in some specific situations, will provide a better return.

Wernerfelt (1984) adopts a positive approach in developing resource-based view. He gives descriptions on "What firms do", and will predict firm behaviors given a set of assumptions. However, Barney (1991) adopts a narrative approach to further build resource-based view. He tries to give guidelines on "What firms should do" and "How to do".

Barney (1991) goes a step further to propose two preconditions for a sustainable competitive advantage to exist, and four attributes a firm resource must have in order to be able to generate sustainable competitive advantages. According to Barney, firm resources must exhibit heterogeneity, and be imperfectly mobile for a sustainable competitive advantage to exist. In addition, a resource must be valuable, rare, imperfectly imitable, and there cannot be strategically equivalent substitutes (Barney 1991).

Figure 2.4 Resource-Based View



Source: Firm Resources and Sustained Competitive Advantage (Barney 1991)

According to resource-based view, regardless of industry, each individual firm possesses idiosyncratic resources that distinguish itself from its competitors, and the firm's most critical resources are intangible assets (Itami and Roehl 1987). Intangible assets are those that are difficult to be imitated by competitors, therefore, can help provide sustainable competitive advantages for a firm.

2.2.2 Intangible Assets and Co-Alignment Model

The co-alignment model is introduced by Olsen et al. (1998), which addresses how a firm can achieve sustainable competitive advantages. The concept of fit or alignment actually predated industrial organization's positioning approach (Powell 1992). However, industry-level positioning approach dominated strategic management research in the 1980s (Scherer 1980; Porter 1980, 1985). In the 1990s, resource-based view switched researchers' attention from industry-level to firm-level.

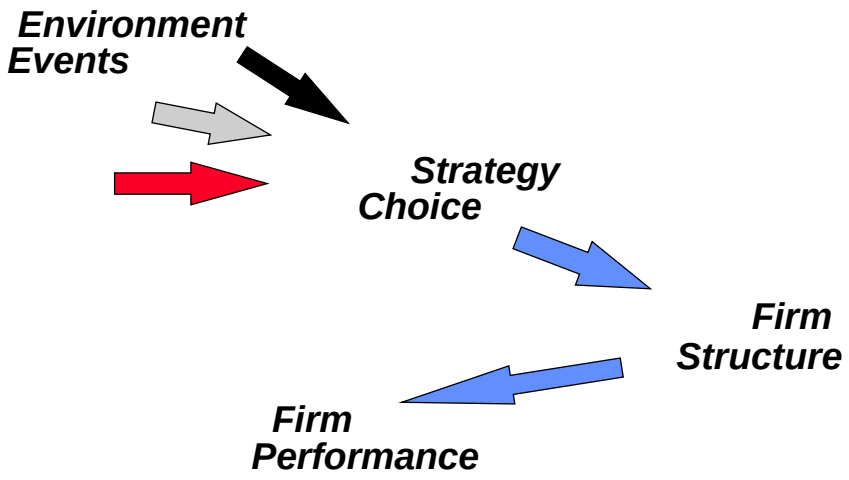
Rather than shifting the entire focus from industry-level to firm-level, co-alignment theory proposed a combination view on firm strategy management (Olsen et al. 2008). The

center of co-alignment theory is a four-factor model that incorporates both industry-level analysis and firm-level analysis into a strategic management process.

"the concept of strategic management refers to the ability of the management of the firm to properly align the firm with the forces driving changes in the environment in which the firm competes."

------*(Olsen et al. 2008)*

Figure 2.5 The Co-alignment Model



Source: Strategic Management in the Hospitality Industry (Olsen et al. 2008)

To achieve this alignment, a firm must first constantly examine the external environment carefully to identify and monitor those important value drivers that will potentially pose threats or bring opportunities to the firm. After environmental scanning, the second step is to propose competitive methods that will help the firm to alleviate the threats and take advantage of the

opportunities identified previously. Then, the next step is to allocate appropriate resources to facilitate the pursuit of the proposed competitive methods. The last step in this alignment process is to evaluate the firm performance in regards to how well the firm has responded to an identified external event with the proposed competitive methods (Olsen et al. 2008).

One of the key elements in this alignment is to integrate a firm's core competencies with the proposed competitive methods. The level of the competitive advantages and the financial benefits a firm can achieve depend on the level of the integration between the firm's core competencies and the firm's competitive methods (Olsen et al. 2008). Core competencies are things that a firm does well, which can help the firm to achieve competitive advantages (Prahalad and Hamel 1990; Hamel and Prahalad 1994; Andriessen et al. 1999; Olsen et al. 1998). As such, core competencies are not only built upon intangible assets, but are also critical intangible assets themselves. Therefore, co-alignment theory addresses the importance of intangible assets of a firm.

2.3 The Measurement of Intangible Assets

Unlike tangible assets that are recorded on a firm's balance sheet with certain values, most intangible assets are usually not recognized on a firm's balance sheet. Instead of being capitalized, intangible assets are expensed on a firm's income statement as incurred, even though they may create future value to the firm (Kwansa et al. 2008). Due to the nature of intangible assets, it is not hard to image the difficulties both researchers and practitioners have encountered in valuing intangible assets. In order to measure intangible assets, different dimensions have been created. Identifying the dimensions of intangible assets is a controversial area in the literature. Numerous researchers have dedicated attention to developing the dimensions of

intangible assets for better measurement, among which human capital is the most common identified dimension (Bontis 1996; Roos et al. 1998; Lev 2001; Sullivan 2000; Stewart 1997). Some other common dimensions are relational capital (Bontis 1996), innovation capital (Edvinsson and Malone 1997; Lev 2001), customer capital (Edvinsson and Malone 1997; Stewart 1997; Kaplan and Norton 1992) and structural capital (Roos et al. 1998; Bontis 1996; Stewart 1997).

2.4 Intangible Assets and Hospitality Industry

Both resource-based view and co-alignment theory indicate the importance of intangible assets of a firm. The intangible assets portion of a firm's total assets has been increasing dramatically since the 1970s (Sullivan Jr and Sullivan Sr 2000). Intangible assets are playing an increasingly dominant role in value creation (Lev 2001). Therefore, many efforts have been devoted to measuring and valuing intangible assets. Current literature has identified sources of intangible assets (Green 2004; Andreas et al. 2007; Green and Ryan 2005). Valuation techniques of intangible assets are proposed, such as the introduction of a balanced scorecard (Kaplan and Norton 1992; Melymuka 2004; Kaplan and Norton 1996). Such intangible assets have been linked to the financial performance of a firm (Sriram 2008; Hua et al. 2007; Gillis 2003). Existing literature, however, mainly focused on high tech related firms, in which intangible assets usually occupy dominant portions of the balance sheets (Sriram 2008; Andreas et al. 2007; Green and Ryan 2005; Green 2004). As such, further research is recommended in various industries, because the sources of intangible assets vary depending on the industries investigated (Andreas et al. 2007).

In terms of market capitalization, casual dining restaurant firms usually fall into small to middle categories. Except Darden Restaurants, none of the other casual dining restaurant companies is listed on the S&P 500 index. The average market-to-book value was 2.72 in 1998 and 3.25 in 2001 for casual dining restaurants, which is much lower than the 7.5 of S&P 500 firms. To study intangible assets in the hospitality industry, it would be necessary to examine the evolution of casual dining restaurant firms' intangible assets and tangible assets.

Limited research has been conducted within the hospitality industry with regard to measuring and valuing intangible assets. More attention has been given to hotels, rather than to restaurants, in the form of case studies with focus on hotel valuation (Hua et al. 2007; Hsu and Jang 2008; Jerman and Kavcic 2010; O'Neill and Belfrage 2005; Jerman et al. 2009; Kinnard Jr et al. 2001). There are two pioneering studies focused on the casual dining restaurant industry.

A comprehensive set of intangible assets measurements has been developed for human capital related intangible assets, as well as for organizational capital related intangible assets under the setting of casual dining restaurant industry (Lee 2011; Murphy 2006). Murphy (2006) conducted an exploratory study aiming to development an HPWP (High Performance Work Practices) measurement in the US casual dining restaurant segment as performance metrics for operating managers to judge effectiveness. The study yield thirteen HRM dimensions applicable for US casual dining restaurant segment: training and skill development, information sharing, employer of choice, selectivity in recruiting, measurement of the HR practices, promotion from within, quality of work/life, diversity, incentive pay based on performance appraisal, participation and empowerment, self-managed teams, employee ownership and high wages are the relevant dimensions to the casual dining restaurant service industry.

Lee (2011) identified key organizational-centric intangible assets in the context of casual dining restaurant industry and developed their measurements. Six domains of organizational capital were identified and seventeen measurement indicators were developed. The six domains are innovation capital, organizational process capital, organizational culture capital, organizational learning capital, information system capital, and intellectual property capital.

These developments contribute to the hospitality literature on measurement of intangible assets. Despite these contributions, the question of whether the distinct features of casual dining restaurant firms (e.g. relatively small market capitalizations and low market-to-book ratios) mandate a different composition of corporate value with regard to tangible assets and intangible assets remains unanswered. In addition, no quantitative research has been conducted to link these intangible assets measurements to the market value of casual dining restaurant firms.

2.5 Research Questions and Hypotheses

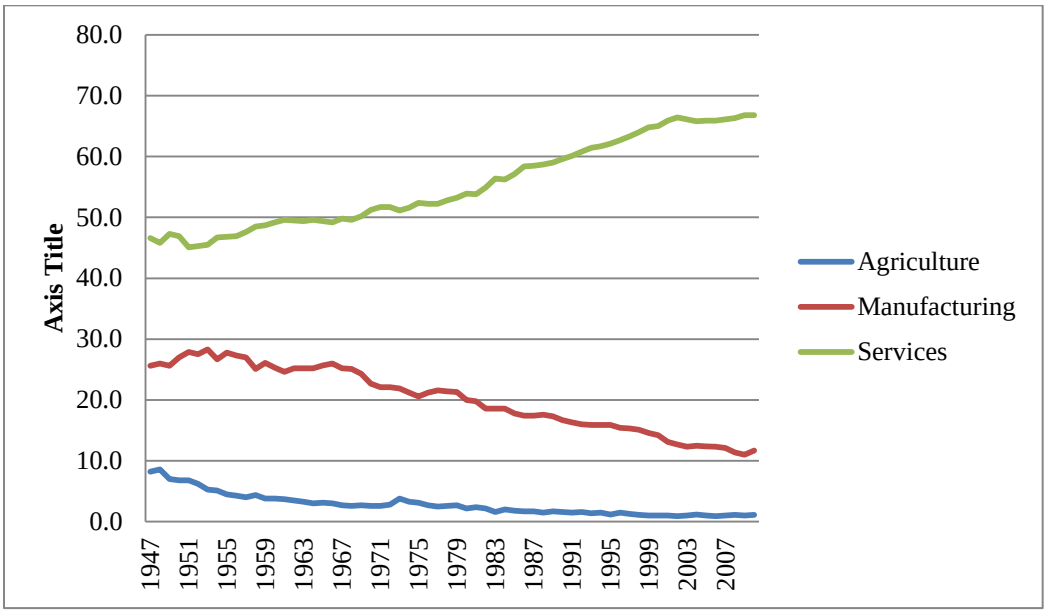
The research questions of this study will focus on intangible assets valuation in the casual dining restaurant industry. The importance of intangible assets at both the industry level and the firm level gives rise to this choice.

Research Question 1: What is the effect of the appreciation in land and buildings on the market-to-book ratio in the casual dining restaurant industry?

The state of the economy in the United States has been gradually evolving since World War II. The term, New Economy, started appearing on leading business magazines and academic journals since the 1980s (Alexander et al. 1983; Carnevale 1991; Teece 1998). It has been widely

accepted that the U.S. economy has transited from a manufacturing-based economy to a service-based economy (Kwansa et al. 2008). Figure 2.6 presents the change of the U.S. GDP composition by industry since 1947. The contribution of the service industry[1] to overall GDP has been constantly increasing from 47 percent in 1947 to 68 percent in 2010[2].

Figure 2.6 U.S. GDP by Industry



The manufacturing-based economy is known as the mass production economy while the service-based economy is known as the new economy. A new set of competitive standards have distinguished the new economy from the mass production economy. The ability to improve productivity was the central focus of competitions in the mass production economy. In the new economy, however, the competition focus has transited to the ability to "deliver quality, variety, customization, convenience, and timeliness" (Carnevale 1991). Investments in psychical assets,

[1] The service industry includes whole sale trade, retail trade, transportation and warehousing, information, finance, insurance, real estate and leasing, professional and business services, educational services, health care, and social assistance, arts, entertainment, recreation, accommodation, and food services.
[2] Data source: U.S. Department of Commerce Bureau of Economic Analysis http://www.bea.gov/industry/gdpbyind_data.htm

such as equipment, plants and office buildings used to be the primary economic growth driven factors in the manufacturing-based economy. Whereas, investments in intangible assets, such as social, organizational, reputational and intellectual capitals are primary economic growth drivers in the new economy (Blair and Wallman 2001; Kwansa et al. 2008).

Intangible assets are important not only at the industry level in the new economy, but also at the individual firm level. As previously stated in the introduction section, the intangible assets portion of a firm's total assets has been increasing dramatically since the 1970s (Sullivan Jr and Sullivan Sr 2000). Intangible assets used to make up 20% of corporate value in 1978. This figure increased to 80% in 1999 (Sullivan Jr and Sullivan Sr 2000). As a labor-intensive industry, intangible assets such as human capital are critical to casual dining restaurants' success (Kwansa et al. 2008). Previous research, however, mainly focused on S&P 500 cross-industry firms. In terms of market capitalization, casual dining restaurant firms usually fall into small to middle categories. Except Darden Restaurants, none of the other casual dining restaurant companies is listed on the S&P 500 index. The market-to-book ratio has been continuously increasing from the value of 1.0 in the early 1980s to the value of 7.5 in the early 2000s for S&P 500 firms (Lev 2001). Whereas, the average market-to-book value was 2.65 in 1998 and 3.32 in 2001 for casual dining restaurants, which is much lower than the 7.5 of S&P 500 firms. Although the market-to-book ratio is increasing, the rate for casual dining restaurant firms is different from the rate for S&P 500 firms. Limited attention has been given to the composition of a firm's assets in the

As discussed earlier, the market value and book value of a publicly traded firm are rarely the same. The difference between a firm's market value and book value is called market premium. A portion of the market premium is allocated to tangible assets for reasons such as increased value of inventories, equipment, land or buildings. The other portion of the market

premium is attributed to intangible assets. For casual dining restaurants, inventories usually are short-term in nature (Olsen et al. 2008). There are several different methods to value inventories, for example, First in First Out, Last in First Out or Weighted Average Cost methods. All of these inventory valuation methods incorporate market conditions in the valuation process, so that the difference between inventories' book value and market value is not significant. Thus, inventories do not contribute a large portion to the market premium. Land and buildings, whereas, are valued at historical costs on a firm's balance sheet. Market conditions are not considered in the value presented. The price changes of commercial real estates have experienced several cycles since the 1950s. In the hospitality industry, land and buildings usually take up a large portion of tangible assets on a firm's balance sheet (Williams 2002). Given the insignificance contribution from inventories, the appreciation of land and buildings constitute the majority portion of market premium allocated to tangible assets (Williams 2002). Therefore, it is necessary to examine the impact of land and buildings appreciation on market-to-book ratio.

H1: The appreciation in land and buildings has a positive impact on the increase in the market-to-book ratio in the casual dining restaurant industry.

Research Question 2: What is the impact of franchising decisions on the market-to-book ratio in the casual dining restaurant industry?

The franchising sector is projected to generate 472 billion dollars in 2013 for the U.S. economy, which is approximately 3.4 percent of U.S. total GDP. The quick service restaurant industry is the largest business line in franchising, which will provide more than three million jobs in 2013. The casual dining restaurant industry belongs to the Table/Full service restaurant category, which ranks second in employment in 2013 (Insight 2012). 56.3% of quick service

restaurants and 13.1% of tableful service restaurants are franchised units (Aliouche and Schlentrich 2009). Franchising has attracted growing interest from both business professionals and academic researchers since the 1950s. As a method of distribution, franchising is commonly perceived as strategically and operationally beneficial to franchisor companies due to greater administrative efficiency, more efficient risk sharing, and a reduction in resource constraints (Aliouche and Schlentrich 2009; Spinell Jr et al. 2003). A number of previous studies have attempted to compare the financial performance of firms that adopt franchising and firms that do not adopt franchising with empirical evidence (Spinell Jr et al. 2003; Michael 2002; Alon et al. 2004; Combs and Ketchen 1999). Mixed results have been reported from previous research. Empirical evidence was found to support that franchising firms outperform non-franchising firms financially (Michael 2002; Spinell Jr et al. 2003; Aliouche and Schlentrich 2009). However, other studies have found contradictory or non-significant results (Combs and Ketchen 1999; Alon et al. 2004).

Franchising has been defined as a business format that rents intangible proprietary assets and as the operation of a decentralized production or distribution process (Caves and Murphy 1976; Spinell Jr et al. 2003). Administrative efficiency is among the most commonly identified measures for organization capital in the hospitality industry (Murphy 2006; Lee 2011). The financial performances of franchising restaurant firms and non-franchising restaurant firms have been compared in previous research. The results, however, were mixed. Aliouche and Schlentrich (2009) found that franchising restaurant firms outperformed non-franchising restaurant firms from 1993 to 2002, while Alon, Drtina, and Gilbert (2004) and Combs and Ketchen (1999) reported contradictory results. In previous studies, financial performance has been measured with ROA, ROE, EVA and MVA (Michael 2002; Spinell Jr et al. 2003; Alon et

al. 2004; Aliouche and Schlentrich 2009). Since franchising involves renting intangible assets, this study aims to examine whether franchising brings a positive impact to a casual dining restaurant firm's intangible value. Thus, hypothesis three is proposed:

H2: Franchising positively affects casual dining restaurant firms' market-to-book value.

Research Question 3: How do intangible assets contribute to the market value of a firm in the casual dining restaurant industry?

Intangible assets are playing an increasingly dominant role in value creation (Lev 2001). Therefore, many efforts have been devoted to measuring and valuing intangible assets. Current literature has identified sources of intangible assets (Green 2004; Andreas et al. 2007; Green and Ryan 2005) and the valuation techniques of intangible assets are proposed, such as the balanced scorecard (Kaplan and Norton 1992; Melymuka 2004; Kaplan and Norton 1996). Such intangible assets have been linked to the financial performance of a firm (Sriram 2008; Hua et al. 2007; Gillis 2003; Chen et al. 2005). Existing literature, however, mainly focused on high tech related firms, in which intangible assets usually occupy dominant portions of the balance sheets (Sriram 2008; Andreas et al. 2007; Green and Ryan 2005; Green 2004). As such, further research is recommended in various industries, because the sources of intangible assets vary depending on the industries investigated (Andreas et al. 2007).

Limited research has been done within the hospitality industry with regard to measuring and valuing intangible assets. More attention in intangible assets research has been given to hotels, than to restaurants, in the form of case studies with focus on hotel valuation (Hua et al. 2007; Hsu and Jang 2008; Jerman and Kavcic 2010; O'Neill and Belfrage 2005; Jerman et al. 2009; Kinnard Jr et al. 2001). A comprehensive set of intangible assets measurements has been

developed for human capital related intangible assets, as well as for organizational capital related intangible assets under the setting of the casual dining restaurant industry (Lee 2011; Murphy 2006). However, all previous research is conceptual in nature. No quantitative research has been conducted to link these intangible assets measurements to the market value of casual dining restaurant firms. This study attempts to fill the gap in our knowledge to quantify the value of intangible assets in the casual dining restaurant industry.

Based on the literature review, five measurements have been selected in this study in order to assess the intangible asset value: research and development (R&D), training, advertising, extra labor, and extra pension (Ke et al. 2004; Chauvin and Hirschey 1993; Godfrey and Koh 2001; Kaplan and Norton 1996; Andreas et al. 2007; Wyatt and Frick 2010; Hall 1999). These variables are investments that will help create potential future intangible value for a firm, but they are not recognized as assets on a firm's balance sheet. Instead, they are expensed as incurred (Chauvin and Hirschey 1993; Godfrey and Koh 2001). The expensing treatment of intangible asset investments leads to the problem of unrecognized intangible assets on a firm's balance sheet, which ultimately contributes to the difference between a firm's market value and book value.

Intangible assets have been defined differently by researchers. Knowledge, experience, expertise, soft assets, and employee competence are commonly identified attributes in various intangible assets definitions. In addition, different dimensions of intangible assets are proposed by researchers, such as, human capital, social capital, organizational capital, customer capital, relational capital, innovational capital and structural capital.

R&D activities critically link to many of the intangible assets attributes and dimensions, such as knowledge, expertise, employee competence, human capital and innovational capital. To conduct R&D activities, a firm needs to retain the right talent and possess the necessary knowledge. Both talent and knowledge are valuable intangible assets to the firm. Successful R&D projects will create competitive advantages and create future value for a firm (Ke et al. 2004; Hall 1999). Therefore, R&D spending itself is also an intangible asset. Players in the restaurant industry are competing to maintain current customers and attract new customers with their signature menu items as well as with their newly created menu items. Restaurant firms not only have to pay close attention to the current market trends, but also should be able to identify future changes in customer taste. The original purpose for food consumption is to survive. With the discovery of more and more edible ingredients as well as the continuous inventions of new cooking techniques and equipment, the purpose of food consumption has evolved from meeting basic survival need to fitting a certain lifestyle (Sualakamala and Huffman 2010).

"Food is a lot like fashion, there are trends and fads. What is popular one day is taboo the next."

---------(Mealey 2013)

In order to obtain a competitive edge, restaurant firms first have to constantly monitor the external environment and identify potential future hot trends in customer taste. Then efforts need to be devoted to creating new menu items to capture the new trends. For example, healthy food and local ingredients have become hot trends in recent years (Anonymous 1993; Berta 2003; DiPietro et al. 2004; Chen et al. 2009). The capability of coming up with new menu items to satisfy customer demands will create future value for restaurant firms. The heart of this

capability is research and development. Therefore, research and development is a critical construct in measuring a firm's intangible assets.

Training activities link closely to the human capital of a firm's intangible assets. Effective training activities will help a firm to develop the right talent with appropriate skill set, therefore, creating competitive advantages and future value for a firm (Wyatt and Frick 2010). Training is important in the hospitality industry because the hospitality industry is a service industry. The delivery of final products requires extensive employee involvement during the process. Training has been recognized as a contributing factor to customer satisfaction, which will lead to customer retention and profit growth (Chartrungruang et al. 2006; Richardson 2009). Therefore, training is included as a measurement in valuing intangible assets in the hospitality industry.

If employees are paid more in a firm than in the firm's competitors, it might increase employees' loyalty and satisfaction (Kaplan and Norton 1996; Andreas et al. 2007). Pensions have been found to have positive effects on employee recruitment, motivation and loyalty (Terry and White 1997). Paying a higher level of salaries and pensions to employees compared to the industry median will help a firm achieve employee satisfaction and loyalty, which in turn will help the firm retain the best talent and reduce turnover rates. High turnover rate has been well acknowledged as a distinct feature of the hospitality industry (Carbery et al. 2003; Nadiri and Tanova 2010). A positive link has been documented between employee satisfaction and customer loyalty as well as financial performance in the retail industry (Low and Kalafut 2002; Kwansa et al. 2008).

Advertising activities link to customer capital, social capital, and organizational capital of a firm. Advertising helps a firm to create its brand value and spread its brand image among current and potential customers (Hua et al. 2007). Brand equity is one of the most important intangible assets a firm can possess, which creates price premiums. In previous research, advertising was reported to increase a firm's cash flows and intangible value (Srivastava et al. 1998; Abdel-khalik 1975; Hirschey 1982). Advertising was considered a contributor to intangible assets in the hospitality industry in previous research (Hsu and Jang 2009, 2008). Therefore, it is necessary to investigate how these investments have actually contributed to the value of a firm's intangible assets. Accordingly, the following hypotheses are proposed:

H3a: Research and development has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3b: Training has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3c: Advertising has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3d: Extra labor cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3e: Extra pension cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

Research Questions 4: Is there any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs?

The casual dining restaurant industry is one of the largest segments in the U.S. restaurant industry. Casual dining restaurants (CSR) are typically full-service restaurant chains that serve moderately priced entrees in a casual atmosphere. They often carry beer and wine licenses and offer appetizers, beverages, as well as desserts with average checks around $20 per person (Mintel 2012). As indicated in Figures 2.7 and 2.8, the total sales of casual dining restaurants in 2011 were $113.5 billion, which were about one third of total U.S. restaurant sales. A number of these casual dining restaurants are operated under national chains with public data available for research purposes. There are 13 casual dining restaurant firms that are included in this study: Applebee's International Inc., Bloomin' Brands Inc., Brinker Intl Inc., Cheesecake Factory Inc., Darden Restaurants Inc., Dine Equity Inc., O' Charley's Inc., OSI Restaurant Partners Inc., P F Chang's China Bistro Inc., Rare Hospitality Intl Inc., Red Robin Gourmet Burgers Inc., Ruby Tuesday Inc., and Texas Roadhouse Inc.

The quick service restaurant industry is another large segment in the U.S. restaurant industry. Quick service restaurants (QSR) are typically limited-service restaurants that provide inexpensive food and quick service with average checks of $8 per person. The quick service restaurant industry has a total sales of $181 billion in 2011, as shown in Figure 2.9. Similar to casual dining restaurants, many quick service restaurants carry national-chain brands, such as McDonalds, Wendy's, Burger King, Hardee's, Jack in the Box, Papa John's International, Krystal, Domino's Pizza, Subway, and Yum Brands which owns KFC, Pizza Hut and Taco Bell. However, not all of these firms are publicly traded during the period of interest.

Due to the differences in business domains between casual dining restaurant firms and quick service restaurant firms, the importance of each measurement in valuing intangible assets in the hospitality industry might vary. Therefore, the fifth research question is proposed.

H4: Whether there is any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs.

Figure 2.7 Total U.S. Restaurant Sales

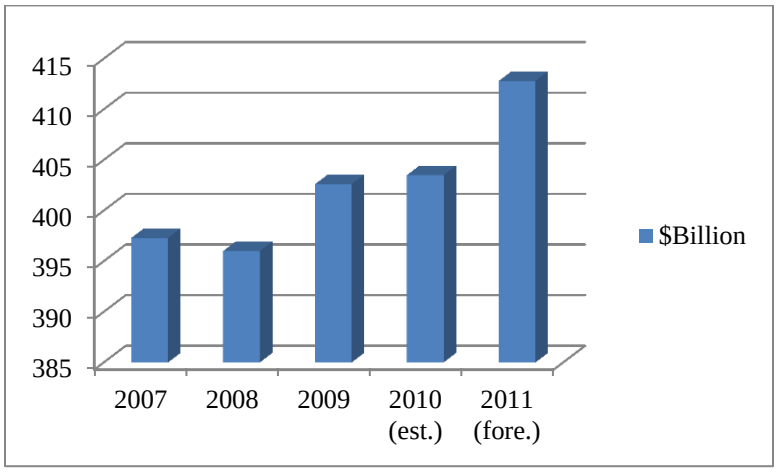


Figure 2.8 U.S. Casual Dining Restaurant Sales

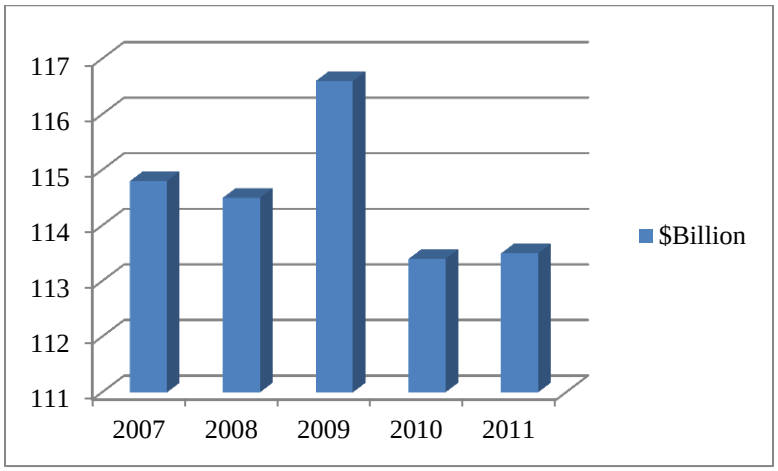
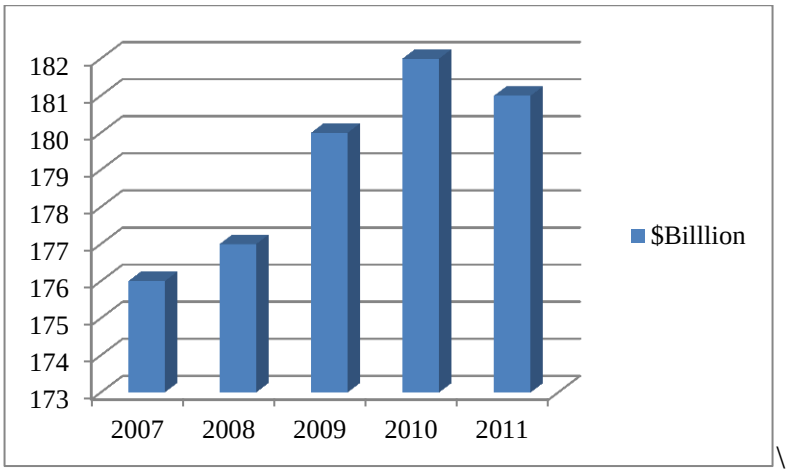


Figure 2.9 U.S. Quick Service Restaurant Sales



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2.6 Summary

This chapter provides a review of literature from different disciplines on intangible assets. It includes the different definitions of intangible assets and the definition this study adopts.

Drawing from strategic management literature, resource-based view stresses the importance of obtaining intangible assets to achieve sustainable competitive advantages. In the hospitality literature, the co-alignment principle indicates the critical role of intangible assets in the process of achieving strategic alignment. Lastly, accounting literature reveals the problems exist in the current treatment of intangible asset investments in a firm's Balance Sheet. After reviewing the literature, research questions of this study are proposed. This study will proceed to examine intangible assets valuation in the casual dining restaurants industry

Chapter Three Methodology

3.1 Introduction

This chapter will provide information regarding the methodology and research process employed by this study. In particular, the research questions and hypotheses, research methods, models, samples, and data collection will be discussed.

3.2 Research Questions and Hypotheses

Based on the literature review presented in Chapter Two, four research questions and eight hypotheses are proposed for this study.

3.2.1 Research Questions

1. What is the effect of the appreciation in land and buildings on the market-to-book ratio in the casual dining restaurant industry?

2. What is the impact of franchising decisions on the market-to-book ratio in the casual dining restaurant industry?

3. How do intangible assets contribute to the market value of a firm in the casual dining restaurant industry?

4. Is there any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs?

3.2.2 Hypotheses

To answer these research questions, the following hypotheses are proposed.

H1: The appreciation in land and buildings has a positive impact on the increase in the market-to-book ratio in the casual dining restaurant industry.

H2: Franchising positively affects casual dining restaurant firms' market-to-book value.

H3a: Research and development has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3b: Training has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3c: Advertising has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3d: Extra labor cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3e: Extra pension cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H4: Whether there is any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs.

3.3 Research Method

3.3.1 Multivariate Analysis

Multivariate analysis is a set of statistical techniques that allow researchers to investigate multiple measurements simultaneously (Hair et al. 2006). Specifically, multiple regression will be applied to analyze the first, second, third, and fourth research questions. Multiple regression examines how dependent variables would change when any one of the independent variables changes. To answer research questions one, two, three, and four, multiple regression will be performed to investigate how market-to-book ratio has changed due to appreciation in land and buildings; and how firm value changes with the change of intangible value.

Due to the nature of finance panel data, regression with firm and year dummy variables is chosen to address the issue of biased estimation of coefficients and standard errors with the ordinary least squares (OLS) method. Finance panel data sets are made up by observations on multiple firms across multiple time periods (Thompson 2011). Correlation will not only show up between firms at a given time period when there is a market-wide shock, but also show up across different time periods within a firm when there is a persistent firm-specific shock. In addition, correlation can also be induced between different firms in different periods by a persistent common shock, for example, a business cycle (Thompson 2011). Since panel data violates the Independent and Identically Distributed assumption made by OSL, OSL will produce biased standard errors and either over or underestimated coefficients (Petersen 2009). Adding firm fixed effect and year fixed effect dummy variables into the multiple regression analysis will mitigate the correlation problem of finance panel data.

3.3.2 Pearson Correlation

Pearson correlation is a measure of the strength of linear dependence between two variables. Pearson correlation will be employed to answer the first research question. The strength of linear dependence between a firm's market-to-book ratio and its unrecognized appreciation in land and buildings will be tested with Pearson correlation.

3.3.3 Hausman Test

A Hausman test is employed to determine fixed effects and random effects in a multiple regression model. The sample data in this study is panel data in nature. Panel data contains multiple observations for one individual at different time points. A Hausman test will help to determine the efficiency of fixed models and random models with panel data.

3.4 Variables and Model

3.4.1 Mark Value

Market value is a firm's year-end closing share price times total outstanding common shares at year-end for a certain year. Market value represents the price investors are willing to pay for a firm, considering not only the firm's assets and liabilities, but also its growth potential, profit generating capabilities, and remain profits in the future (Kwansa et al. 2008; Myers 1977).

3.4.2 Book Value

Book value is a firm's total equity value on its balance sheet at year-end, which equals total assets minus total liabilities. Preferred stock is also deducted from total assets, if any (Kwansa et al. 2008). The difference between market value and book value includes both tangible assets premium and unrecognized and underreported intangible assets. Book value is usually different from a firm's market value. The difference between a firm's market value and book value is called market premium. Market premium includes both appreciations in intangible assets and unrecognized intangible assets for a firm. Tangible assets are those assets that can be seen, touched and felt. Some of the common tangible assets are cash, marketable securities, inventories, land, buildings and equipment. This account is recorded on a firm's balance sheet. In this study, the term "intangible assets" will be used to refer to all of a firm's intangible assets that are not recorded or underreported on its balance sheet. Unrecognized intangible assets represent the difference between a firm's market value and book value that cannot be attributed to tangible assets.

3.4.3 Unrecognized Appreciation in Land and Buildings

Land and buildings represent the historical cost that a firm has spent on such items as recorded on its balance sheet. Land and buildings appreciate over time in market value. They constitute a significant portion of a hospitality firm's tangible assets. In order to quantify the appreciation in land and buildings in the casual dining restaurant industry, a general real estate price index for commercial buildings will be considered as a benchmark. The calculation process for Unrecognized Appreciation in Land and Buildings is presented in Equitation 3-1.

$$L\&B_{ua} = L\&B_{Historical} \times CI \div TotalAssets \quad (3\text{-}1)$$

Where $L\&B_{Historical}$ is the historical costs recorded on a firm's balance sheet. CI is the percentage change in Moody's Real Commercial Property Price Indices.

3.4.4 Research and Development Cost

The R&D cost is the expenditure associated with activities that will help a firm to create new products and services, or to improve current products and services. Successful R&D projects will create competitive advantages and create future value for a firm (Ke et al. 2004; Chauvin and Hirschey 1993). These expenditures, however, are usually expensed as incurred, instead of being capitalized on balance sheets. In other words, R&D activities may create future value for a firm, but current accounting treatments on R&D do not allow a firm to show this potential future value on its balance sheet. These treatments lead to the problem of unrecognized intangible assets.

3.4.5 Training Cost

The training cost is the expenditure associated with employee training activities. The purpose of training is to uphold the quality of a firm's products and services and to maintain customer satisfaction. Effective training activities will help a firm to create competitive advantages and future value for the firm (Kwansa et al. 2008). Similar to R&D cost, training cost is expensed as incurred, which leads to an unrecognized intangible assets problem.

R&D cost and training cost are not separately reported on income statements for casual dining restaurant firms. Instead, these costs are included in the Selling, General & Administrative Expenses (SG&A) account, together with advertising and other costs. In order to estimate the R&D and training cost, the following equation is used.

$$R\&D\&T_{sa} = \frac{\left[\left(\frac{SG\&A - Advertising}{Sales}\right)_f - \left(\frac{SG\&A - Advertising}{Sales}\right)_{im}\right] \times Sales_f}{Total\ Assets} \quad (3\text{-}2)$$

Where $\left(\frac{SG\&A - Advertising}{Sales}\right)_f$ is an individual firm's estimated R&D and training costs standardized by sales, $\left(\frac{SG\&A - Advertising}{Sales}\right)_{im}$ is the industry median estimated R&D and training costs standardized by sales. This variable is standardized by Total Assets to be consistent with the dependent variable.

If a firm's R&D and training activities are effective, which means they are creating value for the firm, this variable should move positively with the difference between a firm's market value and book value. However, if this variable moves negatively with the market-to-book difference, it might be an indication of inefficiency in the firm's SG&A spending.

3.4.6 Additional Advertising Cost

Advertising cost is the expenditure a firm spends to promote its products and services and to attract customers to make a purchase. Advertising cost is separately reported on a firm's income statement. Labor cost in this study is calculated through the Equation 3-3.

$$\text{Advertising}_{sa} = \frac{\left[\left(\frac{\text{Advertising}}{Sales}\right)_f - \left(\frac{\text{Advertising}}{Sales}\right)_{im}\right] \times Sales_f}{Total\ Assets} \quad (3\text{-}3)$$

Where $\left(\frac{\text{Advertising}}{\text{Sales}}\right)_f$ is an individual firm's advertising cost standardized by its sales, $\left(\frac{\text{Advertising}}{\text{Sales}}\right)_{im}$ is the industry median advertising cost standardized by sales. This variable is standardized by Total Assets to be consistent with the dependent variable.

3.4.7 Additional Labor Cost

The labor cost is the expense incurred for paying wages, salaries, and manager incentive compensations, etc. in restaurant firms. Comparing a firm's labor cost to the industry median will show where the firm stands among its competitors. If employees are paid more in a firm than in the firm's competitors, it might increase employees' loyalty and satisfaction. Happy employees will then help the firm to keep its customers happy and create brand value, which is an important intangible asset (Kaplan and Norton 1996; Low and Kalafut 2002). This intangible asset may not be captured on the firm's balance sheet, since labor cost is expensed as incurred instead of being capitalized. Labor cost in this study is calculated through the Equation 3-4.

$$Labor_{sa} = \frac{\left[\left(\frac{Labor}{Sales}\right)_f - \left(\frac{Labor}{Sales}\right)_{im}\right] \times Sales_f}{Total\ Assets} \tag{3-4}$$

Where $\left(\frac{Labor}{Sales}\right)_f$ is an individual firm's labor cost standardized by its sales, $\left(\frac{Labor}{Sales}\right)_{im}$ is the industry median labor cost standardized by sales. This variable is standardized by Total Assets to be consistent with the dependent variable.

3.4.8 Additional Pension Cost

The theory behind pension cost is similar to labor cost. Paying more than industry median on pension may create brand value for a firm by improving employee satisfaction and loyalty. Pension cost in this study is calculated by the Equation 3-5.

$$Pension_{sa} = \frac{\left[\left(\frac{Pension}{Sales}\right)_f - \left(\frac{Pension}{Sales}\right)_{im}\right] \times Sales_f}{Total\ Assets} \quad (3\text{-}5)$$

Where $\left(\frac{Pension}{Sales}\right)_f$ is an individual firm's pension costs standardized by its sales, $\left(\frac{Pension}{Sales}\right)_{im}$ is the industry median pension costs standardized by sales. This variable is standardized by Total Assets to be consistent with the dependent variable.

3.4.9 Franchising

Whether or not a firm has any franchising unit is included as an independent variable in the model. It is represented as a dummy variable[3], with a value of zero for no franchising unit, and a value of one for the presence of at least one franchising unit.

3.4.10 Control Variables

Five control variables are considered in this study, with three relating to the size of a firm, one relating to the market return, and one relating to the profitability of a firm. Revenues, number of employees, and total assets are the three size-related control variables. The three size-related control variables will be transformed into natural log format to reduce the skewness. A total market index will be included in the model as a control variable for the market return, since

[3] Franchising was treated as a dummy variable in the multiple regression analyses, since detailed franchising unit information was only available for a limited number of firm-years with both casual dining restaurant firm sample and quick service restaurant firm sample.

most of the casual dining restaurant firms are covered by this index. Return on assets (ROA) will be included in the model as the control variable for profitability. Industry, as a common control variable, is not included in this study, since it is not relevant. All of the firms in consideration are in the same casual dining restaurant industry. Revenues will come from a firm's income statement at year-end. The number of employees comes from COMPUSTAT database. Information regarding whether a firm has franchising operation or not will be collected from a firm's 10-K report. Total assets will be the year-end number on a firm's balance sheet.

3.4.11 Dummy Variables

Three dummy variables are included in the model.

3.4.11.1 Firm Fixed Effect

Time-series dependence may exist in the residuals of a finance panel data set. The residuals of a given firm tend to correlate across years due to persistent firm-specific shocks. Thus, a firm fixed effect dummy variable is included in the multiple regression model to eliminate the bias in coefficients and standard errors estimations caused by persistent firm-specific shocks (Petersen 2009; Thompson 2011). The firm fixed effect is denoted with FFE in the model.

3.4.11.2 Year Fixed Effect

Cross-section dependence may exist in the residuals of a finance panel data set. The residuals of a given year tend to correlate across different firms due to market-wide shocks. Thus, a year fixed effect dummy variable is included in the multiple regression model to eliminate the

bias in coefficients and standard errors estimations caused by market-wide shocks (Petersen 2009; Thompson 2011). The calendar year fixed effect is denoted with CFE in the model.

3.4.11.3 Concept

There are two types of casual dining restaurant firms with regard to the number of concepts under operation: single-concept firms and multi-concept firms. A dummy variable is included in the regression model to control for the concept effect. The concept dummy variable is denoted with CE in the model.

3.4.12 The Model

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{R\&D\&T}_{i,t} + \beta_2 \text{Advertising}_{i,t} + \beta_3 \text{L\&B}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 Size_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \varepsilon \quad (3\text{-}6)$$

Equation 3-5 represents the basic regression model in this study. The dependent variable of this study is the difference between the market value and the book value of a restaurant firm. This dependent variable usually can be stated in three f\\\\\\\\\\form $\frac{M}{B}$ is the original market-to-book ratio. It will have a distribution around one. $\frac{M-B}{B}$ is the percentage of market-to-book ratio. It will have a distribution around zero. However, both of these forms will display a positive skewness. Therefore, their error terms may not be normally distributed. Taking the natural log of a market-to-book ratio will reduce the positive skewness. $\ln\left(\frac{M}{B}\right)_{i,t}$ is the natural log of the market-to-book ratio for firm *i* in year *t*. Since market value and book value are usually positive, the market-to-book ratios will be highly skewed. Taking the natural log of the ratio will solve

this problem. β is the coefficient of the regression model. $R\&D\&T_{i,t}$ is the research and development expenditure and training cost for firm *i* in year *t*. $Advertising_{i.t}$ is the advertising cost for firm *i* in year *t*. $L\&B_{i.t}$ is the appreciation in land and buildings for firm *i* in year *t*. $Labor_{i,t}$ is the extra labor cost for firm *i* in year *t*. $Pension_{i.t}$ is the extra pension cost for firm *i* in year *t*. $Size_{i,t}$ is the control variable for firm size for firm *i* in year *t*. $Franchised_{i,t}$ is the control variable for firm business model for firm *i* in year *t*. $ROA_{i,t}$ is the control variable for profitability for firm *i* in year *t*. $FFE_{i,t}$ is the firm fixed effect dummy variable. $CFE_{i,t}$ is the calendar fixed effect dummy variable. $CE_{i,t}$ is the concept effect dummy variable for firm *i* in year *t*. $R\&D\&T_{i,t}$, $Advertising_{i.t}$, $Labor_{i,t}$, and $Pension_{i.t}$ are standardized with firm sales. $L\&B_{i.t}$ is standardized with firm total assets. $Market_t$ is the overall market for all publicly traded firms in United States in year *t*.

Intangible asset investments usually affect the market value of a firm during multiple periods. Therefore, lag effects will be considered in the regression model. However, there is a tradeoff for including lag effects. Although, it represents the true economic logic, the first-year data of all the firms in the sample will be lost if *t-1*lag effect is included. Similarly, both the first-year and second-year data will be lost if *t-1*and *t-2*are included in the model. All three models, regression with no lag, regression with one-year lag, and regression with both one-year and two-year lags will be presented in this study.

There are several concerns regarding the variables included in the model. First, spending more than industry median on R&D, Training, Advertising, Labor or Pension does not necessarily add intangible value to a firm. It might also indicate the existence of operating

inefficiencies. If the coefficient estimates of these variables are positive, they are creating intangible value for a firm. However, if the coefficient estimates are negative, it might be the signs for spending inefficiently on these areas. The second concern is the causality between the level of market-to-book ratio and the level of labor cost and pension cost. Which one is the endogenous variable? It is true that a firm that is performing better financially might have a higher market value. It might be more capable to pay a higher level of salaries and companions and offer better pensions plans. However, when employees are treated better financially, they will be more satisfied and loyalty to their firms, which help these firms to survive in the competition and remain in the market. Therefore, it is valid to include labor and pension costs as independent variables in the model. As mitigation to this concern, a profitability control variable will be included in the model.

3.5 Sample

Casual dining restaurant firms are the research interest of this study. This is one of the largest restaurant segments in the U.S., which contributes about one third to the total restaurant market sales (Mintel 2012). Figures 2.7 and 2.8 in Chapter 2 present the sales of the casual dining restaurant market and the total sales of the U.S. restaurant market. Casual dining restaurants are typically full-service restaurant chains that serve moderately priced entrees in a casual atmosphere. They often carry beer and wine licenses and offer appetizers, beverages, as well as desserts with average checks around $20 per person (Mintel 2012).

The casual dining restaurant market can be divided into three segments depending on the themes: Contemporary American and Seafood, Italian and Ethnic, and Steakhouse. Due to the

availability of data, only publicly-traded casual dining restaurant firms are considered. The sample firms operate in the casual dining business domain and generate revenue mainly from the domestic market. There are 13 distinct sample firms in this study: Applebee's International Inc., Bloomin' Brands Inc., Brinker Intl Inc., Cheesecake Factory Inc., Darden Restaurants Inc., Dine Equity Inc., O' Charley's Inc., OSI Restaurant Partners Inc., P F Chang's China Bistro Inc., Rare Hospitality Intl Inc., Red Robin Gourmet Burgers Inc., Ruby Tuesday Inc., and Texas Roadhouse Inc.

Among these 13 publicly-traded sample firms, Bloomin' Brands, Darden Restaurants, Dine Equity, OSI Restaurant Partners, and Rare Hospitality International are multi-concept brands. Bloomin' Brands has five concepts: Outback Steakhouse, Carrabba's Italian Grill, Bonefish Grill, Fleming's Prime Steakhouse and Wine Bar and Roy's. Darden Restaurants has eight concepts in its portfolio: Red Lobster, Olive Garden, LongHorn Steakhouse, The Capital Grille, Bahama Breeze, Seasons 52, Eddie V's Prime Seafood, and Wildfish Seafood Grille restaurants. Dine Equity has two concepts: Applebee's Neighborhood Grill and Bar and International House of Pancakes (IHOP). Applebee's International Inc. was acquired by IHOP on November 29, 2007. OSI Restaurant Partners operates under its parent Bloomin' Brands currently. It went private in 2007. Rare Hospitality International had two concepts: The Capital Grille, and LongHorn Steakhouse. It was bought by Darden in 2007.

The quick service restaurant industry is selected as a comparison group for the casual dining restaurant industry in research question five. The quick service restaurant industry is another large segment in the U.S. restaurant industry. Quick service restaurants (QSR) are typically limited-service restaurants that provide inexpensive food and quick service with average checks of $8 per person. It has a total sales of $181 billion in 2011, as shown in Figure

2.9 in Chapter 2. There are 12 quick service restaurant firms in this study: Burger King Holdings Inc., Carrols Restaurant Group Inc., Domino's Pizza Inc., Good Times Restaurants Inc., Jack in the Box Inc., McDonald's Corporation, Morgan's Foods Inc., Papa John's Int'l Inc., Pizza Inn Inc., The Quiznos Master LLC, The Wendy's Company, and Yum Brands! Inc.

3.6 Data Collection

Two levels of data, a total market return index and a price index will be needed for this study. The first level of data will be collected for individual firms. Firm specific data will come from Compustat North America Database. Annual data has been chosen as the unit of analysis. The second level of data will be collected for the casual dining restaurant industry and the quick service restaurant industry. Industry median data will be calculated by using individual firm data. A total market return index will be included in multiple regression analyses to control for market returns. This index will also come from Compustat North America Database. A price index, REIT[4] Price Index, will be the benchmark for land and buildings price adjustments in casual dining restaurant firms. Data range will go from 1980 to 2011.

3.7 Summary

This chapter presented the research design and development of this study. It discussed the research questions, hypotheses, research models, samples, and data collections. The detailed definition of each variable included in the research model has also been provided.

[4] This research could be refined if the financial data of casual dining restaurant firms as well as quick service restaurant firms and commercial real estate indies were available at regional levels. Unfortunately, the financial data for casual dining restaurant firms and quick service restaurant firms were only available at national level.

Chapter Four Data Analysis and Research Results

4.1 Introduction

This study aims to examine how to measure intangible assets in the hospitality industry with a quantitative method. In order to answer the research questions, four hypotheses are proposed in previous chapters. Pearson Correlation and Multiple Regression are chosen as the analysis tools to test these hypotheses. In this chapter, detailed data analysis will be presented. First, each research question will be answered by testing hypotheses with the appropriate statistical techniques specified in Chapter Three. SPSS 21 will be employed to perform statistical techniques.

4.2 Descriptive Statistics

4.2.1 Concept of Sample Firms

The study focuses on casual dining restaurant firms. Thirteen distinct, publicly traded, casual dining restaurant firms are chosen based on the selection criteria discussed in Chapter Three. These firms are Applebee's International Inc., Bloomin' Brands Inc., Brinker Intl Inc., Cheesecake Factory Inc., Darden Restaurants Inc., Dine Equity Inc., O' Charley's Inc., OSI Restaurant Partners Inc., P F Chang's China Bistro Inc., Rare Hospitality Intl Inc., Red Robin Gourmet Burgers Inc., Ruby Tuesday Inc., and Texas Roadhouse Inc. Among these 13 firms, five of them operate with more than one concept. Table 4.1 summarizes single concept and multi-concept firms.

Table 4.1 Casual Dining Restaurant Concepts

Single Concept	Applebee's International Inc. Brinker Intl Inc. Cheesecake Factory Inc. O' Charley's Inc. P F Changs China Bistro Inc. Ruby Tuesday Inc. Texas Roadhouse Inc. Red Robin	**Multi-Concept**	Dine Equity Inc. Rare Hospitality Intl Inc. OSI Restaurant Partners Inc. Bloomin' Brands Inc. Darden Restaurants Inc.

4.2.2 Size of Sample Firms

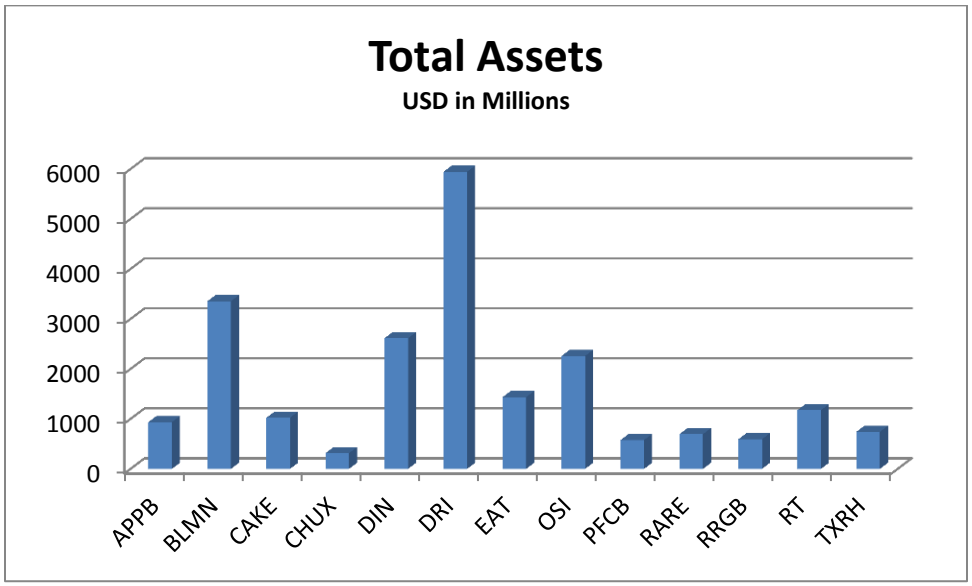
The size of the sample firms can be measured by their total assets, market values and number of employees.

4.2.2.1 Total Assets

Casual dining restaurant firms vary in size significantly. Their total assets range from several billion dollars to only three hundred million dollars. The average total assets of these 13 casual dining restaurant firms are 1.6 billion dollars. Darden is the largest casual dining restaurant firm with a total asset of 5.9 billion dollars at the end of 2011. Figure 4.1 shows the detailed information of total assets for these casual dining restaurant firms. For those firms that are currently active in trading status, total assets came from the end of the last fiscal year. For

those firms that are currently inactive in trading status, total assets came from the year end of the last trading year.

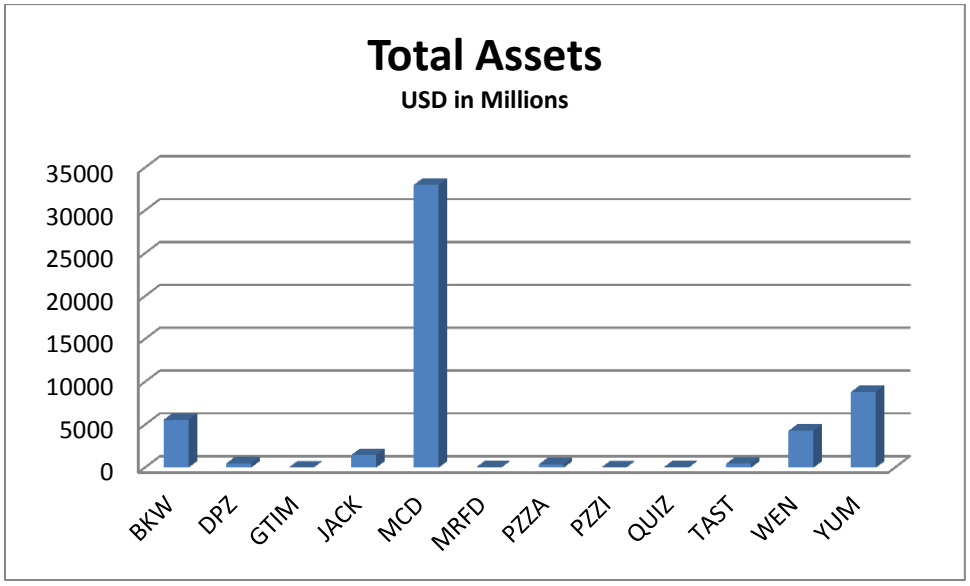
Figure 4.1 Total Assets of Casual Dining Restaurant Firms



The sizes of quick service restaurant firms also vary significantly. There are three very large players and one giant firm in the quick service restaurant industry. The giant firm, McDonald's, had about 32 billion dollars of total assets at the year end of 2011, which is more than three times the amount of the second biggest firm in the quick service restaurant industry, Yum Brands!. The three large players in the quick service restaurant industry are Yum Brands!, Burger King and Wendy's with a total assets of 8.8 billion dollars, 5.6 billion dollars and 4.3 billion dollars, respectively. The average total assets of these 12 quick service restaurant firms is 4.5 billion dollars. This average, however, is biased by McDonald's and the other large firms.

The median of quick service firms' total assets is 469.5 million dollars. Figure 4.2 shows the detailed information of total assets for quick service restaurant firms. For those firms that are currently active in trading status, total assets came from the year end of the last fiscal year. For those firms that are currently inactive in trading status, total assets came from the year end of the last trading year.

Figure 4.2 Total Assets of Quick Service Restaurant Firms

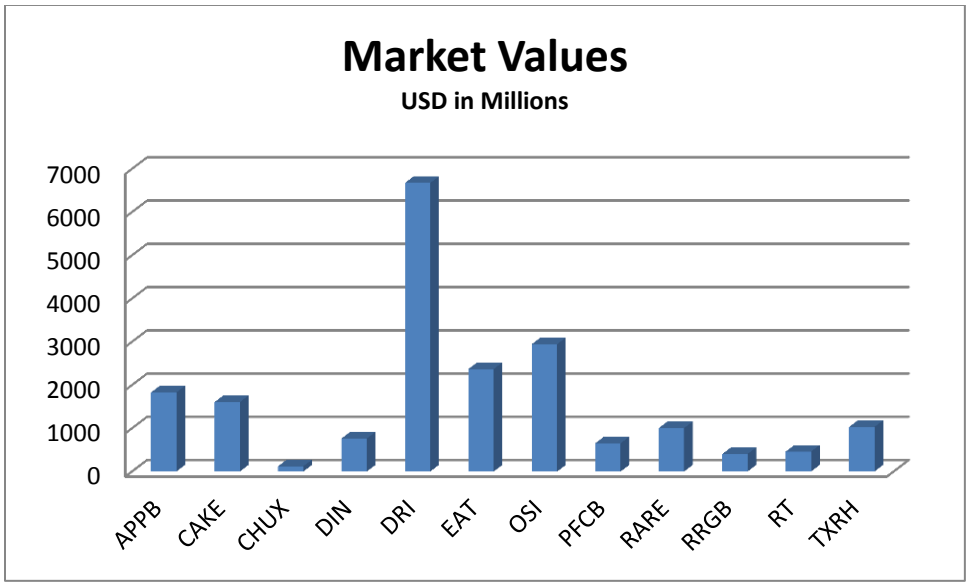


4.2.2.2 Market Value

The average market value of casual dining restaurant firms is 1.6 billion dollars. Darden is the largest casual dining restaurant firm with a market value of 6.7 billion dollars at the end of 2011. Figure 4.3 presents detailed information of market values for casual dining restaurant firms. Market value is calculated by multiplying common shares outstanding at year end with price per

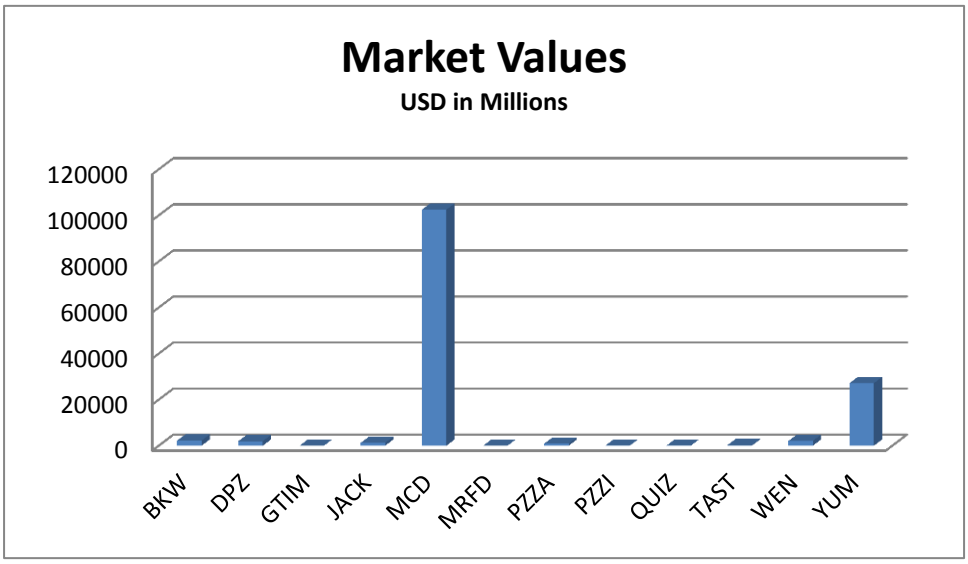
share at year end. For those firms that are currently active in trading status, market values came from the year end of the last fiscal year. For those firms that are currently inactive in trading status, market values came from the year end of the last trading year.

Figure 4.3 Market Values of Casual Dining Restaurant Firms



The average market value of quick service restaurant firms is 11.5 billion dollars. Similar to total assets, the average market value for quick service restaurant firms is biased by the giant firm, McDonalds. The median market value of quick service restaurant firms is 1.07 billion dollars. Figure 4.4 presents detailed information of market values for quick service restaurant firms

Figure 4.4 Market Values of Quick Service Restaurant Firms



4.2.2.3 Number of Employees

The number of employees is another measurement for the size of casual dining restaurant firms and quick service restaurant firms. The average number of employees for casual dining restaurant firms is 52,000. The average number and median number of employees for quick service restaurant firms are 85,000 and 16,000, respectively. Darden has the largest number of employees in the casual dining restaurant industry with 181,000 employees. McDonald's has the largest number in the quick service restaurant industry with 420,000 employees. Figure 4.5 and 4.6 show detailed information about the number of employees for the two segments.

Figure 4.5 Number of Employees for Casual Dining Restaurant Firms

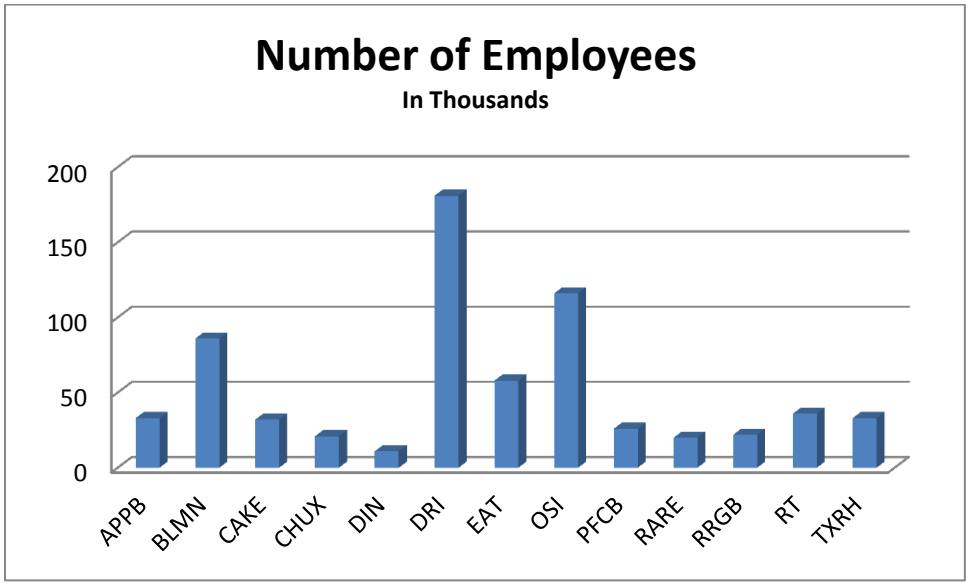
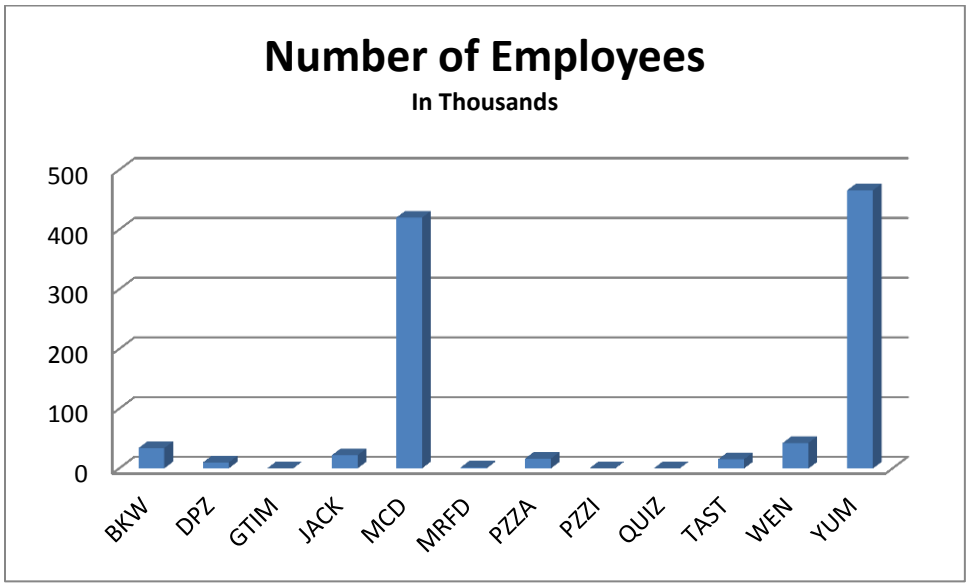


Figure 4.6 Number of Employees for Quick Service Restaurant Firms



4.2.3 Sample Size

The sample of this study included 13 distinct casual dining restaurant firms and 12 distinct quick service restaurant firms. Compustat North America is the primary data source for this study. The annual data for casual dining restaurant firms from 1980 to 2011 is collected from this database. There are 238 firm-years in total. Two firm-years are excluded due to systematic missing values, and 15 firm-years are excluded due to missing share price information. Thus, the final count of data points for casual dining restaurant firms usable for analysis purposes is 221. The annual data for quick service restaurant firms from 1980 to 2011 is also collected from the Compustat North America database. There are 251 firm-years in total. Eight firm-years are excluded due to systematic missing values, and 47 firm-years are excluded due to missing share price information. Thus, the final count of data points for quick service restaurant firms usable for analysis purposes is 196.

4.3 Hypothesis Testing and Results

4.3.1 Hypothesis One

H1: The appreciation in land and buildings has a positive impact on the increase in the market-to-book ratio in the casual dining restaurant industry.

The Pearson Correlation is employed to answer Hypothesis Two. The purpose of using the Pearson Correlation is to test the strength of linear dependence between a firm's market-to-book ratio and its unrecognized appreciation in land and buildings. If positive correlation could be identified, then Hypothesis Two could be supported. Table 4.2 presents the Pearson

Correlation results for Market-to-Book ratio and unrecognized appreciation in Land and Buildings of casual dining restaurant firms. The correlation between market-to-book ratio and unrecognized appreciation is 0.105, which is not statistically significant at 0.05 (Sig.=0.119). This result indicates that market-to-book ratio does not positively correlates to the unrecognized appreciations in land and buildings during the period between 1980 and 2011 in the casual dining restaurant industry. Therefore, Hypotheses One is not supported.

Table 4.2 Pearson Correlation for Casual Dining Restaurant Firms

		Market-to-book	Land and Buildings
Market-to-Book	Pearson Correlation	1	.105
	Sig. (2-tailed)		.119
	N	221	221
Land and Buildings	Pearson Correlation	.105	1
	Sig. (2-tailed)	.119	
	N	221	234

4.3.2 Hypotheses Two and Three

H2: Franchising positively affects casual dining restaurant firms' market-to-book values.

H3a: Research and development has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3b: Training has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3c: Advertising has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3d: Extra labor cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

H3e: Extra pension cost has a positive impact on the value increase of intangible assets in the casual dining restaurant industry.

To test Hypothesis Three and Hypothesis Four, a multiple regression model is specified as shown in Equation 3-6. A correlation table is provided in Appendix A2. First, three regression models with different size control variables are analyzed without time lags. Adjusted R squares and Durbin-Watson coefficients are compared among the first three models to decide the most appropriate size-related control variable. Total Employees is chosen as the size control variable, since it had the highest adjusted R square (0.714) and a Durbin-Watson coefficient closest to two (1.958). Second, time lags with periods ranging from one to five are added to Model 3. Multiple regression assumptions are examined for each model.

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \textit{Size}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \varepsilon \quad (3\text{-}6)$$

Regression Models with No Time Lags

Model 1: Multiple regression with total assets as a size control variable

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TA}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \varepsilon \quad (4\text{-}1)$$

Model 2: Multiple regression with total revenue as a size control variable

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TR}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \varepsilon \quad (4\text{-}2)$$

Model 3: Multiple regression with total employees as a size control variable

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \varepsilon \quad (4\text{-}3)$$

Regression Models with Time Lags

Model 4: Multiple regression with one-period time lag

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \beta_{13} \text{R\&D\&T}_{i,t-1} + \beta_{14} \text{Advertising}_{i.t-1} + \beta_{15} \text{Labor}_{i,t-1} + \beta_{16} \text{Pension}_{i.t-1} + \varepsilon \quad (4\text{-}4)$$

Model 5: Multiple regression with two-period time lag

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \beta_{13} \text{R\&D\&T}_{i,t-2} + \beta_{14} \text{Advertising}_{i.t-2} + \beta_{15} \text{Labor}_{i,t-2} + \beta_{16} \text{Pension}_{i.t-2} + \varepsilon \quad (4\text{-}5)$$

Model 6: Multiple regression with three-period time lag

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \beta_{13} \text{R\&D\&T}_{i,t-3} + \beta_{14} \text{Advertising}_{i.t-3} + \beta_{15} \text{Labor}_{i,t-3} + \beta_{16} \text{Pension}_{i.t-3} + \varepsilon \quad (4\text{-}6)$$

Model 7: Multiple regression with four-period time lag

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \beta_{13} \text{R\&D\&T}_{i,t-4} + \beta_{14} \text{Advertising}_{i.t-4} + \beta_{15} \text{Labor}_{i,t-4} + \beta_{16} \text{Pension}_{i.t-4} + \varepsilon \quad (4\text{-}7)$$

Model 8: Multiple regression with five-period time lag

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{Franchised}_{i,t} + \beta_8 \text{FFE}_{i,t} + \beta_9 \text{CFE}_{i,t} + \beta_{10} \text{CE}_{i,t} + \beta_{11} \text{ROA}_{i,t} + \beta_{12} \text{Market}_t + \beta_{13} \text{R\&D\&T}_{i,t-5} + \beta_{14} \text{Advertising}_{i.t-5} + \beta_{15} \text{Labor}_{i,t-5} + \beta_{16} \text{Pension}_{i.t-5} + \varepsilon \quad (4\text{-}8)$$

Table 4.3 Multiple Regression Summary for Casual Dining Restaurant Firms

Model	R Square	Adjusted R Square	Durbin-Watson	F	Sig.
1	0.770	0.703	1.990	11.394	0.000
2	0.770	0.703	1.987	11.408	0.000
3	**0.781**	**0.714**	**1.958**	**11.665**	**0.000**
4	0.799	0.730	2.030	11.670	0.000
5	0.816	0.753	1.998	12.934	0.000
6	0.801	0.732	1.968	11.676	0.000
7	0.805	0.737	2.022	11.963	0.000
8	0.810	0.744	1.959	12.296	0.000

Table 4.3 provides a summary of eight multiple regression results. The detailed regression outputs for each model are included in Appendix A. According to the regression results in Table 4.3, all models reported reasonable adjusted R squares. Based on the criteria of having a high adjusted R square and an acceptable Durbin-Watson coefficient, Model 5 seems to be the best model. However, models with lags do not improve the explaining power significantly or change the conclusion, but they do introduce Multicollinearity. Therefore,

Model 3 is chosen as the final model for this study. Tables 4.4, 4.5 and 4.6 present the regression results for Model 3.

Table 4.4 Model Summary for Model 3 for Casual Dining Restaurant Firms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
3	.884	0.781	0.714	0.294	1.958

Table 4.5 ANOVA for Model 3 for Casual Dining Restaurant Firms

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	49.462	49	1.0009	11.665	0.000
	Residual	13.846	160	.087		
	Total	63.308	209			

Table 4.6 Coefficients for Model 3 for Casual Dining Restaurant Firms

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Variable	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	.275	.196		1.404	.162		
LB	-.770	.367	-.143	-2.097**	.038	.293	3.410
ROA	5.813	.715	.492	8.131***	.000	.373	2.679
Franchise	.206	.151	.173	1.366	.174	.086	11.691
TE	.018	.028	.040	.626	.532	.338	2.955
RDT	.508	1.371	.035	.371	.711	.154	6.513
Advertising	-6.869	1.951	-.324	-3.521***	.001	.161	6.201
Labor	2.395	.942	.125	2.544**	.012	.562	1.778
Pension	19.869	7.960	.113	2.496**	.014	.673	1.487

* Significant at the 0.1 level
** Significant at the 0.05 level
***Significant at the 0.01 level

As shown in Table 4.6, Franchise has a Tolerance of 0.086 and a VIF of 11.691. The acceptable values of a Collinearity Tolerance and a VIF are larger than 0.1 and smaller than 10, respectively. The Tolerance and VIF values of Franchise indicate a Multicollinearity problem in

the model. The suggested solution for this issue is to omit Franchise from the model. Therefore, Model 9 is created by removing Franchise from Model 3.

$$\ln\left(\frac{M}{B}\right)_{i,t} = \beta_0 + \beta_1 \text{L\&B}_{i.t} + \beta_2 \text{R\&D\&T}_{i,t} + \beta_3 \text{Advertising}_{i.t} + \beta_4 \text{Labor}_{i,t} + \beta_5 \text{Pension}_{i.t} + \beta_6 \text{TE}_{i,t} + \beta_7 \text{FFE}_{i,t} + \beta_8 \text{CFE}_{i,t} + \beta_9 \text{CE}_{i,t} + \beta_{10} \text{ROA}_{i,t} + \beta_{11} \text{Market}_t + \varepsilon \quad (4\text{-}9)$$

Tables 4.7, 4.8 and 4.9 present the multiple regression outputs from SPSS. The adjusted R square is 0.713, which is just slightly lower than Model 3. The Durbin-Watson coefficient is 1.959, which is marginally higher than Model 3. The results of ANOVA in Table 4.8 indicates that Model 9 is overall statistically significant (Sig.=0.000).

Table 4.7 Model Summary for Model 9 for Casual Dining Restaurant Firms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
9	0.882	0.779	0.713	0.295	1.959

Table 4.8 ANOVA for Model 9 for Casual Dining Restaurant Firms

Model		Sum of Squares	df	Mean Square	F	Sig.
9	Regression	49.301	48	1.027	11.806	0.000
	Residual	14.007	161	.087		
	Total	63.308	209			

Table 4.9 Coefficients for Model 9 for Casual Dining Restaurant Firms

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.442	.154		2.868**	.005		
LB	-.776	.368	-.144	-2.109**	.036	.293	3.410
ROA	5.952	.710	.504	8.388***	.000	.381	2.625
TE	.015	.028	.035	0.546	.586	.340	2.945
RDT	1.299	1.247	.089	1.042	.299	.187	5.353
Advertising	-5.887	1.819	-.278	-3.237***	.001	.187	5.358
Labor	2.200	0.933	.115	2.357**	.020	.576	1.737
Pension	18.419	7.910	.104	2.328**	.021	.685	1.460

* Significant at the 0.1 level
** Significant at the 0.05 level
***Significant at the 0.01 level

There are nine independent variables and six control variables included in Model 5. The independent variables are Land and Buildings, RDT, Advertising, Labor, and Pension. The control variables are ROA, Total Employees, Concept, Total Market Return, Firm Fixed Effect and Calendar Fixed Effect. Firm Fixed Effect and Calendar Effect will not be reported in the final model. Concept and Total Market Return are automatically excluded from the multiple regression analysis for Model 9 due to Multicollinearity. These adjustments left one constant, five independent variables and two control variables in the final model. Among the one constant and seven variables included in the final model, four variables, the constant, Land and Buildings, Labor, and Pension are statistically significant at the 0.05 level. Two variables, ROA and Advertising are statistically significant at the 0.001 level. It is interesting to notice that the coefficient of Land and Buildings is negative. This might be attributed to the control variable of Calendar Fixed Effects, which have taken the variances away. According to Table 4.9, the final model could be rewritten with unstandardized coefficients as

$$\ln\left(\frac{M}{B}\right)_{i,t} = 0.442 - 0.776\ \mathrm{L\&B}_{i.t} + 1.229\ \mathrm{R\&D\&T}_{i,t} - 5.887\ \mathrm{Advertising}_{i.t} + 2.2\ \mathrm{Labor}_{i,t} + 18.419\ \mathrm{Pension}_{i.t} + 0.015\ \mathrm{TE}_{i,t} + 5.952\ \mathrm{ROA}_{i,t} + \varepsilon \quad (4\text{-}10)$$

4.3.3 Hypothesis Four

H4: Whether there is any difference between the casual dining industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs.

In order to test Hypothesis Five, multiple regression Models 1 through 8 are also applied to the quick service restaurant sample firm data. Detailed SPSS outputs are included in Appendix A. Tables 4.10, 4.11 and 4.12 present the multiple regression results for Model 3 with quick service restaurant sample firms.

Table 4.10 Model Summary for Model 3 for Quick Service Restaurant Firms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
3	0.773	0.597	0.462	0.666	2.599

Table 4.11 ANOVA for Model 3 for Quick Service Restaurant Firms

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	94.151	48	1.961	4.422	0.000
	Residual	63.432	143	.444		
	Total	157.583	191			

Table 4.12 Coefficients for Model 3 for Quick Service Restaurant Firms

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.711	.419		4.080***	.000		
LB	-.524	.740	-.071	-0.709	.479	.278	3.595
ROA	0.620	.680	.077	0.911	.364	.391	2.558
TE	-.158	.069	-.410	-2.278**	.024	.087	11.499
RDT	1.508	.521	.217	2.895**	.004	.499	2.002

Advertising	7.557	2.857	.226	2.646**	.009	.385	2.595
Labor	-1.158	0.756	-.228	-1.532	.128	.127	7.855
Pension	-7.327	28.251	-.030	-0.259	.796	.211	4.738

* Significant at the 0.1 level
** Significant at the 0.05 level
***Significant at the 0.01 level

The adjusted R square is 0.462 which is lower than that of the final model for casual dining restaurant firms. However, it is still a reasonable value. The Durbin-Watson coefficient is 2.599 which can be considered as within the acceptable range of between 1.5 to 2.5. The results of ANOVA in Table 4.11 indicate that Model 3 is overall statistically significant (Sig.=0.000). Since all the available data points for the quick service industry after 1980 all have a value of one for the Franchise dummy variable. Therefore, franchise is automatically excluded from the model.

There are five independent variables and six control variables included in Model 3. The independent variables are Land and Buildings, RDT, Advertising, Labor, and Pension. The control variables are ROA, Total Employees, Concept, Total Market Return, Firm Fixed Effect and Calendar Fixed Effect. Firm Fixed Effect and Calendar Effect will not be reported in the final model. Concept is automatically excluded from the multiple regression analysis for Model 3 due to Multicollinearity. These adjustments left one constant, five independent variables and three control variables in the final model. Among the one constant and nine variables included in the final model, three variables, TE, RDT, Advertising are statistically significant at the 0.05 level. The constant is statistically significant at the 0.01 level. According to the regression results, the final model for quick service restaurant firms could be rewritten with unstandardized coefficients as:

$$\ln\left(\frac{M}{B}\right)_{i,t} = 1.711 - 0.524\ \mathrm{L\&B}_{i.t} + 1.508\ \mathrm{R\&D\&T}_{i,t} + 7.557\ \mathrm{Advertising}_{i.t} - 1.158\ \mathrm{Labor}_{i,t} - 7.327\ \mathrm{Pension}_{i.t} - 0.158\ \mathrm{TE}_{i,t} + 0.62\ \mathrm{ROA}_{i,t} + \varepsilon \quad (4\text{-}11)$$

Comparing the final models for casual dining restaurant firms and quick service restaurant firms, some interesting differences are identified between the two industries. First, franchising is a significant positive contributor to intangible assets in the quick service restaurant industry but not to the casual dining restaurant industry. Second, advertising had a positive impact on intangible assets for the quick service restaurant industry, however, not for the casual dining restaurant industry. Third, investments in labor and pension had negative impacts on intangible assets in the quick service restaurant industry, but they had positive impacts in the casual dining restaurant industry.

4.4 Assumptions Test of Multiple Regression Analysis

4.4.1 Normality of Variables

A dependent variable and independent variables in a multiple regression model should be normally distributed. The Kolmogorov-Smirnov test and the Shapiro-Wilk test are applied to examine the normality of both dependent variables and independent variables in the final models. All variables are normally distributed. No violation is found. Test outputs are included in Appendix A.

4.4.2 Linearity

Linearity assumption requires that a dependent variable and independent variables in a multiple regression should exhibit linear relationships. A scatter plot (Appendix A) between the dependent variable market-to-book ratio and each independent variable is generated to examine the linearity. According to the scatter plots, the linearity assumption is met.

4.4.3 Independence of the Error Terms

Error terms should not correlate with each other in a multiple regression model. The Durbin-Watson test is applied to the regression with the untransformed independent variables Research and Development, Training, Advertising, Labor, and Pension to test this assumption. The Durbin-Watson coefficient is 1.958, which is within the generally acceptable range 1.5 to 2.5. Therefore, there is no correlated error terms problem in the final model.

4.4.4 Homoscedasticity

The residuals from a regression model should exhibit equal variance across cases. A residual plot of standard residual vs. standard predicted Y is generated to check homoscedasticity. The residual plots are included in Appendix A. No violation is found.

4.4.5 No Multicollinearity

Multicollinearity occurs when two independent variables are highly correlated. The relationship between a dependent variable and independent variables will be distorted by this strong correlation between two independent variables. A VIF test is applied to examine Multicollinearity. The complete VIF test output is included in Appendix A.

4.5 Hausman Test

A Hausman test is performed to determine the efficiency of fixed models and random models. Table 4.13 shows the results of the Hausman test. P-value is 0.9999 which is larger than

0.05. Therefore, the random model is not efficient for the casual dining industry. It is necessary to include the firm fixed effect and calendar fixed effect dummy variables in the final model.

Table 4.13 Hausman Test

Industry	Chisq	df	P-Value
Casual	1.7245	13	0.9999

4.6 Summary

Statistical tests are performed to examine Hypothesis One through Hypothesis Four. Hypotheses three and four are supported by test results, while hypotheses one and two are not. First, Research and Development, Training, Labor and Pension are found to have positive impacts on intangible assets in the casual dining restaurant industry. Second, three differences with regard to the importance of intangible asset investments are identified between the casual dining restaurant industry and the quick service restaurant industry.

Chapter Five Discussion

5.1 Introduction

This chapter will discuss the analysis results reported in Chapter Four in detail. Implications to the management in the hospitality industry will be given based on the discussion. Limitations of this research will be pointed out. Finally, suggestions to future research will be made.

5.2 Research Question One

1. What is the effect of the appreciation in land and buildings on the market-to-book ratio in the casual dining restaurant industry?

Research question one examined the effect of the appreciation in land and buildings on the market-to-book ratio in the casual dining restaurant industry. The Pearson Correlation results do not support that unrecognized appreciation in land and buildings has positive contribution to the increase of the market-to-book ratio in the casual dining restaurant industry. The market-to-book ratio has experienced ups and downs since the 1980s. The fluctuations in market-to-book ratios did not match with the value changes in land and buildings in the casual dining restaurant industry during the period between 1980 and 2011. The market-to-book ratio, however, dropped dramatically during early 1990s, due to the IT bubble.

5.3 Research Question Two

2. What is the impact of franchising decisions on the market-to-book ratio in the casual dining restaurant industry?

Research question two could not be answered due to the data limitation for the casual dining restaurant industry. Franchising is included as dummy variable in the multiple regression models for the casual dining restaurant firms. Due to the Multicollinearity problem, it is dropped off from the final model. Therefore, research question two remained unanswered for the casual dining restaurant firms.

5.4 Research Question Three

3. How do intangible assets contribute to the market value of a firm in the casual dining restaurant industry?

Research question three examined the impacts Research and Development, Training, Advertising, Labor and Pension exerted on the value increase of intangible assets in the casual dining restaurant industry. The extra investments made in Research and Development and Training are found to be positively correlated with intangible values of casual dining restaurant firms. First, R&D activities critically link to many of the intangible asset attributes and dimensions, such as knowledge, expertise, employee competence, human capital and innovational capital. The results from this study justify the extra expenses on labor and pension since these expenses will increase intangible value of casual dining restaurant firms. In addition, advertising is found to be negatively correlated with intangible value in the casual dining restaurant industry. Thus, spending more than average on advertising does not seem to increase a

firm's intangible value. Lastly, the extra investments on Research and Development do not increase a firm's intangible value significantly. Therefore, the investments made on R&D and Advertising will be better utilized if spent on employees in the casual dining restaurant industry.

5.5 Research Question Four

4. Is any difference between the casual dining restaurant industry and the quick service restaurant industry with regard to the importance of intangible assets valuation constructs?

Research question four compares the importance of intangible assets valuation constructs between the casual dining restaurant industry and the quick service restaurant industry. From the multiple regression analysis results, three interesting difference are found between these two industries. First, advertising has a positive impact on intangible assets for the quick service restaurant industry but not for the casual dining restaurant industry. Actually, advertising hurts intangible value in the casual dining restaurant industry. These results indicate that advertising in the quick service restaurant industry is able to pass positive messages to customers and create intangible value. However, spending more than average on advertising does not contribute to the value increase in intangible assets in the casual dining restaurant industry. Second, investments in labor and pension have negative impacts on intangible assets in the quick service restaurant industry, but they have positive impacts in the casual dining restaurant industry. This difference could be explained by the different levels of service involved in these two industries. Casual dining restaurants usually provide full services to their customers which require extensive employee-customer interaction during the dining process. Quick service restaurants, on the other hand, usually only provide limited services with less employee-customer interaction. Therefore,

employees are more involved in services provided by casual dining restaurants, and in turn, might have a bigger influence on customer satisfaction and intangible assets. The results indicate that quick service restaurant firms should not spend more than average on training, but casual dining restaurant firms will benefit from extra spending in this area.

5.6 Implications of This Study

This study aims to examine intangible assets valuation constructs in the hospitality industry and compare the differences between the casual dining restaurant industry and the quick service restaurant industry in the importance of these constructs. The results of this study have provided useful implications in both theoretical and managerial aspects.

5.6.1 Theoretical Implications

The portion of intangible assets has been growing on firms' balance sheets significantly since the 1970s. This significant change in the market value make-up has posed new challenges for investors, analysts, and the management as to how to properly measure and value intangible assets. Consequently, many efforts have been devoted to identify the most appropriate ways to measure and value intangible assets, which can not only provide guidance on pricing for mergers and acquisitions, but can also enlighten entrepreneurs on how to create internally or acquire externally valuable intangible assets. However, the issue of appropriately valuing intangible assets still remains unresolved.

Current literature has identified sources of intangible assets (Green 2004; Andreas et al. 2007; Green and Ryan 2005), and valuation techniques of intangible assets are proposed, such as the balanced scorecard (Kaplan and Norton 1992; Melymuka 2004; Kaplan and Norton 1996).

Such intangible assets have been linked to the financial performance of a firm (Gillis 2003; Hua et al. 2007; Sriram 2008). Existing literature, however, mainly focused on high tech related firms, in which intangible assets usually occupy dominant portions of the balance sheets (Sriram 2008; Andreas et al. 2007; Green and Ryan 2005; Green 2004). As such, further research is recommended in various industries, because the sources of intangible assets vary depending on the industries investigated (Andreas et al. 2007).

Limited research has been conducted within the hospitality industry with regard to measuring and valuing intangible assets. More attention has been given to hotels, rather than to restaurants, in the form of case studies with focus on hotel valuation (Hua et al. 2007; Hsu and Jang 2008; Jerman and Kavcic 2010; O'Neill and Belfrage 2005; Jerman et al. 2009; Kinnard Jr et al. 2001). The purpose of this study is to address this gap in our understanding of valuing intangible assets in the hospitality industry. The results of this study fill the gap in the literature by providing a quantitative method to value intangible assets in the hospitality industry using the valuation constructs that have been identified in previous hospitality research.

5.6.2 Managerial Implications

First, the results of this study provide managers in the hospitality industry with suggestions on R&D and training expenditures. Managers should realize that investing in R&D and training is critical in the hospitality industry. This is true for both casual dining restaurant firms and quick service restaurant firms. R&D and training expenses have been identified as positively correlated with market-to-book ratios. Restaurant firms that made more investments in R&D and training have achieved higher levels of intangible values.

Second, the results of this study provide managers in the hospitality industry with directions for advertising expenditure. Spending more than average on advertising, compared to industry peers, has brought benefits to quick service restaurant firms immediately in the current period. It has increased the intangible values of quick service restaurant firms. However, these results do not apply to the casual dining restaurant industry.

Third, the results of this study provide managers in the hospitality industry with recommendations on labor and pension expenditures. Casual dining restaurant firms that have spent more than averages on labor and pension, compared to industry peers, have maintained higher levels of market-to-book ratios. This benefit is immediate to casual dining restaurant firms, effective in the current period. However, extra expenditure on labor and pension actually hurt the intangible values of quick service restaurant firms.

5.7 Limitations of This Study

There are several limitations in this study, mostly due to the availability of data. First, detailed franchising information is not available for most of the sample firms for firm-years before the 1990s. Franchising is treated as a dummy variable in this study. It is automatically excluded from the final model of the casual dining restaurant industry due to Multicollinearity problem. If detailed franchising information is available for firm-years before the 1990s, a percentage variable could be included in the model, which might reduce the Multicollinearity problem found in this study.

Second, the information for separate R&D expense and Training expense is not available for both casual dining restaurant firms and quick service restaurant firms. These two intangible investments are examined together in this study. If separate information are available, a better understanding of the impacts of both R&D and Training on intangible value could be achieved.

Third, the REIT index only covers the period starting from 1971. More firm-years could be included in the multiple regression analysis if the REIT index covers a longer period of time. If more firm-years are included in the multiple regression analysis, the Multicollinearity issue that led to the exclusion of Franchising in the final model of casual dining restaurant firms might not present anymore.

Fourth, the land and buildings reported on balance sheets for both casual dining restaurant firms and quick service restaurant firms are only available on a national level. The REIT index is also only reported on a national level. If land and buildings information and the REIT index are available on a regional level, more accurate adjustments could have been made to the appreciations in land and buildings.

5.8 Suggestions for Future Research

First, future research could explore the explanation for the difference between the casual dining restaurant industry and the quick service restaurant industry in the factors that have led to the increase in market-to-book ratios. Among the six intangible assets valuation constructs, only research and development investments have a positive impact on a firm's market-to-book ratio in both the casual dining restaurant industry and the quick service restaurant industry. Advertising,

labor, and pension all exerted different impacts on a firm's market-to-book ratio in the two restaurant industries. Future research could explore the explanations for these different impacts.

Second, as discussed in the limitation section, franchise is included as a dummy variable in the multiple regression analyses in this study. Future research could use percentage of franchise units as an independent variable, instead of a dummy variable, if detailed franchise information becomes available. Including the percentage of franchise units in multiple regression analysis will probably eliminate the Multicollinearity issue that has been identified in this study. Therefore, research question three regarding the impact of franchising decisions on casual dining restaurant firms' market value could be answered.

Third, since both casual dining restaurant firms and quick service restaurant firms have relatively low market-to-book ratios, compared to S&P 500 firms, it would be interesting to look at the difference between the restaurant firms and S&P 500 firms in the importance of intangible assets valuation constructs. Research and development and advertising are among the most studied intangible assets valuation constructs for S&P 500 firms. However, labor and pension have not received as much attention as research and development and advertising in previous research.

Fourth, the impact of advertising on a firm's intangible value across different hospitality segments could be studied in future research. Advertising has been considered an effective method to communicate a firm's business concepts to its customers and create brand equity for the firm in previous research with both cross-sectional sample firms and restaurant firms (Abdel-khalik 1975; Hirschey 1982; Chauvin and Hirschey 1993; Hsu and Jang 2008). However, the results of this study suggest that advertising may not work the same way for all restaurant

segments. Advertising had a positive impact on intangible assets for the quick service restaurant industry immediately in the current period, but not for the casual dining restaurant industry. Actually, it hurt intangible value in the casual dining restaurant industry. Future research may expand to other restaurant segments or other hospitality segments to examine the importance of advertising on a hospitality firm's intangible value.

Fifth, the importance of investments made in employee related intangible assets could be investigated across different segments in the hospitality industry. The results of this study indicate that employee-related expenses have affected the casual dining restaurant industry and the quick service restaurant industry differently. The investments made on labor and pension had negative impacts on intangible assets in the quick service restaurant industry but positive impacts in the casual dining restaurant industry. This difference could be explained by the different levels of service involved in these two industries. Future studies could expand to other segments of the hospitality industry to examine the difference of the impacts of employee-related expenses on a firm's intangible value.

Sixth, this research could be extended to other sectors within the hospitality industry. This study examines intangible assets valuation in both the casual dining restaurant industry and the quick service industry. Future research could extends to other sectors, such as quick casual dining restaurant industry and fine dining restaurant industry.

Finally, future research can investigate how hospitality firms make intangible investments considering the FASB expensing requirement. According to the definition in accounting literature, the difference between market value and book value represents a firm's market premium on tangible assets as well as on intangible assets that are not recognized on its

balance sheet. The rule of historical cost is the direct cause of market premium on tangible assets. Some of the tangible assets are required to be valued at historical costs on balance sheets. Therefore, historical costs are presented in the book value, whereas fair values are presented in the market value. Since the fair values of these assets may vary from the historical costs over time, the book value and the market value of these tangible assets will be different. Another cause of this discrepancy is the requirement proposed by FASB that intangible asset investments should be expensed as incurred. According to this expensing requirement, instead of capitalizing intangible asset investments and reporting as investing cash outflows, these investments are expensed as incurred, which leads to direct deductions of current period operating cash flows (Kanodia et al. 2004). Operating cash flow has been linked to firm values in literature. Positive associations between operating cash flow and firm value are documented in previous research (Biddle et al. 1997; Dechow 1994; Moehrle et al. 2001). Commingling intangible asset investments with other operating expenses artificially reduces the true amount of operating cash flows and, therefore, provides misleading information to financial analysts and investors (Lev 2003; Kanodia et al. 2004; Wyatt and Abernethy 2008). Consequently, this misclassification of intangible asset investments, in theory, makes publicly traded firms reluctant to invest in intangible assets with current operating cash flows. This is especially true for those firms that do not possess superior capabilities to generate operating cash flows, even though the future benefits might completely offset current cash outflows (Kanodia et al. 2004). The casual dining restaurant sector is primarily a cash business. Operating cash flows play a critical role in casual dining restaurants' daily operations. Given the misclassification of intangible asset investments issue, future research can focus on examine how casual dining restaurants make their choices regarding the amount of operating cash flow invested in intangible assets.

5.9 Summary

This chapter discusses the analysis results for four research questions. Both theoretical implications and managerial implications to the hospitality industry are given. Limitations of this research are pointed out. Finally, suggestions to future research are made.

5.10 Conclusion

This study provides an insight to the intangible assets valuation in the hospitality industry. Two hypotheses are supported, one hypothesis is not supported, while one hypothesis remained unanswered due to Multicollinearity issues in multiple regression models. The results of this study show that 1) R&D, training, advertising, labor and pension are all important valuation constructs in the hospitality industry, 2) there are some differences, however, between casual dining restaurant firms and quick service restaurant firms.

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Appendix A Statistical Analysis Outputs

A.1 Person Correlation for Hypothesis Two – Casual Dining Restaurant Firms

Pearson Correlation

Correlations

		Ln_M_to_B	LB
Ln_M_to_B	Pearson Correlation	1	.105
	Sig. (2-tailed)		.119
	N	221	221
LB	Pearson Correlation	.105	1
	Sig. (2-tailed)	.119	
	N	221	234

A.2 Correlations

A.2.1 Correlation Table - Casual Dining Restaurant Firms

Correlations

		Ln_M_to_B	LB	RDT	Advertising	Labor	Pension	TE	Market Return	ROA	Franchise	Concept
Ln_M_to_B	Pearson	1	.105	-.069	-.124	-.196	-.078	-.147	.119	.708	-.188	-.064
	Sig. (2-tailed)		.119	.310	.067	.004	.248	.033	.077	.000	.005	.343
	N	221	221	221	221	221	221	210	221	221	221	221
LB	Pearson	.105	1	-.168	.145	-.083	-.149	.029	.359	.138	.078	-.046
	Sig. (2-tailed)	.119		.010	.027	.204	.023	.670	.000	.035	.234	.482
	N	221	234	234	234	234	234	223	234	234	234	234
RDT	Pearson	-.069	0	1.000	-.228	.256	.179	-.060	.051	-.082	-.233	.131
	Sig. (2-tailed)	.310	0.010		.000	.000	.006	.369	.440	.210	.000	.044
	N	221	234	236	236	236	236	225	236	236	236	236
Advertising	Pearson	-.124	0	-.228	1.000	-.153	.002	-.006	.037	-.122	.320	-.494
	Sig. (2-tailed)	.067	0.03	.000		.019	.973	.929	.570	.062	.000	.000
	N	221	234	236	236	236	236	225	236	236	236	236
Labor	Pearson	-.196	0	.256	-.153	1.000	.032	-.013	.005	-.325	-.205	.227
	Sig. (2-tailed)	.004	0.204	.000	.019		.621	.846	.945	.000	.002	.000
	N	221	234	236	236	236	236	225	236	236	236	236
Pension	Pearson	-.078	0	.179	.002	.032	1.000	-.009	-.105	.000	.080	.018
	Sig. (2-tailed)	.248	0.02	.006	.973	.621		.892	.108	.999	.224	.779
	N	221	234	236	236	236	236	225	236	236	236	236
TE	Pearson	-.147	0	-.060	-.006	-.013	-.009	1.000	-.073	-.138	.016	-.056
	Sig. (2-tailed)	.033	0.670	.369	.929	.846	.892		.275	.038	.815	.405
	N	210	223	225	225	225	225	225	225	225	225	225
Market Return	Pearson	.119	0	.051	.037	.005	-.105	-.073	1.000	.062	-.020	-.017
	Sig. (2-tailed)	.077	0.000	.440	.570	.945	.108	.275		.346	.761	.796
	N	221	234	236	236	236	236	225	236	236	236	236
ROA	Pearson	.708	0	-.082	-.122	-.325	.000	-.138	.062	1.000	-.060	-.019
	Sig. (2-tailed)	.000	0.03	.210	.062	.000	.999	.038	.346		.359	.771
	N	221	234	236	236	236	236	225	236	236	236	236

A.2.2 Correlation Table - Quick Service Restaurant Firms

Correlations

		Ln_M_to_B	LB	RDT	Advertising	Labor	Pension	TE	Market Return	ROA	Franchise	Concept
Ln_M_to_B	Pearson	1	-.026	.033	-.031	-.253	.014	-.147	.018	.233	.a	.a
	Sig. (2-tailed)		.716	.649	.667	.000	.841	.042	.798	.001	.	.
	N	196	196	196	196	196	196	192	196	196	196	196
LB	Pearson	-.026	1	-.060	.060	.030	.053	-.180	.435	-.002	.a	.a
	Sig. (2-tailed)	.716		.358	.356	.641	.419	.006	.000	.979	.	.
	N	196	238	238	238	238	238	233	238	238	238	238
RDT	Pearson	.033	0	1.000	.078	.019	.014	.129	.042	-.462	.a	.a
	Sig. (2-tailed)	.649	0.358		.228	.769	.826	.047	.515	.000	.	.
	N	196	238	243	243	243	243	238	243	243	243	243
Advertising	Pearson	-.031	0	.078	1.000	.340	-.006	.027	.041	-.237	.a	.a
	Sig. (2-tailed)	.667	0.36	.228		.000	.929	.683	.521	.000	.	.
	N	196	238	243	243	243	243	238	243	243	243	243
Labor	Pearson	-.253	0	.019	.340	1.000	.234	.039	.044	-.113	.a	.a
	Sig. (2-tailed)	.000	0.641	.769	.000		.000	.549	.499	.080	.	.
	N	196	238	243	243	243	243	238	243	243	243	243
Pension	Pearson	.014	0	.014	-.006	.234	1.000	.049	.009	.091	.a	.a
	Sig. (2-tailed)	.841	0.42	.826	.929	.000		.451	.883	.156	.	.
	N	196	238	243	243	243	243	238	243	243	243	243
TE	Pearson	-.147	0	.129	.027	.039	.049	1.000	.017	-.094	.a	.a
	Sig. (2-tailed)	.042	0.006	.047	.683	.549	.451		.794	.146	.	.
	N	192	233	238	238	238	238	238	238	238	238	238
Market Return	Pearson	.018	0	.042	.041	.044	.009	.017	1.000	-.038	.a	.a
	Sig. (2-tailed)	.798	0.000	.515	.521	.499	.883	.794		.555	.	.
	N	196	238	243	243	243	243	238	243	243	243	243
ROA	Pearson	.233	0	-.462	-.237	-.113	.091	-.094	-.038	1.000	.a	.a
	Sig. (2-tailed)	.001	0.98	.000	.000	.080	.156	.146	.555		.	.
	N	196	238	243	243	243	243	238	243	243	243	243

A.3 Multiple Regressions for Hypothesis Three and Hypothesis Three

A.3.1 Casual Dining Restaurant Firm Model 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.878[a]	.770	.703	.29745	1.990

a. Predictors: (Constant), Ln_AT, RDT, CFE_2005, FFE_DRI_6, CFE_1980, CFE_1988, CFE_1981, CFE_1987, CFE_1989, CFE_2002, CFE_2008, CFE_1986, CFE_1982, CFE_1983, CFE_1994, CFE_1993, FFE_CHUX_4, CFE_2009, CFE_2011, CFE_1985, CFE_1990, CFE_2003, FFE_RARE_10, CFE_1992, FFE_TXRH_13, CFE_1998, CFE_1984, CFE_1999, CFE_2001, FFE_RRGB_11, CFE_1995, FFE_PFCB_9, CFE_2004, CFE_2010, FFE_DIN_5, CFE_1991, Pension, CFE_1996, Labor, CFE_2007, FFE_APPB_1, CFE_2000, FFE_EAT_7, FFE_CAKE_3, ROA, CFE_1997, FFE_OSI_8, LB, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.405	50	1.008	11.394	.000[a]
	Residual	15.041	170	.088		
	Total	65.447	220			

a. Predictors: (Constant), Ln_AT, RDT, CFE_2005, FFE_DRI_6, CFE_1980, CFE_1988, CFE_1981, CFE_1987, CFE_1989, CFE_2002, CFE_2008, CFE_1986, CFE_1982, CFE_1983, CFE_1994, CFE_1993, FFE_CHUX_4, CFE_2009, CFE_2011, CFE_1985, CFE_1990, CFE_2003, FFE_RARE_10, CFE_1992, FFE_TXRH_13, CFE_1998, CFE_1984, CFE_1999, CFE_2001, FFE_RRGB_11, CFE_1995, FFE_PFCB_9, CFE_2004, CFE_2010, FFE_DIN_5, CFE_1991, Pension, CFE_1996, Labor, CFE_2007, FFE_APPB_1, CFE_2000, FFE_EAT_7, FFE_CAKE_3, ROA, CFE_1997, FFE_OSI_8, LB, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.094	.211		.443	.658		
	LB	-.580	.363	-.107	-1.596	.112	.301	3.320
	RDT	.045	1.270	.003	.036	.971	.175	5.725
	Advertising	-7.463	1.918	-.352	-3.892	.000	.166	6.037
	Labor	2.277	.927	.124	2.456	.015	.534	1.873
	Pension	20.496	8.014	.115	2.557	.011	.672	1.488

ROA	5.667	.717	.480	7.908	.000	.367	2.727
Franchise	.259	.151	.220	1.718	.088	.082	12.126
FFE_APPB_1	.500	.141	.251	3.542	.001	.269	3.724
FFE_CAKE_3	.561	.150	.296	3.742	.000	.216	4.628
FFE_CHUX_4	-.035	.029	-.078	-1.207	.229	.327	3.061
FFE_DIN_5	.117	.028	.316	4.236	.000	.243	4.119
FFE_DRI_6	1.061	.204	.520	5.193	.000	.135	7.407
FFE_EAT_7	.513	.136	.313	3.783	.000	.197	5.077
FFE_OSI_8	.584	.159	.278	3.665	.000	.235	4.255
FFE_PFCB_9	.706	.157	.316	4.489	.000	.273	3.668
FFE_RARE_10	.000	.118	.000	-.002	.999	.453	2.210
FFE_RRGB_11	.291	.140	.111	2.077	.039	.471	2.123
FFE_TXRH_13	.267	.138	.092	1.936	.055	.605	1.652
CFE_1980	-.181	.359	-.022	-.504	.615	.691	1.448
CFE_1981	-.372	.361	-.046	-1.028	.305	.681	1.468
CFE_1982	-.073	.368	-.009	-.199	.843	.655	1.526
CFE_1983	-.436	.370	-.054	-1.179	.240	.649	1.540
CFE_1984	.051	.260	.009	.196	.845	.662	1.510
CFE_1985	.271	.260	.047	1.041	.299	.661	1.513
CFE_1986	.047	.260	.008	.182	.856	.663	1.509
CFE_1987	.009	.270	.002	.035	.972	.612	1.633
CFE_1988	-.381	.260	-.066	-1.468	.144	.663	1.509
CFE_1989	-.026	.224	-.005	-.114	.909	.595	1.680
CFE_1990	-.610	.221	-.149	-2.759	.006	.461	2.170
CFE_1991	.037	.162	.011	.231	.818	.579	1.727
CFE_1992	.071	.168	.024	.419	.676	.405	2.467
CFE_1993	.067	.163	.023	.412	.681	.430	2.328
CFE_1994	-.214	.168	-.073	-1.275	.204	.408	2.453
CFE_1995	-.199	.171	-.072	-1.165	.246	.352	2.837
CFE_1996	-.243	.171	-.088	-1.422	.157	.350	2.859
CFE_1997	-.363	.179	-.132	-2.031	.044	.321	3.112
CFE_1998	-.269	.161	-.103	-1.674	.096	.358	2.797
CFE_1999	-.375	.168	-.143	-2.231	.027	.328	3.045
CFE_2000	-.269	.170	-.103	-1.578	.116	.319	3.131
CFE_2001	-.151	.143	-.058	-1.058	.291	.454	2.204

CFE_2002	-.307	.150	-.123	-2.051	.042	.378	2.646
CFE_2003	-.077	.137	-.031	-.561	.576	.452	2.214
CFE_2004	.063	.133	.026	.476	.635	.442	2.261
CFE_2005	-.076	.142	-.032	-.532	.595	.385	2.595
CFE_2007	-.337	.163	-.122	-2.071	.040	.387	2.586
CFE_2008	-.898	.186	-.326	-4.842	.000	.298	3.359
CFE_2009	-.452	.149	-.164	-3.038	.003	.462	2.163
CFE_2010	-.235	.159	-.085	-1.476	.142	.404	2.478
CFE_2011	-.409	.152	-.149	-2.688	.008	.443	2.259
Ln_AT	.016	.025	.042	.635	.526	.316	3.168

a. Dependent Variable: Ln_M_to_B

A.3.2 Casual Dining Restaurant Firm Model 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.878[a]	.770	.703	.29731	1.987

a. Predictors: (Constant), Ln_REVT, FFE_OSI_8, CFE_2003, CFE_1988, CFE_1980, CFE_1981, CFE_1989, CFE_1995, CFE_1987, CFE_1993, CFE_1982, CFE_1983, CFE_1992, FFE_TXRH_13, CFE_1986, CFE_1990, CFE_2005, FFE_RRGB_11, CFE_1985, CFE_2002, FFE_RARE_10, CFE_2011, CFE_2001, FFE_PFCB_9, CFE_1984, CFE_2008, CFE_1998, FFE_CAKE_3, CFE_2009, CFE_1999, FFE_DRI_6, CFE_2010, CFE_1994, FFE_APPB_1, CFE_2007, FFE_DIN_5, CFE_1996, CFE_1991, Pension, CFE_2004, FFE_EAT_7, CFE_2000, Labor, FFE_CHUX_4, ROA, CFE_1997, LB, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.419	50	1.008	11.408	.000[a]
	Residual	15.027	170	.088		
	Total	65.447	220			

a. Predictors: (Constant), Ln_REVT, FFE_OSI_8, CFE_2003, CFE_1988, CFE_1980, CFE_1981, CFE_1989, CFE_1995, CFE_1987, CFE_1993, CFE_1982, CFE_1983, CFE_1992, FFE_TXRH_13, CFE_1986, CFE_1990, CFE_2005, FFE_RRGB_11, CFE_1985, CFE_2002, FFE_RARE_10, CFE_2011, CFE_2001, FFE_PFCB_9, CFE_1984, CFE_2008, CFE_1998, FFE_CAKE_3, CFE_2009, CFE_1999, FFE_DRI_6, CFE_2010, CFE_1994, FFE_APPB_1, CFE_2007, FFE_DIN_5, CFE_1996, CFE_1991, Pension, CFE_2004, FFE_EAT_7, CFE_2000, Labor, FFE_CHUX_4, ROA, CFE_1997, LB, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.064	.223		.289	.773		
	LB	-.583	.363	-.107	-1.604	.110	.301	3.321
	RDT	.045	1.269	.003	.036	.972	.175	5.724
	Advertising	-7.486	1.917	-.353	-3.906	.000	.166	6.036
	Labor	2.269	.927	.123	2.447	.015	.534	1.874
	Pension	20.582	8.011	.115	2.569	.011	.672	1.488
	ROA	5.674	.716	.481	7.920	.000	.367	2.727
	Franchise	.260	.151	.220	1.721	.087	.082	12.126
	FFE_APPB_1	.502	.141	.252	3.558	.000	.268	3.727
	FFE_CAKE_3	.563	.150	.297	3.756	.000	.216	4.632
	FFE_CHUX_4	-.035	.029	-.077	-1.195	.234	.327	3.060
	FFE_DIN_5	.118	.028	.317	4.251	.000	.242	4.126
	FFE_DRI_6	1.063	.204	.521	5.204	.000	.135	7.412
	FFE_EAT_7	.513	.135	.314	3.790	.000	.197	5.077
	FFE_OSI_8	.585	.159	.278	3.673	.000	.235	4.256
	FFE_PFCB_9	.707	.157	.316	4.495	.000	.273	3.669
	FFE_RARE_10	.000	.118	.000	.002	.998	.453	2.210
	FFE_RRGB_11	.292	.140	.111	2.082	.039	.471	2.122
	FFE_TXRH_13	.265	.138	.091	1.927	.056	.605	1.653
	CFE_1980	-.183	.357	-.023	-.513	.609	.698	1.433
	CFE_1981	-.375	.359	-.046	-1.042	.299	.687	1.455
	CFE_1982	-.076	.364	-.009	-.208	.835	.669	1.494
	CFE_1983	-.439	.366	-.054	-1.200	.232	.662	1.510
	CFE_1984	.049	.259	.009	.189	.850	.664	1.506
	CFE_1985	.276	.260	.048	1.064	.289	.661	1.512
	CFE_1986	.053	.259	.009	.203	.839	.667	1.500
	CFE_1987	.014	.268	.002	.051	.959	.619	1.614
	CFE_1988	-.383	.258	-.067	-1.482	.140	.669	1.495
	CFE_1989	-.027	.221	-.006	-.124	.902	.610	1.639
	CFE_1990	-.616	.219	-.151	-2.817	.005	.471	2.122
	CFE_1991	.041	.161	.012	.254	.800	.581	1.721

CFE_1992	.072	.164	.025	.439	.662	.424	2.356
CFE_1993	.065	.161	.022	.404	.686	.442	2.261
CFE_1994	-.198	.160	-.068	-1.242	.216	.450	2.224
CFE_1995	-.179	.152	-.065	-1.177	.241	.443	2.259
CFE_1996	-.247	.165	-.090	-1.501	.135	.377	2.652
CFE_1997	-.375	.177	-.136	-2.112	.036	.325	3.073
CFE_1998	-.272	.159	-.104	-1.703	.090	.364	2.748
CFE_1999	-.381	.165	-.145	-2.300	.023	.338	2.956
CFE_2000	-.280	.170	-.107	-1.652	.100	.321	3.113
CFE_2001	-.156	.142	-.059	-1.093	.276	.457	2.189
CFE_2002	-.312	.148	-.125	-2.107	.037	.385	2.595
CFE_2003	-.084	.137	-.034	-.611	.542	.448	2.230
CFE_2004	.063	.130	.026	.485	.628	.460	2.172
CFE_2005	-.077	.139	-.032	-.551	.582	.403	2.482
CFE_2007	-.341	.163	-.124	-2.096	.038	.387	2.587
CFE_2008	-.910	.188	-.330	-4.849	.000	.291	3.440
CFE_2009	-.458	.148	-.166	-3.098	.002	.469	2.132
CFE_2010	-.234	.152	-.085	-1.543	.125	.444	2.252
CFE_2011	-.410	.149	-.149	-2.749	.007	.460	2.174
Ln_REVT	.020	.026	.048	.751	.453	.335	2.988

a. Dependent Variable: Ln_M_to_B

A.3.3 Casual Dining Restaurant Firm Model 3

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.884[a]	.781	.714	.29417	1.958

a. Predictors: (Constant), Ln_S_EMP, FFE_CAKE_3, CFE_1998, CFE_1980, CFE_1981, CFE_1989, CFE_1988, CFE_1993, CFE_1990, CFE_1983, CFE_1987, CFE_2011, CFE_1992, CFE_2008, FFE_DIN_5, CFE_2007, CFE_1986, CFE_2009, CFE_1984, CFE_2005, FFE_PFCB_9, CFE_1985, CFE_2002, CFE_2003, FFE_DRI_6, CFE_2010, FFE_RARE_10, CFE_2001, FFE_TXRH_13, CFE_1991, FFE_RRGB_11, CFE_1999, FFE_OSI_8, CFE_1996, CFE_2006, FFE_APPB_1, CFE_1995, FFE_CHUX_4, Pension, CFE_2000, CFE_1994, Labor, FFE_EAT_7, CFE_1997, ROA, LB, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.462	49	1.009	11.665	.000[a]
	Residual	13.846	160	.087		
	Total	63.308	209			

a. Predictors: (Constant), Ln_S_EMP, FFE_CAKE_3, CFE_1998, CFE_1980, CFE_1981, CFE_1989, CFE_1988, CFE_1993, CFE_1990, CFE_1983, CFE_1987, CFE_2011, CFE_1992, CFE_2008, FFE_DIN_5, CFE_2007, CFE_1986, CFE_2009, CFE_1984, CFE_2005, FFE_PFCB_9, CFE_1985, CFE_2002, CFE_2003, FFE_DRI_6, CFE_2010, FFE_RARE_10, CFE_2001, FFE_TXRH_13, CFE_1991, FFE_RRGB_11, CFE_1999, FFE_OSI_8, CFE_1996, CFE_2006, FFE_APPB_1, CFE_1995, FFE_CHUX_4, Pension, CFE_2000, CFE_1994, Labor, FFE_EAT_7, CFE_1997, ROA, LB, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.275	.196		1.404	.162		
	LB	-.770	.367	-.143	-2.097	.038	.293	3.410
	RDT	.508	1.371	.035	.371	.711	.154	6.513
	Advertising	-6.869	1.951	-.324	-3.521	.001	.161	6.201
	Labor	2.395	.942	.125	2.544	.012	.562	1.778
	Pension	19.869	7.960	.113	2.496	.014	.673	1.487
	ROA	5.813	.715	.492	8.131	.000	.373	2.679

Franchise	.206	.151	.173	1.366	.174	.086	11.691
FFE_APPB_1	.495	.140	.246	3.521	.001	.281	3.561
FFE_CAKE_3	.534	.153	.265	3.480	.001	.236	4.246
FFE_CHUX_4	-.033	.030	-.069	-1.105	.271	.350	2.856
FFE_DIN_5	.115	.028	.308	4.080	.000	.239	4.175
FFE_DRI_6	.999	.206	.496	4.859	.000	.131	7.626
FFE_EAT_7	.543	.145	.331	3.755	.000	.176	5.688
FFE_OSI_8	.622	.168	.292	3.694	.000	.219	4.557
FFE_PFCB_9	.645	.157	.293	4.097	.000	.267	3.739
FFE_RARE_10	.006	.118	.003	.047	.963	.444	2.251
FFE_RRGB_11	.257	.140	.100	1.845	.067	.467	2.142
FFE_TXRH_13	.258	.136	.090	1.890	.061	.605	1.652
CFE_1980	-.318	.344	-.040	-.923	.358	.733	1.364
CFE_1981	-.515	.346	-.065	-1.486	.139	.725	1.379
CFE_1983	-.572	.350	-.072	-1.634	.104	.711	1.406
CFE_1984	-.130	.342	-.016	-.379	.706	.742	1.349
CFE_1985	.145	.257	.026	.564	.574	.662	1.510
CFE_1986	-.070	.254	-.012	-.274	.785	.678	1.475
CFE_1987	-.125	.260	-.022	-.481	.631	.645	1.550
CFE_1988	-.493	.248	-.087	-1.984	.049	.709	1.411
CFE_1989	-.129	.209	-.028	-.618	.538	.672	1.488
CFE_1990	-.721	.198	-.179	-3.646	.000	.564	1.773
CFE_1991	-.039	.166	-.011	-.236	.814	.646	1.549
CFE_1992	-.036	.150	-.013	-.242	.809	.503	1.990
CFE_1993	-.032	.145	-.011	-.219	.827	.535	1.871
CFE_1994	-.298	.153	-.104	-1.953	.053	.483	2.071
CFE_1995	-.253	.138	-.093	-1.831	.069	.528	1.892
CFE_1996	-.408	.150	-.142	-2.729	.007	.502	1.992
CFE_1997	-.452	.155	-.167	-2.913	.004	.418	2.394
CFE_1998	-.388	.148	-.151	-2.630	.009	.417	2.398
CFE_1999	-.482	.147	-.187	-3.282	.001	.422	2.370
CFE_2000	-.350	.145	-.136	-2.422	.017	.434	2.303
CFE_2001	-.237	.129	-.092	-1.836	.068	.543	1.841
CFE_2002	-.385	.136	-.149	-2.831	.005	.491	2.038
CFE_2003	-.139	.125	-.057	-1.116	.266	.533	1.877

CFE_2005	-.127	.132	-.049	-.964	.337	.525	1.904
CFE_2006	.015	.133	.005	.111	.911	.565	1.769
CFE_2007	-.458	.155	-.169	-2.962	.004	.420	2.379
CFE_2008	-1.013	.178	-.374	-5.682	.000	.316	3.165
CFE_2009	-.529	.138	-.195	-3.843	.000	.530	1.887
CFE_2010	-.298	.141	-.110	-2.118	.036	.508	1.967
CFE_2011	-.478	.144	-.167	-3.307	.001	.539	1.855
Ln_S_EMP	.018	.028	.040	.626	.532	.338	2.955

a. Dependent Variable: Ln_M_to_B

A.3.4 Casual Dining Restaurant Firm Model 4

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.894[a]	.799	.730	.28591	2.030

a. Predictors: (Constant), Lag1_Pension, CFE_1988, CFE_1987, CFE_1986, CFE_1984, CFE_1981, CFE_1980, Lag1_Advertising, CFE_1983, CFE_1985, CFE_1991, CFE_1990, CFE_2011, CFE_2010, CFE_1993, CFE_1989, CFE_2006, CFE_1994, CFE_1996, CFE_1997, FFE_CHUX_4, CFE_2001, CFE_1995, CFE_2002, FFE_RRGB_11, FFE_OSI_8, CFE_2000, CFE_2007, FFE_RARE_10, CFE_1992, CFE_2005, FFE_TXRH_13, FFE_APPB_1, CFE_1998, Pension, CFE_1999, FFE_EAT_7, FFE_PFCB_9, CFE_2003, Lag1_Labor, CFE_2009, FFE_DRI_6, FFE_CAKE_3, CFE_2008, ROA, Lag1_RDT, Ln_S_EMP, LB, FFE_DIN_5, Labor, RDT, Franchise, Advertising

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.556	53	.954	11.670	.000[a]
	Residual	12.752	156	.082		
	Total	63.308	209			

a. Predictors: (Constant), Lag1_Pension, CFE_1988, CFE_1987, CFE_1986, CFE_1984, CFE_1981, CFE_1980, Lag1_Advertising, CFE_1983, CFE_1985, CFE_1991, CFE_1990, CFE_2011, CFE_2010, CFE_1993, CFE_1989, CFE_2006, CFE_1994, CFE_1996, CFE_1997, FFE_CHUX_4, CFE_2001, CFE_1995, CFE_2002, FFE_RRGB_11, FFE_OSI_8, CFE_2000, CFE_2007, FFE_RARE_10, CFE_1992, CFE_2005, FFE_TXRH_13, FFE_APPB_1, CFE_1998, Pension, CFE_1999, FFE_EAT_7, FFE_PFCB_9, CFE_2003, Lag1_Labor, CFE_2009, FFE_DRI_6, FFE_CAKE_3, CFE_2008, ROA, Lag1_RDT, Ln_S_EMP, LB, FFE_DIN_5, Labor, RDT, Franchise, Advertising

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.198	.207		.954	.342		
	LB	-.953	.363	-.177	-2.623	.010	.283	3.535
	RDT	-2.444	1.659	-.168	-1.473	.143	.099	10.094
	Advertising	-1.219	2.996	-.058	-.407	.685	.065	15.481
	Labor	1.693	1.665	.089	1.017	.311	.170	5.887
	Pension	22.298	8.115	.126	2.748	.007	.611	1.636
	ROA	4.863	.744	.412	6.540	.000	.326	3.067
	Franchise	.279	.153	.234	1.820	.071	.078	12.816
	FFE_APPB_1	.638	.143	.317	4.452	.000	.255	3.924
	FFE_CAKE_3	.619	.164	.308	3.784	.000	.195	5.116
	FFE_CHUX_4	-.036	.029	-.074	-1.224	.223	.349	2.867
	FFE_DIN_5	.141	.029	.376	4.832	.000	.213	4.685
	FFE_DRI_6	1.217	.220	.605	5.534	.000	.108	9.251
	FFE_EAT_7	.520	.141	.317	3.685	.000	.174	5.738
	FFE_OSI_8	.614	.164	.288	3.751	.000	.219	4.562
	FFE_PFCB_9	.733	.169	.333	4.327	.000	.218	4.584
	FFE_RARE_10	-.044	.117	-.021	-.376	.707	.426	2.349
	FFE_RRGB_11	.350	.142	.136	2.470	.015	.427	2.339
	FFE_TXRH_13	.302	.135	.105	2.235	.027	.581	1.720
	CFE_1980	-.162	.343	-.020	-.471	.639	.696	1.436
	CFE_1981	-.360	.345	-.045	-1.044	.298	.690	1.450
	CFE_1983	-.394	.349	-.049	-1.130	.260	.676	1.479
	CFE_1984	-.166	.348	-.021	-.479	.633	.679	1.472
	CFE_1985	.291	.259	.051	1.122	.264	.614	1.630
	CFE_1986	.062	.254	.011	.244	.807	.637	1.569
	CFE_1987	-.001	.260	.000	-.005	.996	.609	1.641
	CFE_1988	-.221	.264	-.039	-.839	.403	.593	1.687
	CFE_1989	-.208	.205	-.045	-1.017	.311	.658	1.520
	CFE_1990	-.711	.199	-.177	-3.579	.000	.528	1.894
	CFE_1991	-.003	.166	-.001	-.016	.987	.609	1.642
	CFE_1992	-.018	.159	-.006	-.116	.908	.419	2.387

CFE_1993	.038	.145	.013	.263	.793	.507	1.973
CFE_1994	-.287	.150	-.100	-1.913	.058	.471	2.125
CFE_1995	-.188	.138	-.069	-1.365	.174	.501	1.994
CFE_1996	-.346	.148	-.121	-2.337	.021	.485	2.063
CFE_1997	-.448	.151	-.165	-2.967	.003	.417	2.398
CFE_1998	-.379	.146	-.147	-2.586	.011	.400	2.499
CFE_1999	-.451	.146	-.175	-3.078	.002	.400	2.498
CFE_2000	-.309	.141	-.120	-2.190	.030	.431	2.322
CFE_2001	-.188	.128	-.073	-1.476	.142	.527	1.896
CFE_2002	-.352	.133	-.137	-2.642	.009	.483	2.072
CFE_2003	-.089	.123	-.036	-.722	.471	.520	1.922
CFE_2005	-.100	.129	-.039	-.779	.437	.519	1.927
CFE_2006	.043	.131	.016	.330	.742	.554	1.805
CFE_2007	-.635	.160	-.234	-3.957	.000	.368	2.714
CFE_2008	-.929	.180	-.343	-5.157	.000	.292	3.423
CFE_2009	-.613	.141	-.226	-4.365	.000	.481	2.081
CFE_2010	-.263	.138	-.097	-1.902	.059	.495	2.020
CFE_2011	-.487	.141	-.170	-3.455	.001	.535	1.871
Ln_S_EMP	.020	.028	.045	.719	.473	.334	2.997
Lag1_RDT	1.658	.972	.137	1.705	.090	.199	5.032
Lag1_Advertising	-7.621	2.911	-.373	-2.618	.010	.063	15.759
Lag1_Labor	.840	1.684	.042	.498	.619	.179	5.600
Lag1_Pension	9.891	7.421	.064	1.333	.185	.557	1.795

a. Dependent Variable: Ln_M_to_B

A.3.5 Casual Dining Restaurant Firm Model 5

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.903[a]	.816	.753	.27436	1.998

a. Predictors: (Constant), Lag2_Pension, CFE_1992, Lag2_Advertising, CFE_1980, CFE_1983, CFE_1981, CFE_1984, CFE_1988, CFE_1987, CFE_1989, CFE_1986, CFE_1985, CFE_1991, CFE_1995, CFE_2011, CFE_1994, FFE_CHUX_4, CFE_2002, CFE_2001, CFE_1997, CFE_1990, CFE_2006, CFE_1996, FFE_OSI_8, CFE_2007, FFE_RRGB_11, CFE_2003, CFE_2008, FFE_RARE_10, CFE_1993, CFE_1999, FFE_APPB_1, FFE_TXRH_13, CFE_2005, CFE_2009, FFE_EAT_7, Pension, CFE_2000, FFE_PFCB_9, CFE_1998, Lag2_Labor, FFE_DRI_6, FFE_CAKE_3, CFE_2010, Lag2_RDT, ROA, Ln_S_EMP, Labor, LB, FFE_DIN_5, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.599	53	.974	12.934	.000[a]
	Residual	11.668	155	.075		
	Total	63.266	208			

a. Predictors: (Constant), Lag2_Pension, CFE_1992, Lag2_Advertising, CFE_1980, CFE_1983, CFE_1981, CFE_1984, CFE_1988, CFE_1987, CFE_1989, CFE_1986, CFE_1985, CFE_1991, CFE_1995, CFE_2011, CFE_1994, FFE_CHUX_4, CFE_2002, CFE_2001, CFE_1997, CFE_1990, CFE_2006, CFE_1996, FFE_OSI_8, CFE_2007, FFE_RRGB_11, CFE_2003, CFE_2008, FFE_RARE_10, CFE_1993, CFE_1999, FFE_APPB_1, FFE_TXRH_13, CFE_2005, CFE_2009, FFE_EAT_7, Pension, CFE_2000, FFE_PFCB_9, CFE_1998, Lag2_Labor, FFE_DRI_6, FFE_CAKE_3, CFE_2010, Lag2_RDT, ROA, Ln_S_EMP, Labor, LB, FFE_DIN_5, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.251	.196		1.281	.202		
	LB	-.723	.346	-.134	-2.089	.038	.287	3.481
	RDT	2.008	1.326	.138	1.514	.132	.143	6.988
	Advertising	-2.503	2.357	-.118	-1.062	.290	.096	10.383
	Labor	4.643	1.223	.243	3.796	.000	.290	3.447
	Pension	23.967	7.489	.136	3.200	.002	.661	1.512
	ROA	5.992	.694	.504	8.635	.000	.349	2.864
	Franchise	.187	.154	.157	1.216	.226	.071	14.013
	FFE_APPB_1	.517	.141	.250	3.670	.000	.257	3.892
	FFE_CAKE_3	.483	.166	.240	2.915	.004	.176	5.686
	FFE_CHUX_4	-.032	.029	-.066	-1.113	.267	.334	2.991
	FFE_DIN_5	.140	.028	.375	4.975	.000	.209	4.782
	FFE_DRI_6	1.106	.218	.550	5.064	.000	.101	9.898
	FFE_EAT_7	.643	.145	.392	4.432	.000	.152	6.569
	FFE_OSI_8	.681	.165	.320	4.131	.000	.199	5.033
	FFE_PFCB_9	.601	.167	.273	3.600	.000	.207	4.842
	FFE_RARE_10	.102	.112	.048	.908	.365	.430	2.324
	FFE_RRGB_11	.282	.137	.109	2.065	.041	.424	2.357
	FFE_TXRH_13	.228	.130	.080	1.757	.081	.581	1.722
	CFE_1980	-.258	.332	-.032	-.778	.438	.686	1.458
	CFE_1981	-.454	.334	-.057	-1.362	.175	.680	1.471
	CFE_1983	-.502	.338	-.063	-1.485	.140	.662	1.511
	CFE_1984	-.068	.329	-.009	-.206	.837	.698	1.433
	CFE_1985	.221	.251	.039	.881	.380	.603	1.658
	CFE_1986	-.074	.245	-.013	-.301	.764	.631	1.584
	CFE_1987	-.134	.250	-.024	-.535	.594	.608	1.645
	CFE_1988	-.403	.243	-.071	-1.658	.099	.643	1.556
	CFE_1989	-.236	.238	-.042	-.994	.322	.672	1.489
	CFE_1990	-.668	.192	-.166	-3.479	.001	.520	1.923
	CFE_1991	.031	.165	.009	.189	.850	.568	1.760
	CFE_1992	-.019	.142	-.007	-.134	.894	.486	2.057

CFE_1993	.134	.147	.047	.912	.363	.451	2.215
CFE_1994	-.316	.145	-.110	-2.182	.031	.466	2.144
CFE_1995	-.282	.130	-.104	-2.163	.032	.514	1.946
CFE_1996	-.356	.142	-.124	-2.505	.013	.485	2.062
CFE_1997	-.395	.146	-.146	-2.713	.007	.412	2.429
CFE_1998	-.350	.138	-.136	-2.533	.012	.415	2.409
CFE_1999	-.359	.140	-.139	-2.558	.011	.402	2.486
CFE_2000	-.262	.137	-.101	-1.903	.059	.418	2.391
CFE_2001	-.225	.121	-.087	-1.863	.064	.540	1.852
CFE_2002	-.323	.128	-.125	-2.529	.012	.485	2.062
CFE_2003	-.104	.117	-.042	-.889	.375	.526	1.901
CFE_2005	-.156	.123	-.061	-1.268	.207	.520	1.924
CFE_2006	.024	.125	.009	.195	.845	.558	1.793
CFE_2007	-.523	.149	-.193	-3.518	.001	.395	2.531
CFE_2008	-1.017	.168	-.375	-6.044	.000	.308	3.242
CFE_2009	-.421	.132	-.155	-3.182	.002	.498	2.006
CFE_2010	-.198	.137	-.073	-1.442	.151	.465	2.149
CFE_2011	-.418	.135	-.146	-3.087	.002	.535	1.869
Ln_S_EMP	.003	.027	.007	.110	.913	.330	3.026
Lag2_RDT	-1.021	.753	-.085	-1.356	.177	.302	3.310
Lag2_Advertising	-6.471	1.950	-.320	-3.319	.001	.128	7.804
Lag2_Labor	-2.584	1.245	-.129	-2.076	.040	.308	3.247
Lag2_Pension	-16.855	7.033	-.109	-2.397	.018	.573	1.745

a. Dependent Variable: Ln_M_to_B

A.3.6 Casual Dining Restaurant Firm Model 6

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.895[a]	.801	.732	.28565	1.968

a. Predictors: (Constant), Lag3_Pension, CFE_1993, Lag3_Advertising, CFE_1981, CFE_1980, CFE_1984, CFE_1983, CFE_1989, CFE_1988, CFE_1987, CFE_1986, CFE_1985, CFE_1996, CFE_1990, CFE_1992, CFE_1995, CFE_2006, FFE_OSI_8, CFE_2005, CFE_1997, CFE_2003, FFE_RRGB_11, CFE_1991, CFE_2002, FFE_CHUX_4, CFE_2007, CFE_2000, Pension, CFE_2009, FFE_APPB_1, CFE_2001, FFE_RARE_10, FFE_TXRH_13, CFE_1994, CFE_2010, CFE_1999, FFE_EAT_7, FFE_PFCB_9, CFE_2011, Lag3_Labor, CFE_1998, FFE_DRI_6, FFE_CAKE_3, CFE_2008, Labor, Lag3_RDT, ROA, Ln_S_EMP, LB, FFE_DIN_5, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.496	53	.953	11.676	.000[a]
	Residual	12.566	154	.082		
	Total	63.062	207			

a. Predictors: (Constant), Lag3_Pension, CFE_1993, Lag3_Advertising, CFE_1981, CFE_1980, CFE_1984, CFE_1983, CFE_1989, CFE_1988, CFE_1987, CFE_1986, CFE_1985, CFE_1996, CFE_1990, CFE_1992, CFE_1995, CFE_2006, FFE_OSI_8, CFE_2005, CFE_1997, CFE_2003, FFE_RRGB_11, CFE_1991, CFE_2002, FFE_CHUX_4, CFE_2007, CFE_2000, Pension, CFE_2009, FFE_APPB_1, CFE_2001, FFE_RARE_10, FFE_TXRH_13, CFE_1994, CFE_2010, CFE_1999, FFE_EAT_7, FFE_PFCB_9, CFE_2011, Lag3_Labor, CFE_1998, FFE_DRI_6, FFE_CAKE_3, CFE_2008, Labor, Lag3_RDT, ROA, Ln_S_EMP, LB, FFE_DIN_5, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.045	.207		.217	.829		
	LB	-.872	.360	-.162	-2.424	.016	.289	3.466
	RDT	1.212	1.434	.083	.846	.399	.134	7.436
	Advertising	-4.734	2.198	-.223	-2.154	.033	.120	8.308
	Labor	4.186	1.128	.219	3.711	.000	.372	2.691
	Pension	21.250	7.777	.121	2.732	.007	.665	1.504
	ROA	5.731	.745	.483	7.697	.000	.329	3.043
	Franchise	.333	.165	.279	2.013	.046	.067	14.863
	FFE_APPB_1	.592	.152	.278	3.886	.000	.253	3.955
	FFE_CAKE_3	.711	.177	.354	4.026	.000	.168	5.960
	FFE_CHUX_4	-.029	.030	-.062	-.966	.335	.318	3.140
	FFE_DIN_5	.159	.031	.425	5.179	.000	.192	5.214
	FFE_DRI_6	1.333	.239	.663	5.572	.000	.091	10.944
	FFE_EAT_7	.596	.158	.364	3.771	.000	.139	7.203
	FFE_OSI_8	.674	.180	.317	3.752	.000	.182	5.500
	FFE_PFCB_9	.805	.176	.366	4.580	.000	.202	4.945
	FFE_RARE_10	.037	.117	.017	.314	.754	.426	2.349
	FFE_RRGB_11	.396	.144	.154	2.756	.007	.415	2.409
	FFE_TXRH_13	.325	.135	.113	2.398	.018	.579	1.727
	CFE_1980	-.105	.348	-.013	-.302	.763	.677	1.477
	CFE_1981	-.305	.350	-.038	-.872	.384	.671	1.491
	CFE_1983	-.365	.354	-.046	-1.029	.305	.653	1.531
	CFE_1984	.134	.347	.017	.386	.700	.682	1.466
	CFE_1985	.358	.263	.064	1.363	.175	.595	1.680
	CFE_1986	.139	.261	.025	.534	.594	.607	1.648
	CFE_1987	.001	.262	.000	.002	.998	.599	1.668
	CFE_1988	-.335	.251	-.059	-1.332	.185	.652	1.533
	CFE_1989	-.191	.245	-.034	-.779	.437	.684	1.463
	CFE_1990	-.534	.219	-.116	-2.438	.016	.575	1.739
	CFE_1991	.040	.173	.011	.229	.819	.556	1.799
	CFE_1992	.025	.151	.009	.164	.870	.462	2.163

CFE_1993	-.006	.143	-.002	-.041	.968	.518	1.930
CFE_1994	-.187	.161	-.065	-1.167	.245	.411	2.430
CFE_1995	-.257	.138	-.095	-1.863	.064	.497	2.010
CFE_1996	-.394	.147	-.138	-2.677	.008	.489	2.045
CFE_1997	-.465	.151	-.172	-3.071	.003	.414	2.415
CFE_1998	-.391	.144	-.152	-2.717	.007	.413	2.419
CFE_1999	-.451	.143	-.175	-3.149	.002	.419	2.389
CFE_2000	-.285	.143	-.111	-1.991	.048	.420	2.384
CFE_2001	-.182	.127	-.071	-1.438	.152	.533	1.876
CFE_2002	-.390	.132	-.151	-2.948	.004	.490	2.040
CFE_2003	-.128	.121	-.052	-1.052	.295	.532	1.880
CFE_2005	-.171	.128	-.066	-1.329	.186	.520	1.923
CFE_2006	-.024	.131	-.009	-.180	.857	.556	1.799
CFE_2007	-.540	.153	-.199	-3.535	.001	.406	2.460
CFE_2008	-1.086	.177	-.401	-6.150	.000	.304	3.290
CFE_2009	-.597	.136	-.221	-4.379	.000	.510	1.959
CFE_2010	-.235	.139	-.087	-1.687	.094	.488	2.048
CFE_2011	-.582	.148	-.203	-3.938	.000	.486	2.058
Ln_S_EMP	.026	.028	.059	.946	.346	.335	2.986
Lag3_RDT	-1.372	.779	-.115	-1.760	.080	.304	3.286
Lag3_Advertising	-5.163	1.761	-.255	-2.931	.004	.171	5.835
Lag3_Labor	-2.519	1.169	-.123	-2.156	.033	.397	2.519
Lag3_Pension	10.662	7.163	.069	1.488	.139	.601	1.663

a. Dependent Variable: Ln_M_to_B

A.3.7 Casual Dining Restaurant Firm Model 7

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.897[a]	.805	.737	.28288	2.022

a. Predictors: (Constant), Lag4_Pension, CFE_1997, CFE_1989, CFE_1981, CFE_1984, CFE_1980, CFE_1983, CFE_1988, CFE_1987, CFE_1986, CFE_1990, CFE_1985, CFE_1991, CFE_1994, CFE_1993, Lag4_Advertising, CFE_1996, CFE_2005, CFE_2006, FFE_OSI_8, CFE_2001, CFE_2008, FFE_RRGB_11, CFE_2002, CFE_1992, FFE_CHUX_4, CFE_2009, CFE_2011, FFE_APPB_1, CFE_2000, FFE_TXRH_13, CFE_2010, CFE_1999, FFE_PFCB_9, CFE_2007, FFE_RARE_10, Pension, CFE_1998, FFE_EAT_7, CFE_1995, FFE_CAKE_3, Lag4_Labor, FFE_DRI_6, CFE_2003, Labor, ROA, Lag4_RDT, Ln_S_EMP, LB, Advertising, RDT, FFE_DIN_5, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.738	53	.957	11.963	.000[a]
	Residual	12.324	154	.080		
	Total	63.062	207			

a. Predictors: (Constant), Lag4_Pension, CFE_1997, CFE_1989, CFE_1981, CFE_1984, CFE_1980, CFE_1983, CFE_1988, CFE_1987, CFE_1986, CFE_1990, CFE_1985, CFE_1991, CFE_1994, CFE_1993, Lag4_Advertising, CFE_1996, CFE_2005, CFE_2006, FFE_OSI_8, CFE_2001, CFE_2008, FFE_RRGB_11, CFE_2002, CFE_1992, FFE_CHUX_4, CFE_2009, CFE_2011, FFE_APPB_1, CFE_2000, FFE_TXRH_13, CFE_2010, CFE_1999, FFE_PFCB_9, CFE_2007, FFE_RARE_10, Pension, CFE_1998, FFE_EAT_7, CFE_1995, FFE_CAKE_3, Lag4_Labor, FFE_DRI_6, CFE_2003, Labor, ROA, Lag4_RDT, Ln_S_EMP, LB, Advertising, RDT, FFE_DIN_5, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.174	.230		-.755	.451		
	LB	-.868	.356	-.161	-2.436	.016	.289	3.463
	RDT	.751	1.395	.051	.538	.591	.139	7.184
	Advertising	-5.428	2.072	-.256	-2.619	.010	.133	7.530
	Labor	3.797	1.059	.199	3.585	.000	.413	2.421
	Pension	22.156	7.747	.126	2.860	.005	.657	1.522
	ROA	6.273	.715	.529	8.774	.000	.350	2.861
	Franchise	.380	.166	.319	2.295	.023	.066	15.198
	FFE_APPB_1	.698	.160	.328	4.355	.000	.224	4.472
	FFE_CAKE_3	.889	.193	.442	4.616	.000	.138	7.241
	FFE_CHUX_4	-.001	.031	-.003	-.042	.967	.310	3.224
	FFE_DIN_5	.191	.034	.511	5.602	.000	.152	6.564
	FFE_DRI_6	1.497	.254	.745	5.882	.000	.079	12.630
	FFE_EAT_7	.679	.155	.415	4.384	.000	.142	7.046
	FFE_OSI_8	.698	.177	.328	3.946	.000	.184	5.437
	FFE_PFCB_9	.965	.188	.439	5.134	.000	.173	5.769
	FFE_RARE_10	.051	.117	.024	.438	.662	.420	2.383
	FFE_RRGB_11	.536	.155	.208	3.457	.001	.349	2.862
	FFE_TXRH_13	.405	.138	.141	2.942	.004	.549	1.820
	CFE_1980	.074	.355	.009	.208	.835	.638	1.567
	CFE_1981	-.128	.356	-.016	-.361	.719	.634	1.578
	CFE_1983	-.198	.360	-.025	-.550	.583	.622	1.607
	CFE_1984	.282	.352	.035	.799	.425	.647	1.545
	CFE_1985	.503	.272	.089	1.853	.066	.548	1.826
	CFE_1986	.257	.266	.045	.963	.337	.569	1.756
	CFE_1987	.183	.270	.032	.678	.499	.555	1.802
	CFE_1988	-.240	.253	-.043	-.947	.345	.629	1.591
	CFE_1989	-.120	.246	-.021	-.490	.625	.669	1.494
	CFE_1990	-.459	.220	-.099	-2.090	.038	.561	1.784
	CFE_1991	.097	.171	.027	.566	.572	.560	1.787
	CFE_1992	.001	.151	.000	.007	.995	.457	2.190

CFE_1993	.037	.144	.013	.256	.798	.500	1.999
CFE_1994	-.240	.149	-.084	-1.608	.110	.466	2.148
CFE_1995	-.217	.142	-.080	-1.527	.129	.460	2.173
CFE_1996	-.369	.148	-.129	-2.502	.013	.477	2.095
CFE_1997	-.441	.151	-.163	-2.922	.004	.407	2.456
CFE_1998	-.355	.144	-.138	-2.469	.015	.406	2.462
CFE_1999	-.424	.143	-.165	-2.977	.003	.414	2.418
CFE_2000	-.294	.141	-.114	-2.081	.039	.422	2.367
CFE_2001	-.135	.127	-.052	-1.057	.292	.518	1.932
CFE_2002	-.345	.132	-.134	-2.615	.010	.483	2.068
CFE_2003	-.118	.121	-.048	-.982	.328	.528	1.893
CFE_2005	-.135	.127	-.052	-1.064	.289	.522	1.914
CFE_2006	.008	.129	.003	.061	.951	.561	1.782
CFE_2007	-.531	.151	-.196	-3.504	.001	.405	2.469
CFE_2008	-1.033	.173	-.382	-5.954	.000	.309	3.238
CFE_2009	-.540	.134	-.199	-4.024	.000	.516	1.936
CFE_2010	-.316	.137	-.117	-2.301	.023	.492	2.032
CFE_2011	-.378	.142	-.132	-2.669	.008	.518	1.932
Ln_S_EMP	.025	.028	.056	.900	.369	.327	3.059
Lag4_RDT	-1.836	.847	-.153	-2.168	.032	.256	3.901
Lag4_Advertising	-5.534	1.691	-.272	-3.273	.001	.184	5.435
Lag4_Labor	-2.038	1.036	-.107	-1.966	.051	.429	2.332
Lag4_Pension	43.846	14.051	.184	3.120	.002	.367	2.726

a. Dependent Variable: Ln_M_to_B

A.3.8 Casual Dining Restaurant Firm Model 8

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.900[a]	.810	.744	.27984	1.959

a. Predictors: (Constant), Lag5_Pension, CFE_1998, FFE_DRI_6, CFE_1983, CFE_1980, CFE_1981, CFE_1984, CFE_1989, CFE_1988, CFE_1987, CFE_1985, CFE_1986, CFE_1990, CFE_1995, CFE_1991, CFE_2006, ROA, FFE_TXRH_13, CFE_1997, CFE_2002, CFE_2004, CFE_1999, CFE_2007, FFE_CAKE_3, CFE_1992, FFE_RRGB_11, CFE_1994, CFE_2011, Pension, CFE_2010, CFE_1993, FFE_PFCB_9, CFE_2009, FFE_RARE_10, CFE_2005, FFE_APPB_1, FFE_DIN_5, CFE_2001, FFE_EAT_7, CFE_1996, Labor, CFE_2000, Lag5_Labor, FFE_OSI_8, FFE_CHUX_4, LB, Lag5_RDT, Ln_S_EMP, CFE_2008, Lag5_Advertising, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.035	53	.963	12.296	.000[a]
	Residual	11.981	153	.078		
	Total	63.017	206			

a. Predictors: (Constant), Lag5_Pension, CFE_1998, FFE_DRI_6, CFE_1983, CFE_1980, CFE_1981, CFE_1984, CFE_1989, CFE_1988, CFE_1987, CFE_1985, CFE_1986, CFE_1990, CFE_1995, CFE_1991, CFE_2006, ROA, FFE_TXRH_13, CFE_1997, CFE_2002, CFE_2004, CFE_1999, CFE_2007, FFE_CAKE_3, CFE_1992, FFE_RRGB_11, CFE_1994, CFE_2011, Pension, CFE_2010, CFE_1993, FFE_PFCB_9, CFE_2009, FFE_RARE_10, CFE_2005, FFE_APPB_1, FFE_DIN_5, CFE_2001, FFE_EAT_7, CFE_1996, Labor, CFE_2000, Lag5_Labor, FFE_OSI_8, FFE_CHUX_4, LB, Lag5_RDT, Ln_S_EMP, CFE_2008, Lag5_Advertising, RDT, Advertising, Franchise

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.241	.226		-1.066	.288		
	LB	-.754	.354	-.140	-2.129	.035	.286	3.494
	RDT	.518	1.411	.035	.367	.714	.134	7.460
	Advertising	-6.430	1.973	-.303	-3.259	.001	.143	6.969
	Labor	3.384	.979	.177	3.456	.001	.476	2.102
	Pension	22.560	7.686	.128	2.935	.004	.653	1.531
	ROA	6.225	.721	.525	8.629	.000	.336	2.976
	Franchise	.321	.159	.269	2.016	.046	.070	14.286
	FFE_APPB_1	.786	.168	.358	4.680	.000	.213	4.703
	FFE_CAKE_3	.856	.183	.426	4.681	.000	.150	6.663
	FFE_CHUX_4	.011	.031	.022	.343	.732	.299	3.345
	FFE_DIN_5	.211	.035	.564	5.949	.000	.138	7.245
	FFE_DRI_6	1.526	.250	.759	6.097	.000	.080	12.479
	FFE_EAT_7	.772	.157	.471	4.926	.000	.136	7.361
	FFE_OSI_8	.788	.179	.370	4.412	.000	.177	5.663
	FFE_PFCB_9	.920	.175	.419	5.260	.000	.196	5.097
	FFE_RARE_10	.079	.117	.037	.672	.503	.408	2.448
	FFE_RRGB_11	.576	.153	.224	3.753	.000	.349	2.862
	FFE_TXRH_13	.394	.134	.138	2.946	.004	.569	1.758
	CFE_1980	.155	.349	.019	.445	.657	.647	1.546
	CFE_1981	-.043	.351	-.005	-.123	.902	.640	1.562
	CFE_1983	-.111	.353	-.014	-.315	.753	.631	1.585
	CFE_1984	.342	.345	.043	.990	.324	.661	1.513
	CFE_1985	.513	.264	.091	1.943	.054	.567	1.763
	CFE_1986	.344	.264	.061	1.302	.195	.565	1.769
	CFE_1987	.258	.268	.046	.962	.337	.550	1.819
	CFE_1988	-.122	.253	-.022	-.483	.630	.619	1.615
	CFE_1989	-.047	.243	-.008	-.194	.847	.671	1.489
	CFE_1990	-.439	.216	-.095	-2.029	.044	.566	1.766
	CFE_1991	.114	.168	.032	.677	.500	.567	1.763
	CFE_1992	.120	.159	.039	.754	.452	.457	2.189

CFE_1993	.051	.148	.018	.346	.730	.468	2.138
CFE_1994	-.165	.157	-.058	-1.053	.294	.412	2.425
CFE_1995	-.143	.141	-.053	-1.017	.311	.458	2.182
CFE_1996	-.334	.152	-.117	-2.196	.030	.440	2.274
CFE_1997	-.393	.151	-.145	-2.600	.010	.399	2.506
CFE_1998	-.298	.150	-.116	-1.979	.050	.364	2.750
CFE_1999	-.336	.145	-.131	-2.325	.021	.394	2.538
CFE_2000	-.207	.137	-.080	-1.514	.132	.441	2.267
CFE_2001	-.086	.128	-.033	-.673	.502	.503	1.989
CFE_2002	-.235	.132	-.091	-1.778	.077	.470	2.127
CFE_2004	.086	.120	.037	.722	.471	.483	2.070
CFE_2005	-.053	.132	-.021	-.402	.688	.476	2.102
CFE_2006	.093	.132	.034	.701	.484	.522	1.916
CFE_2007	-.392	.160	-.145	-2.458	.015	.357	2.803
CFE_2008	-.961	.182	-.355	-5.268	.000	.273	3.658
CFE_2009	-.458	.136	-.169	-3.366	.001	.492	2.032
CFE_2010	-.226	.137	-.083	-1.650	.101	.487	2.054
CFE_2011	-.409	.145	-.143	-2.821	.005	.483	2.069
Ln_S_EMP	.021	.027	.046	.755	.451	.334	2.997
Lag5_RDT	-1.392	.783	-.115	-1.778	.077	.296	3.381
Lag5_Advertising	-5.890	1.551	-.287	-3.796	.000	.218	4.595
Lag5_Labor	-1.616	.976	-.087	-1.655	.100	.446	2.241
Lag5_Pension	46.533	13.059	.195	3.563	.000	.414	2.414

a. Dependent Variable: Ln_M_to_B

A.3.9 Casual Dining Restaurant Firm Model 9

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.882[a]	.779	.713	.29496	1.959

a. Predictors: (Constant), Ln_S_EMP, FFE_CAKE_3, CFE_1998, CFE_1980, CFE_1981, CFE_1989, CFE_1988, CFE_1993, CFE_1990, CFE_1983, CFE_1987, CFE_2011, CFE_1992, CFE_2008, FFE_DIN_5, CFE_2007, CFE_1986, CFE_2009, CFE_1984, CFE_2005, FFE_PFCB_9, CFE_1985, CFE_2002, CFE_2003, FFE_DRI_6, CFE_2010, FFE_RARE_10, CFE_2001, FFE_TXRH_13, CFE_1991, FFE_RRGB_11, CFE_1999, FFE_OSI_8, CFE_1996, CFE_2006, FFE_APPB_1, CFE_1995, FFE_CHUX_4, Pension, CFE_2000, CFE_1994, Labor, FFE_EAT_7, CFE_1997, ROA, LB, RDT, Advertising

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.301	48	1.027	11.806	.000[a]
	Residual	14.007	161	.087		
	Total	63.308	209			

a. Predictors: (Constant), Ln_S_EMP, FFE_CAKE_3, CFE_1998, CFE_1980, CFE_1981, CFE_1989, CFE_1988, CFE_1993, CFE_1990, CFE_1983, CFE_1987, CFE_2011, CFE_1992, CFE_2008, FFE_DIN_5, CFE_2007, CFE_1986, CFE_2009, CFE_1984, CFE_2005, FFE_PFCB_9, CFE_1985, CFE_2002, CFE_2003, FFE_DRI_6, CFE_2010, FFE_RARE_10, CFE_2001, FFE_TXRH_13, CFE_1991, FFE_RRGB_11, CFE_1999, FFE_OSI_8, CFE_1996, CFE_2006, FFE_APPB_1, CFE_1995, FFE_CHUX_4, Pension, CFE_2000, CFE_1994, Labor, FFE_EAT_7, CFE_1997, ROA, LB, RDT, Advertising

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.442	.154		2.868	.005		
	LB	-.776	.368	-.144	-2.109	.036	.293	3.410
	RDT	1.299	1.247	.089	1.042	.299	.187	5.353
	Advertising	-5.887	1.819	-.278	-3.237	.001	.187	5.358
	Labor	2.200	.933	.115	2.357	.020	.576	1.737
	Pension	18.419	7.910	.104	2.328	.021	.685	1.460
	ROA	5.952	.710	.504	8.388	.000	.381	2.625
	FFE_APPB_1	.508	.140	.252	3.614	.000	.282	3.544
	FFE_CAKE_3	.384	.107	.191	3.574	.000	.483	2.070
	FFE_CHUX_4	-.016	.027	-.034	-.597	.551	.420	2.380
	FFE_DIN_5	.118	.028	.315	4.167	.000	.241	4.158
	FFE_DRI_6	.802	.147	.398	5.455	.000	.258	3.880
	FFE_EAT_7	.642	.125	.392	5.121	.000	.235	4.255
	FFE_OSI_8	.714	.155	.335	4.620	.000	.262	3.822
	FFE_PFCB_9	.492	.111	.223	4.440	.000	.543	1.841
	FFE_RARE_10	.069	.109	.032	.634	.527	.526	1.902
	FFE_RRGB_11	.271	.140	.105	1.939	.054	.469	2.132
	FFE_TXRH_13	.307	.132	.107	2.327	.021	.651	1.537
	CFE_1980	-.487	.322	-.061	-1.513	.132	.843	1.186
	CFE_1981	-.685	.324	-.086	-2.116	.036	.834	1.200
	CFE_1983	-.742	.327	-.093	-2.267	.025	.815	1.226
	CFE_1984	-.264	.329	-.033	-.801	.424	.808	1.238
	CFE_1985	.028	.243	.005	.114	.909	.745	1.342
	CFE_1986	-.188	.239	-.033	-.787	.433	.768	1.302
	CFE_1987	-.245	.246	-.043	-.999	.320	.728	1.373
	CFE_1988	-.586	.239	-.104	-2.448	.015	.767	1.304
	CFE_1989	-.180	.206	-.039	-.876	.382	.695	1.439
	CFE_1990	-.777	.194	-.193	-4.005	.000	.589	1.697
	CFE_1991	-.087	.162	-.024	-.534	.594	.676	1.480
	CFE_1992	-.084	.146	-.029	-.577	.565	.532	1.881
	CFE_1993	-.072	.142	-.025	-.507	.613	.558	1.793

CFE_1994	-.346	.149	-.121	-2.328	.021	.510	1.959
CFE_1995	-.292	.135	-.108	-2.160	.032	.553	1.809
CFE_1996	-.436	.149	-.152	-2.935	.004	.511	1.955
CFE_1997	-.452	.155	-.167	-2.907	.004	.418	2.394
CFE_1998	-.397	.148	-.154	-2.682	.008	.418	2.394
CFE_1999	-.487	.147	-.189	-3.309	.001	.422	2.369
CFE_2000	-.353	.145	-.137	-2.433	.016	.434	2.302
CFE_2001	-.242	.130	-.094	-1.863	.064	.543	1.840
CFE_2002	-.381	.136	-.148	-2.790	.006	.491	2.037
CFE_2003	-.133	.125	-.054	-1.061	.290	.533	1.875
CFE_2005	-.127	.132	-.049	-.962	.338	.525	1.904
CFE_2006	.026	.133	.010	.194	.846	.567	1.763
CFE_2007	-.464	.155	-.171	-2.993	.003	.421	2.377
CFE_2008	-.986	.178	-.364	-5.551	.000	.320	3.127
CFE_2009	-.527	.138	-.195	-3.820	.000	.530	1.887
CFE_2010	-.284	.141	-.105	-2.023	.045	.511	1.957
CFE_2011	-.472	.145	-.165	-3.263	.001	.539	1.854
Ln_S_EMP	.015	.028	.035	.546	.586	.340	2.945

a. Dependent Variable: Ln_M_to_B

A.4 Multiple Regressions for Hypothesis Four

A.4.1 Quick Service Restaurant Firm Model 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.771[a]	.594	.462	.66112	2.599

a. Predictors: (Constant), Ln_AT, FFE_BKW_14, Advertising, CFE_2004, CFE_1984, CFE_1985, CFE_1983, Pension, CFE_1980, CFE_1986, CFE_1981, CFE_1982, CFE_1998, CFE_1997, CFE_1999, CFE_2007, CFE_1993, FFE_TAST_23, CFE_2000, CFE_1988, CFE_1996, CFE_1987, CFE_2001, FFE_MCD_18, CFE_2008, CFE_1989, CFE_1995, CFE_1992, CFE_2002, FFE_QUIZ_22, CFE_2009, FFE_WEN_24, CFE_1990, CFE_2005, FFE_PZZA_20, FFE_YUM_25, CFE_2006, CFE_1991, RDT, FFE_GTIM_16, CFE_2011, CFE_2003, ROA, FFE_MRFD_19, LB, Labor, CFE_1994, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.196	48	1.962	4.490	.000[a]
	Residual	64.250	147	.437		
	Total	158.446	195			

a. Predictors: (Constant), Ln_AT, FFE_BKW_14, Advertising, CFE_2004, CFE_1984, CFE_1985, CFE_1983, Pension, CFE_1980, CFE_1986, CFE_1981, CFE_1982, CFE_1998, CFE_1997, CFE_1999, CFE_2007, CFE_1993, FFE_TAST_23, CFE_2000, CFE_1988, CFE_1996, CFE_1987, CFE_2001, FFE_MCD_18, CFE_2008, CFE_1989, CFE_1995, CFE_1992, CFE_2002, FFE_QUIZ_22, CFE_2009, FFE_WEN_24, CFE_1990, CFE_2005, FFE_PZZA_20, FFE_YUM_25, CFE_2006, CFE_1991, RDT, FFE_GTIM_16, CFE_2011, CFE_2003, ROA, FFE_MRFD_19, LB, Labor, CFE_1994, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.227	.651		3.422	.001		
	LB	-.327	.724	-.045	-.452	.652	.276	3.627
	RDT	1.491	.516	.214	2.890	.004	.501	1.997
	Advertising	7.748	2.827	.232	2.741	.007	.386	2.590
	Labor	-1.329	.742	-.262	-1.791	.075	.129	7.773
	Pension	-5.544	27.907	-.023	-.199	.843	.210	4.753
	ROA	.565	.671	.070	.843	.401	.395	2.534
	FFE_BKW_14	-.168	.430	-.030	-.391	.696	.484	2.064
	FFE_GTIM_16	-.561	.332	-.197	-1.686	.094	.202	4.939
	FFE_MCD_18	.107	.326	.044	.328	.744	.154	6.513
	FFE_MRFD_19	.635	.306	.223	2.075	.040	.239	4.180
	FFE_PZZA_20	.120	.382	.039	.314	.754	.175	5.715
	FFE_PZZI_21	.460	.475	.161	.967	.335	.099	10.101
	FFE_QUIZ_22	.518	.398	.107	1.301	.195	.409	2.443
	FFE_TAST_23	.377	.477	.059	.791	.430	.491	2.038
	FFE_WEN_24	-.595	.288	-.238	-2.067	.040	.207	4.823
	FFE_YUM_25	1.435	.285	.351	5.030	.000	.566	1.768
	CFE_1980	-.857	.451	-.117	-1.900	.059	.727	1.375
	CFE_1981	-.628	.464	-.086	-1.352	.178	.686	1.458
	CFE_1982	-.833	.459	-.114	-1.814	.072	.702	1.425
	CFE_1983	-1.099	.504	-.150	-2.182	.031	.583	1.715
	CFE_1984	-1.465	.502	-.200	-2.916	.004	.586	1.705
	CFE_1985	-1.379	.493	-.188	-2.800	.006	.610	1.640
	CFE_1986	-.451	.454	-.062	-.994	.322	.717	1.394
	CFE_1987	-.638	.414	-.112	-1.540	.126	.523	1.913
	CFE_1988	-.367	.414	-.058	-.887	.377	.652	1.535
	CFE_1989	.663	.432	.104	1.535	.127	.597	1.674
	CFE_1990	.070	.455	.011	.154	.878	.539	1.857
	CFE_1991	.568	.426	.089	1.332	.185	.613	1.630
	CFE_1992	.524	.381	.092	1.375	.171	.619	1.616
	CFE_1993	-.138	.491	-.024	-.280	.780	.372	2.689

CFE_1994	-.632	.512	-.139	-1.233	.220	.217	4.607
CFE_1995	-.380	.456	-.084	-.833	.406	.273	3.656
CFE_1996	-.003	.443	-.001	-.006	.995	.291	3.440
CFE_1997	-.171	.426	-.038	-.403	.688	.314	3.185
CFE_1998	.082	.428	.018	.191	.849	.311	3.220
CFE_1999	.128	.393	.027	.326	.745	.418	2.390
CFE_2000	-.218	.454	-.045	-.481	.631	.314	3.185
CFE_2001	-.277	.465	-.057	-.596	.552	.299	3.343
CFE_2002	-.945	.485	-.195	-1.949	.053	.275	3.634
CFE_2003	-1.022	.532	-.211	-1.921	.057	.229	4.375
CFE_2004	-.479	.381	-.099	-1.260	.210	.447	2.237
CFE_2005	-.856	.490	-.177	-1.747	.083	.270	3.705
CFE_2006	-.230	.430	-.054	-.535	.593	.275	3.632
CFE_2007	-.147	.403	-.034	-.364	.717	.314	3.188
CFE_2008	-.181	.411	-.042	-.441	.660	.301	3.320
CFE_2009	-.210	.310	-.051	-.678	.499	.479	2.087
CFE_2011	.110	.327	.024	.336	.737	.531	1.882
Ln_AT	-.138	.062	-.385	-2.218	.028	.092	10.923

a. Dependent Variable: Ln_M_to_B

A.4.2 Quick Service Restaurant Firm Model 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.767[a]	.588	.454	.66629	2.583

a. Predictors: (Constant), Ln_REVT, CFE_2004, FFE_JACK_17, ROA, CFE_1998, CFE_1985, FFE_BKW_14, CFE_1984, CFE_1986, CFE_1993, CFE_1980, CFE_1982, FFE_TAST_23, CFE_1997, CFE_1999, CFE_1981, CFE_2007, CFE_2002, CFE_1988, CFE_2001, CFE_1987, CFE_2009, CFE_1983, FFE_WEN_24, CFE_2000, CFE_1989, CFE_1996, FFE_YUM_25, FFE_QUIZ_22, CFE_1990, CFE_1995, CFE_2008, FFE_PZZA_20, CFE_1992, CFE_2005, FFE_MRFD_19, CFE_1991, CFE_2003, FFE_PZZI_21, RDT, CFE_2010, CFE_2006, Advertising, FFE_GTIM_16, LB, Pension, CFE_2011, Labor

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.187	48	1.941	4.373	.000[a]
	Residual	65.259	147	.444		
	Total	158.446	195			

a. Predictors: (Constant), Ln_REVT, CFE_2004, FFE_JACK_17, ROA, CFE_1998, CFE_1985, FFE_BKW_14, CFE_1984, CFE_1986, CFE_1993, CFE_1980, CFE_1982, FFE_TAST_23, CFE_1997, CFE_1999, CFE_1981, CFE_2007, CFE_2002, CFE_1988, CFE_2001, CFE_1987, CFE_2009, CFE_1983, FFE_WEN_24, CFE_2000, CFE_1989, CFE_1996, FFE_YUM_25, FFE_QUIZ_22, CFE_1990, CFE_1995, CFE_2008, FFE_PZZA_20, CFE_1992, CFE_2005, FFE_MRFD_19, CFE_1991, CFE_2003, FFE_PZZI_21, RDT, CFE_2010, CFE_2006, Advertising, FFE_GTIM_16, LB, Pension, CFE_2011, Labor

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.682	.314		5.360	.000		
	LB	-.383	.729	-.053	-.525	.600	.276	3.619
	RDT	1.471	.520	.212	2.828	.005	.500	1.998
	Advertising	7.906	2.848	.236	2.777	.006	.387	2.587
	Labor	-1.264	.751	-.249	-1.683	.095	.128	7.835
	Pension	-3.595	28.134	-.015	-.128	.898	.210	4.756
	ROA	.552	.677	.069	.816	.416	.393	2.542
	FFE_BKW_14	-.265	.358	-.046	-.739	.461	.709	1.409
	FFE_GTIM_16	-.668	.281	-.234	-2.377	.019	.288	3.470
	FFE_JACK_17	-.127	.328	-.045	-.386	.700	.203	4.933
	FFE_MRFD_19	.507	.237	.178	2.138	.034	.405	2.469
	FFE_PZZA_20	.015	.222	.005	.068	.946	.525	1.905
	FFE_PZZI_21	.350	.336	.123	1.042	.299	.202	4.960
	FFE_QUIZ_22	.390	.344	.080	1.133	.259	.557	1.797
	FFE_TAST_23	.243	.388	.038	.626	.532	.751	1.331
	FFE_WEN_24	-.720	.225	-.288	-3.200	.002	.345	2.899
	FFE_YUM_25	1.307	.335	.320	3.905	.000	.417	2.396
	CFE_1980	-.418	.563	-.057	-.742	.459	.474	2.110
	CFE_1981	-.189	.567	-.026	-.334	.739	.467	2.139
	CFE_1982	-.403	.571	-.055	-.706	.481	.461	2.167
	CFE_1983	-.669	.552	-.091	-1.212	.228	.493	2.029
	CFE_1984	-1.028	.476	-.140	-2.158	.033	.663	1.509
	CFE_1985	-.980	.521	-.134	-1.881	.062	.553	1.807
	CFE_1986	-.100	.546	-.014	-.183	.855	.505	1.980
	CFE_1987	-.321	.510	-.056	-.629	.530	.350	2.855
	CFE_1988	-.095	.547	-.015	-.174	.862	.378	2.642
	CFE_1989	.902	.579	.142	1.560	.121	.339	2.954
	CFE_1990	.288	.610	.045	.472	.638	.304	3.287
	CFE_1991	.794	.627	.125	1.266	.207	.288	3.472
	CFE_1992	.841	.549	.147	1.531	.128	.302	3.310
	CFE_1993	.540	.407	.095	1.325	.187	.549	1.822

CFE_1995	.192	.340	.042	.565	.573	.499	2.003
CFE_1996	.568	.354	.125	1.602	.111	.461	2.168
CFE_1997	.386	.355	.085	1.087	.279	.458	2.183
CFE_1998	.642	.383	.141	1.675	.096	.394	2.537
CFE_1999	.647	.436	.133	1.483	.140	.346	2.890
CFE_2000	.359	.382	.074	.939	.350	.450	2.222
CFE_2001	.340	.370	.070	.919	.359	.481	2.080
CFE_2002	-.280	.369	-.058	-.761	.448	.484	2.068
CFE_2003	-.363	.383	-.075	-.950	.344	.449	2.225
CFE_2004	.017	.423	.004	.041	.968	.367	2.726
CFE_2005	-.273	.355	-.056	-.768	.443	.522	1.916
CFE_2006	.277	.356	.065	.779	.437	.409	2.448
CFE_2007	.292	.388	.068	.754	.452	.343	2.913
CFE_2008	.219	.465	.051	.471	.638	.240	4.174
CFE_2009	.099	.409	.024	.241	.810	.279	3.584
CFE_2010	.316	.478	.077	.660	.510	.205	4.880
CFE_2011	.469	.525	.103	.894	.373	.210	4.767
Ln_REVT	-.098	.061	-.249	-1.603	.111	.116	8.590

a. Dependent Variable: Ln_M_to_B

A.4.3 Quick Service Restaurant Firm Model 3

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.773[a]	.597	.462	.66602	2.599

a. Predictors: (Constant), Ln_S_EMP, C_Market_Level, CFE_2004, FFE_JACK_17, CFE_2007, CFE_1984, CFE_1983, FFE_TAST_23, CFE_1993, CFE_1982, Advertising, CFE_1998, FFE_BKW_14, CFE_2005, CFE_1986, CFE_1981, CFE_1985, CFE_1980, FFE_YUM_25, CFE_1996, CFE_1988, CFE_2000, CFE_1999, CFE_2006, CFE_1992, FFE_MCD_18, CFE_1987, FFE_PZZA_20, CFE_1989, CFE_1994, CFE_1997, CFE_1990, FFE_QUIZ_22, FFE_MRFD_19, CFE_2001, CFE_2010, CFE_1995, FFE_GTIM_16, RDT, CFE_1991, CFE_2003, ROA, CFE_2011, FFE_PZZI_21, CFE_2002, LB, Pension, Labor

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.151	48	1.961	4.422	.000[a]
	Residual	63.432	143	.444		
	Total	157.583	191			

a. Predictors: (Constant), Ln_S_EMP, C_Market_Level, CFE_2004, FFE_JACK_17, CFE_2007, CFE_1984, CFE_1983, FFE_TAST_23, CFE_1993, CFE_1982, Advertising, CFE_1998, FFE_BKW_14, CFE_2005, CFE_1986, CFE_1981, CFE_1985, CFE_1980, FFE_YUM_25, CFE_1996, CFE_1988, CFE_2000, CFE_1999, CFE_2006, CFE_1992, FFE_MCD_18, CFE_1987, FFE_PZZA_20, CFE_1989, CFE_1994, CFE_1997, CFE_1990, FFE_QUIZ_22, FFE_MRFD_19, CFE_2001, CFE_2010, CFE_1995, FFE_GTIM_16, RDT, CFE_1991, CFE_2003, ROA, CFE_2011, FFE_PZZI_21, CFE_2002, LB, Pension, Labor

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.775	.273		2.842	.005		
	LB	-.524	.740	-.071	-.709	.479	.278	3.595
	RDT	1.508	.521	.217	2.895	.004	.499	2.002
	Advertising	7.557	2.857	.226	2.646	.009	.385	2.595
	Labor	-1.158	.756	-.228	-1.532	.128	.127	7.855
	Pension	-7.327	28.251	-.030	-.259	.796	.211	4.738
	C_Market_Level	-.386	.619	-.079	-.624	.534	.174	5.748
	ROA	.620	.680	.077	.911	.364	.391	2.558
	FFE_BKW_14	.421	.387	.074	1.087	.279	.607	1.646
	FFE_GTIM_16	.063	.301	.022	.208	.835	.261	3.830
	FFE_JACK_17	.591	.290	.212	2.034	.044	.260	3.849
	FFE_MCD_18	.720	.227	.288	3.177	.002	.341	2.928
	FFE_MRFD_19	1.205	.243	.424	4.950	.000	.385	2.601
	FFE_PZZA_20	.688	.252	.227	2.733	.007	.409	2.442
	FFE_PZZI_21	1.058	.333	.372	3.177	.002	.205	4.872
	FFE_QUIZ_22	1.099	.330	.227	3.332	.001	.604	1.655
	FFE_TAST_23	.928	.445	.127	2.084	.039	.757	1.321
	FFE_YUM_25	2.061	.301	.506	6.850	.000	.517	1.935
	CFE_1980	-.218	.496	-.030	-.439	.661	.612	1.635
	CFE_1981	-.190	.451	-.026	-.420	.675	.737	1.356
	CFE_1982	-.316	.467	-.043	-.678	.499	.690	1.449
	CFE_1983	-.608	.489	-.083	-1.244	.216	.628	1.593
	CFE_1984	-.885	.437	-.121	-2.025	.045	.787	1.270
	CFE_1985	-.692	.512	-.095	-1.351	.179	.572	1.747
	CFE_1986	.165	.480	.023	.344	.732	.653	1.533
	CFE_1987	-.136	.413	-.024	-.330	.742	.534	1.873
	CFE_1988	.153	.465	.024	.329	.743	.524	1.908
	CFE_1989	1.155	.502	.182	2.299	.023	.449	2.229
	CFE_1990	.420	.463	.066	.908	.365	.528	1.893
	CFE_1991	1.139	.544	.180	2.092	.038	.382	2.615
	CFE_1992	.975	.413	.171	2.361	.020	.533	1.875

CFE_1993	.419	.361	.074	1.159	.248	.697	1.434
CFE_1994	-.175	.351	-.039	-.499	.618	.470	2.126
CFE_1995	.213	.356	.047	.599	.550	.456	2.194
CFE_1996	.531	.324	.117	1.640	.103	.552	1.811
CFE_1997	.382	.336	.084	1.140	.256	.514	1.946
CFE_1998	.792	.352	.164	2.253	.026	.531	1.882
CFE_1999	.687	.361	.142	1.904	.059	.505	1.978
CFE_2000	.346	.367	.066	.943	.347	.567	1.765
CFE_2001	-.082	.404	-.017	-.204	.839	.403	2.480
CFE_2002	-.846	.448	-.175	-1.889	.061	.328	3.047
CFE_2003	-.590	.407	-.122	-1.448	.150	.397	2.521
CFE_2004	-.018	.332	-.003	-.054	.957	.691	1.446
CFE_2005	-.214	.313	-.044	-.685	.494	.672	1.487
CFE_2006	.340	.300	.079	1.135	.258	.576	1.736
CFE_2007	.297	.299	.069	.993	.322	.580	1.724
CFE_2010	.505	.350	.118	1.440	.152	.421	2.374
CFE_2011	.661	.389	.146	1.699	.091	.383	2.611
Ln_S_EMP	-.158	.069	-.410	-2.278	.024	.087	11.499

a. Dependent Variable: Ln_M_to_B

A.4.4 Quick Service Restaurant Firm Model 4

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.778[a]	.605	.457	.66925	2.652

a. Predictors: (Constant), Lag1_Pension, Lag1_RDT, C_Market_Level, CFE_1992, CFE_1986, CFE_1993, CFE_2004, CFE_1982, CFE_1984, CFE_1983, FFE_BKW_14, FFE_QUIZ_22, CFE_1981, CFE_2005, FFE_TAST_23, CFE_1989, CFE_1990, CFE_1985, CFE_1980, CFE_1996, CFE_2007, CFE_1998, CFE_1991, CFE_1994, FFE_WEN_24, CFE_1988, CFE_2006, CFE_2010, Lag1_Labor, CFE_2000, CFE_1999, CFE_2011, FFE_MCD_18, CFE_2001, FFE_YUM_25, CFE_2003, FFE_PZZA_20, CFE_1987, CFE_1997, CFE_2002, FFE_MRFD_19, CFE_1995, Advertising, ROA, RDT, LB, FFE_GTIM_16, Lag1_Advertising, Pension, FFE_PZZI_21, Ln_S_EMP, Labor

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.326	52	1.833	4.093	.000[a]
	Residual	62.257	139	.448		
	Total	157.583	191			

a. Predictors: (Constant), Lag1_Pension, Lag1_RDT, C_Market_Level, CFE_1992, CFE_1986, CFE_1993, CFE_2004, CFE_1982, CFE_1984, CFE_1983, FFE_BKW_14, FFE_QUIZ_22, CFE_1981, CFE_2005, FFE_TAST_23, CFE_1989, CFE_1990, CFE_1985, CFE_1980, CFE_1996, CFE_2007, CFE_1998, CFE_1991, CFE_1994, FFE_WEN_24, CFE_1988, CFE_2006, CFE_2010, Lag1_Labor, CFE_2000, CFE_1999, CFE_2011, FFE_MCD_18, CFE_2001, FFE_YUM_25, CFE_2003, FFE_PZZA_20, CFE_1987, CFE_1997, CFE_2002, FFE_MRFD_19, CFE_1995, Advertising, ROA, RDT, LB, FFE_GTIM_16, Lag1_Advertising, Pension, FFE_PZZI_21, Ln_S_EMP, Labor

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.284	.360		3.571	.000		
	LB	-.470	.766	-.064	-.614	.540	.262	3.815
	RDT	1.792	.680	.258	2.635	.009	.295	3.385
	Advertising	11.508	4.072	.344	2.826	.005	.192	5.221
	Labor	-1.130	1.145	-.222	-.988	.325	.056	17.830
	Pension	-21.383	39.320	-.087	-.544	.587	.110	9.090
	C_Market_Level	-.470	.632	-.097	-.744	.458	.169	5.930
	ROA	.855	.714	.107	1.198	.233	.358	2.791
	FFE_BKW_14	-.122	.439	-.021	-.278	.781	.478	2.093
	FFE_GTIM_16	-.450	.351	-.155	-1.282	.202	.194	5.151
	FFE_MCD_18	.222	.344	.089	.645	.520	.149	6.707
	FFE_MRFD_19	.675	.323	.237	2.088	.039	.220	4.539
	FFE_PZZA_20	.198	.411	.065	.482	.631	.155	6.446
	FFE_PZZI_21	.679	.524	.239	1.296	.197	.084	11.924
	FFE_QUIZ_22	.658	.428	.136	1.537	.126	.363	2.755
	FFE_TAST_23	.466	.541	.064	.861	.391	.518	1.930
	FFE_WEN_24	-.471	.308	-.189	-1.528	.129	.187	5.361
	FFE_YUM_25	1.512	.293	.371	5.163	.000	.551	1.814
	CFE_1980	-.283	.503	-.039	-.562	.575	.600	1.668
	CFE_1981	-.165	.456	-.023	-.362	.718	.729	1.371
	CFE_1982	-.345	.471	-.047	-.733	.465	.685	1.461
	CFE_1983	-.619	.494	-.085	-1.254	.212	.623	1.606
	CFE_1984	-.993	.452	-.136	-2.197	.030	.743	1.346
	CFE_1985	-.734	.524	-.100	-1.399	.164	.551	1.814
	CFE_1986	.113	.489	.015	.231	.817	.635	1.575
	CFE_1987	-.100	.428	-.018	-.233	.816	.502	1.993
	CFE_1988	.338	.487	.053	.694	.489	.483	2.070
	CFE_1989	1.185	.510	.187	2.323	.022	.440	2.274
	CFE_1990	.467	.473	.074	.988	.325	.511	1.957
	CFE_1991	1.167	.549	.184	2.126	.035	.380	2.635
	CFE_1992	.946	.424	.166	2.228	.027	.511	1.959

CFE_1993	.369	.371	.065	.994	.322	.669	1.496
CFE_1994	-.247	.359	-.054	-.687	.493	.452	2.211
CFE_1995	.185	.359	.041	.515	.607	.454	2.201
CFE_1996	.531	.332	.117	1.598	.112	.529	1.892
CFE_1997	.348	.340	.077	1.023	.308	.504	1.984
CFE_1998	.766	.355	.158	2.154	.033	.526	1.903
CFE_1999	.683	.370	.141	1.844	.067	.484	2.066
CFE_2000	.305	.375	.059	.813	.418	.549	1.823
CFE_2001	-.079	.417	-.016	-.190	.849	.383	2.614
CFE_2002	-.923	.459	-.191	-2.011	.046	.315	3.171
CFE_2003	-.591	.410	-.122	-1.441	.152	.395	2.533
CFE_2004	.003	.337	.001	.008	.993	.678	1.475
CFE_2005	-.249	.317	-.051	-.783	.435	.659	1.517
CFE_2006	.323	.304	.075	1.065	.289	.567	1.764
CFE_2007	.297	.300	.069	.990	.324	.579	1.728
CFE_2010	.505	.356	.118	1.420	.158	.413	2.424
CFE_2011	.653	.391	.144	1.672	.097	.383	2.613
Ln_S_EMP	-.163	.070	-.422	-2.308	.022	.085	11.777
Lag1_RDT	-.406	.476	-.081	-.853	.395	.315	3.171
Lag1_Advertising	-4.342	3.770	-.134	-1.152	.251	.211	4.742
Lag1_Labor	.328	1.165	.063	.281	.779	.056	17.871
Lag1_Pension	19.945	39.842	.078	.501	.617	.117	8.518

a. Dependent Variable: Ln_M_to_B

A.4.5 Quick Service Restaurant Firm Model 5

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.784[a]	.614	.470	.66123	2.603

a. Predictors: (Constant), Lag2_Pension, CFE_1996, Lag2_RDT, CFE_1983, CFE_1986, CFE_1984, CFE_1985, CFE_1981, CFE_1982, CFE_1989, CFE_1980, CFE_1991, CFE_1992, CFE_1993, CFE_2004, CFE_1990, FFE_TAST_23, CFE_1998, CFE_2003, CFE_2005, FFE_BKW_14, CFE_2000, Lag2_Advertising, CFE_1997, CFE_1995, CFE_1999, CFE_1987, CFE_2001, CFE_2006, FFE_MCD_18, CFE_2002, FFE_QUIZ_22, CFE_2011, CFE_2007, FFE_YUM_25, FFE_GTIM_16, CFE_2008, FFE_PZZA_20, CFE_1994, FFE_WEN_24, CFE_1988, RDT, CFE_2010, ROA, FFE_MRFD_19, Advertising, Lag2_Labor, LB, Pension, Labor, Ln_S_EMP, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.809	52	1.862	4.258	.000[a]
	Residual	60.774	139	.437		
	Total	157.583	191			

a. Predictors: (Constant), Lag2_Pension, CFE_1996, Lag2_RDT, CFE_1983, CFE_1986, CFE_1984, CFE_1985, CFE_1981, CFE_1982, CFE_1989, CFE_1980, CFE_1991, CFE_1992, CFE_1993, CFE_2004, CFE_1990, FFE_TAST_23, CFE_1998, CFE_2003, CFE_2005, FFE_BKW_14, CFE_2000, Lag2_Advertising, CFE_1997, CFE_1995, CFE_1999, CFE_1987, CFE_2001, CFE_2006, FFE_MCD_18, CFE_2002, FFE_QUIZ_22, CFE_2011, CFE_2007, FFE_YUM_25, FFE_GTIM_16, CFE_2008, FFE_PZZA_20, CFE_1994, FFE_WEN_24, CFE_1988, RDT, CFE_2010, ROA, FFE_MRFD_19, Advertising, Lag2_Labor, LB, Pension, Labor, Ln_S_EMP, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.044	.403		2.590	.011		
	LB	-.254	.756	-.035	-.336	.738	.263	3.809
	RDT	1.334	.537	.192	2.484	.014	.462	2.163
	Advertising	10.903	3.371	.326	3.235	.002	.273	3.665
	Labor	-1.760	.853	-.346	-2.063	.041	.099	10.146
	Pension	-21.795	33.145	-.089	-.658	.512	.151	6.617
	ROA	.660	.712	.082	.927	.355	.352	2.840
	FFE_BKW_14	-.033	.440	-.006	-.076	.940	.464	2.156
	FFE_GTIM_16	-.498	.351	-.172	-1.421	.158	.190	5.264
	FFE_MCD_18	.346	.347	.138	.996	.321	.143	6.973
	FFE_MRFD_19	.690	.322	.243	2.146	.034	.217	4.610
	FFE_PZZA_20	.394	.414	.130	.950	.344	.149	6.724
	FFE_PZZI_21	1.018	.542	.358	1.879	.062	.077	13.066
	FFE_QUIZ_22	1.012	.452	.209	2.238	.027	.317	3.155
	FFE_TAST_23	.619	.541	.085	1.145	.254	.506	1.975
	FFE_WEN_24	-.338	.307	-.136	-1.100	.273	.183	5.469
	FFE_YUM_25	1.570	.292	.385	5.372	.000	.540	1.851
	CFE_1980	-.318	.494	-.044	-.644	.521	.608	1.645
	CFE_1981	-.098	.495	-.013	-.197	.844	.604	1.656
	CFE_1982	-.271	.481	-.037	-.563	.574	.639	1.566
	CFE_1983	-.555	.501	-.076	-1.108	.270	.591	1.693
	CFE_1984	-.850	.475	-.116	-1.791	.075	.657	1.522
	CFE_1985	-.756	.516	-.103	-1.465	.145	.556	1.797
	CFE_1986	.147	.519	.020	.283	.778	.550	1.818
	CFE_1987	.016	.494	.003	.033	.974	.367	2.721
	CFE_1988	.383	.526	.060	.727	.469	.403	2.482
	CFE_1989	1.144	.512	.180	2.235	.027	.426	2.348
	CFE_1990	.494	.554	.078	.890	.375	.363	2.754
	CFE_1991	1.253	.540	.197	2.320	.022	.383	2.611
	CFE_1992	1.123	.469	.197	2.396	.018	.409	2.447
	CFE_1993	.488	.384	.086	1.271	.206	.609	1.642

	CFE_1994	.006	.382	.001	.015	.988	.390	2.561
	CFE_1995	.062	.355	.014	.174	.862	.452	2.213
	CFE_1996	.457	.341	.101	1.341	.182	.491	2.037
	CFE_1997	.258	.342	.057	.755	.451	.487	2.052
	CFE_1998	.756	.384	.156	1.968	.051	.439	2.277
	CFE_1999	.605	.384	.125	1.574	.118	.439	2.279
	CFE_2000	.419	.381	.081	1.102	.273	.519	1.925
	CFE_2001	.055	.386	.011	.142	.887	.434	2.304
	CFE_2002	-.694	.418	-.144	-1.662	.099	.372	2.691
	CFE_2003	-.696	.410	-.144	-1.697	.092	.385	2.595
	CFE_2004	.080	.361	.015	.222	.824	.578	1.729
	CFE_2005	-.102	.352	-.021	-.290	.772	.523	1.910
	CFE_2006	.405	.312	.095	1.298	.197	.523	1.913
	CFE_2007	.426	.376	.099	1.134	.259	.361	2.773
	CFE_2008	.357	.433	.083	.824	.411	.271	3.684
	CFE_2010	.583	.381	.136	1.530	.128	.352	2.844
	CFE_2011	.898	.462	.198	1.944	.054	.267	3.742
	Ln_S_EMP	-.167	.069	-.433	-2.423	.017	.087	11.534
	Lag2_RDT	-.347	.361	-.066	-.963	.337	.582	1.717
	Lag2_Advertising	-2.625	3.044	-.080	-.862	.390	.320	3.127
	Lag2_Labor	1.565	.752	.305	2.080	.039	.129	7.740
	Lag2_Pension	23.948	34.305	.086	.698	.486	.183	5.457

a. Dependent Variable: Ln_M_to_B

A.4.6 Quick Service Restaurant Firm Model 6

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.787[a]	.619	.476	.65752	2.613

a. Predictors: (Constant), Lag3_Pension, CFE_2008, Advertising, CFE_1986, CFE_1985, CFE_1984, CFE_1989, CFE_1993, CFE_1988, CFE_1982, CFE_1983, CFE_1990, CFE_1981, CFE_1980, CFE_1991, CFE_2004, CFE_1992, CFE_2000, CFE_2005, CFE_1998, FFE_BKW_14, CFE_1987, CFE_1994, FFE_TAST_23, CFE_1995, CFE_2002, CFE_1997, CFE_2001, CFE_1999, FFE_MCD_18, CFE_1996, CFE_2003, FFE_QUIZ_22, FFE_WEN_24, CFE_2007, FFE_YUM_25, FFE_PZZA_20, CFE_2011, Lag3_RDT, CFE_2010, FFE_GTIM_16, RDT, Lag3_Advertising, CFE_2006, ROA, FFE_MRFD_19, Lag3_Labor, LB, Pension, Labor, Ln_S_EMP, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.488	52	1.875	4.336	.000[a]
	Residual	60.095	139	.432		
	Total	157.583	191			

a. Predictors: (Constant), Lag3_Pension, CFE_2008, Advertising, CFE_1986, CFE_1985, CFE_1984, CFE_1989, CFE_1993, CFE_1988, CFE_1982, CFE_1983, CFE_1990, CFE_1981, CFE_1980, CFE_1991, CFE_2004, CFE_1992, CFE_2000, CFE_2005, CFE_1998, FFE_BKW_14, CFE_1987, CFE_1994, FFE_TAST_23, CFE_1995, CFE_2002, CFE_1997, CFE_2001, CFE_1999, FFE_MCD_18, CFE_1996, CFE_2003, FFE_QUIZ_22, FFE_WEN_24, CFE_2007, FFE_YUM_25, FFE_PZZA_20, CFE_2011, Lag3_RDT, CFE_2010, FFE_GTIM_16, RDT, Lag3_Advertising, CFE_2006, ROA, FFE_MRFD_19, Lag3_Labor, LB, Pension, Labor, Ln_S_EMP, FFE_PZZI_21

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.952	.402		2.367	.019		
	LB	-.493	.734	-.067	-.671	.503	.275	3.632
	RDT	1.403	.544	.202	2.580	.011	.446	2.241
	Advertising	11.182	3.157	.335	3.542	.001	.307	3.252
	Labor	-1.682	.807	-.331	-2.085	.039	.109	9.172
	Pension	-17.204	31.381	-.070	-.548	.584	.167	5.998
	ROA	.781	.700	.097	1.114	.267	.359	2.783
	FFE_BKW_14	.031	.444	.005	.069	.945	.451	2.216
	FFE_GTIM_16	-.458	.349	-.158	-1.312	.192	.190	5.263
	FFE_MCD_18	.460	.351	.184	1.313	.191	.139	7.194
	FFE_MRFD_19	.783	.318	.275	2.462	.015	.220	4.552
	FFE_PZZA_20	.485	.412	.160	1.179	.241	.149	6.714
	FFE_PZZI_21	1.143	.542	.402	2.108	.037	.076	13.239
	FFE_QUIZ_22	1.229	.479	.254	2.568	.011	.280	3.575
	FFE_TAST_23	.768	.547	.105	1.404	.163	.490	2.041
	FFE_WEN_24	-.241	.318	-.097	-.758	.449	.169	5.912
	FFE_YUM_25	1.578	.290	.387	5.450	.000	.544	1.839
	CFE_1980	-.304	.503	-.042	-.603	.547	.578	1.731
	CFE_1981	-.125	.491	-.017	-.255	.799	.606	1.650
	CFE_1982	-.379	.482	-.052	-.786	.433	.629	1.589
	CFE_1983	-.522	.497	-.071	-1.049	.296	.592	1.690
	CFE_1984	-.898	.474	-.123	-1.896	.060	.652	1.533
	CFE_1985	-.746	.513	-.102	-1.455	.148	.557	1.795
	CFE_1986	.253	.528	.035	.480	.632	.525	1.903
	CFE_1987	-.198	.499	-.035	-.398	.691	.357	2.804
	CFE_1988	.293	.525	.046	.557	.578	.401	2.496
	CFE_1989	1.114	.510	.176	2.185	.031	.425	2.353
	CFE_1990	.413	.552	.065	.749	.455	.363	2.756
	CFE_1991	.989	.540	.156	1.832	.069	.378	2.643
	CFE_1992	1.195	.466	.210	2.566	.011	.409	2.444
	CFE_1993	.493	.382	.087	1.289	.199	.607	1.647

CFE_1994	-.071	.373	-.016	-.191	.849	.406	2.461
CFE_1995	.261	.352	.058	.742	.459	.455	2.198
CFE_1996	.437	.343	.096	1.273	.205	.480	2.084
CFE_1997	.239	.341	.053	.700	.485	.485	2.062
CFE_1998	.705	.379	.146	1.859	.065	.446	2.244
CFE_1999	.570	.384	.118	1.483	.140	.435	2.300
CFE_2000	.356	.374	.068	.952	.343	.533	1.877
CFE_2001	.062	.380	.013	.163	.870	.445	2.249
CFE_2002	-.666	.405	-.138	-1.646	.102	.391	2.558
CFE_2003	-.626	.413	-.129	-1.514	.132	.375	2.664
CFE_2004	.055	.357	.011	.154	.878	.583	1.716
CFE_2005	-.055	.350	-.011	-.156	.876	.522	1.917
CFE_2006	.441	.317	.103	1.391	.166	.502	1.991
CFE_2007	.447	.373	.104	1.200	.232	.363	2.755
CFE_2008	.310	.428	.072	.724	.470	.276	3.629
CFE_2010	.634	.376	.148	1.685	.094	.356	2.809
CFE_2011	.880	.458	.194	1.919	.057	.268	3.728
Ln_S_EMP	-.161	.069	-.419	-2.335	.021	.085	11.734
Lag3_RDT	-.463	.591	-.055	-.784	.434	.551	1.816
Lag3_Advertising	-2.671	2.621	-.083	-1.019	.310	.410	2.436
Lag3_Labor	1.799	.721	.338	2.496	.014	.150	6.667
Lag3_Pension	25.930	30.270	.091	.857	.393	.243	4.120

a. Dependent Variable: Ln_M_to_B

A.4.7 Quick Service Restaurant Firm Model 7

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.789[a]	.622	.480	.65474	2.580

a. Predictors: (Constant), Lag4_Pension, CFE_2005, Advertising, CFE_1986, CFE_1985, CFE_1993, CFE_1989, CFE_1984, FFE_TAST_23, CFE_1980, CFE_1983, FFE_BKW_14, CFE_1988, CFE_1982, CFE_1991, CFE_1981, CFE_2000, CFE_1990, CFE_1998, CFE_1992, CFE_1987, CFE_1994, CFE_2004, CFE_2001, CFE_1995, CFE_1996, CFE_2003, CFE_1999, CFE_2002, FFE_MCD_18, CFE_1997, Lag4_RDT, CFE_2008, FFE_QUIZ_22, CFE_2010, FFE_YUM_25, FFE_MRFD_19, CFE_2011, FFE_GTIM_16, CFE_2007, FFE_PZZA_20, RDT, Lag4_Advertising, CFE_2006, FFE_JACK_17, ROA, LB, FFE_PZZI_21, Pension, Lag4_Labor, Labor, Ln_S_EMP

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.996	52	1.885	4.396	.000[a]
	Residual	59.586	139	.429		
	Total	157.583	191			

a. Predictors: (Constant), Lag4_Pension, CFE_2005, Advertising, CFE_1986, CFE_1985, CFE_1993, CFE_1989, CFE_1984, FFE_TAST_23, CFE_1980, CFE_1983, FFE_BKW_14, CFE_1988, CFE_1982, CFE_1991, CFE_1981, CFE_2000, CFE_1990, CFE_1998, CFE_1992, CFE_1987, CFE_1994, CFE_2004, CFE_2001, CFE_1995, CFE_1996, CFE_2003, CFE_1999, CFE_2002, FFE_MCD_18, CFE_1997, Lag4_RDT, CFE_2008, FFE_QUIZ_22, CFE_2010, FFE_YUM_25, FFE_MRFD_19, CFE_2011, FFE_GTIM_16, CFE_2007, FFE_PZZA_20, RDT, Lag4_Advertising, CFE_2006, FFE_JACK_17, ROA, LB, FFE_PZZI_21, Pension, Lag4_Labor, Labor, Ln_S_EMP

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.809	.320		2.530	.013		
	LB	-.788	.738	-.107	-1.069	.287	.270	3.698
	RDT	1.015	.545	.146	1.863	.065	.441	2.270
	Advertising	12.275	3.275	.367	3.748	.000	.283	3.529
	Labor	-1.382	.798	-.272	-1.731	.086	.110	9.060
	Pension	-28.239	31.569	-.115	-.894	.373	.163	6.122
	ROA	.535	.684	.067	.783	.435	.374	2.672
	FFE_BKW_14	.249	.398	.044	.625	.533	.556	1.800
	FFE_GTIM_16	-.374	.357	-.129	-1.048	.296	.180	5.558
	FFE_JACK_17	.236	.331	.085	.715	.476	.194	5.168
	FFE_MCD_18	.771	.236	.309	3.264	.001	.304	3.293
	FFE_MRFD_19	.969	.281	.341	3.450	.001	.279	3.585
	FFE_PZZA_20	.770	.270	.254	2.858	.005	.345	2.902
	FFE_PZZI_21	1.529	.374	.537	4.086	.000	.157	6.358
	FFE_QUIZ_22	1.680	.392	.347	4.285	.000	.414	2.417
	FFE_TAST_23	.909	.450	.124	2.021	.045	.718	1.393
	FFE_YUM_25	1.827	.310	.448	5.885	.000	.469	2.130
	CFE_1980	-.233	.494	-.032	-.472	.638	.595	1.682
	CFE_1981	-.053	.501	-.007	-.106	.915	.579	1.728
	CFE_1982	-.341	.478	-.047	-.712	.478	.634	1.577
	CFE_1983	-.609	.496	-.083	-1.228	.221	.590	1.695
	CFE_1984	-1.007	.474	-.138	-2.122	.036	.645	1.549
	CFE_1985	-.724	.511	-.099	-1.417	.159	.556	1.798
	CFE_1986	.215	.510	.029	.421	.674	.558	1.793
	CFE_1987	-.129	.502	-.023	-.256	.798	.350	2.859
	CFE_1988	.056	.520	.009	.107	.915	.404	2.475
	CFE_1989	1.142	.518	.180	2.207	.029	.408	2.448
	CFE_1990	.407	.549	.064	.741	.460	.363	2.757
	CFE_1991	1.042	.535	.164	1.948	.053	.382	2.618
	CFE_1992	.913	.467	.161	1.956	.053	.404	2.477
	CFE_1993	.493	.381	.087	1.292	.199	.605	1.653

CFE_1994	-.138	.371	-.030	-.372	.711	.407	2.459
CFE_1995	.063	.351	.014	.179	.858	.455	2.199
CFE_1996	.542	.340	.120	1.595	.113	.483	2.068
CFE_1997	.090	.358	.020	.251	.802	.436	2.291
CFE_1998	.540	.392	.112	1.378	.170	.414	2.417
CFE_1999	.481	.388	.099	1.239	.218	.422	2.368
CFE_2000	.276	.381	.053	.724	.470	.508	1.969
CFE_2001	-.054	.379	-.011	-.142	.887	.443	2.256
CFE_2002	-.791	.409	-.164	-1.934	.055	.380	2.634
CFE_2003	-.677	.406	-.140	-1.667	.098	.385	2.594
CFE_2004	.107	.367	.020	.291	.772	.547	1.829
CFE_2005	-.184	.352	-.038	-.522	.602	.514	1.945
CFE_2006	.446	.316	.104	1.410	.161	.500	2.001
CFE_2007	.373	.378	.087	.989	.325	.350	2.856
CFE_2008	.223	.427	.052	.522	.602	.274	3.650
CFE_2010	.615	.374	.143	1.644	.103	.357	2.801
CFE_2011	.968	.457	.214	2.119	.036	.268	3.735
Ln_S_EMP	-.184	.069	-.477	-2.656	.009	.084	11.865
Lag4_RDT	-.039	.668	-.004	-.058	.954	.675	1.483
Lag4_Advertising	-2.897	2.482	-.092	-1.167	.245	.442	2.264
Lag4_Labor	1.808	.711	.343	2.543	.012	.150	6.682
Lag4_Pension	40.002	28.176	.139	1.420	.158	.282	3.543

a. Dependent Variable: Ln_M_to_B

A.4.8 Quick Service Restaurant Firm Model 8

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.785[a]	.617	.474	.65906	2.568

a. Predictors: (Constant), Lag5_Pension, CFE_1986, Advertising, CFE_1998, FFE_BKW_14, CFE_1988, CFE_1984, FFE_TAST_23, CFE_1985, CFE_1990, CFE_1989, CFE_1981, CFE_1993, CFE_1980, CFE_1983, CFE_1982, CFE_1991, CFE_2002, CFE_2000, CFE_2004, CFE_1992, CFE_1987, CFE_1994, CFE_2001, CFE_1995, CFE_2003, CFE_1997, CFE_1999, CFE_2005, FFE_MCD_18, CFE_1996, Lag5_RDT, CFE_2006, FFE_YUM_25, FFE_QUIZ_22, CFE_2011, CFE_2010, FFE_MRFD_19, CFE_2008, Lag5_Advertising, FFE_GTIM_16, RDT, FFE_PZZA_20, CFE_2007, FFE_JACK_17, ROA, LB, FFE_PZZI_21, Pension, Lag5_Labor, Labor, Ln_S_EMP

b. Dependent Variable: Ln_M_to_B

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.206	52	1.869	4.304	.000[a]
	Residual	60.377	139	.434		
	Total	157.583	191			

a. Predictors: (Constant), Lag5_Pension, CFE_1986, Advertising, CFE_1998, FFE_BKW_14, CFE_1988, CFE_1984, FFE_TAST_23, CFE_1985, CFE_1990, CFE_1989, CFE_1981, CFE_1993, CFE_1980, CFE_1983, CFE_1982, CFE_1991, CFE_2002, CFE_2000, CFE_2004, CFE_1992, CFE_1987, CFE_1994, CFE_2001, CFE_1995, CFE_2003, CFE_1997, CFE_1999, CFE_2005, FFE_MCD_18, CFE_1996, Lag5_RDT, CFE_2006, FFE_YUM_25, FFE_QUIZ_22, CFE_2011, CFE_2010, FFE_MRFD_19, CFE_2008, Lag5_Advertising, FFE_GTIM_16, RDT, FFE_PZZA_20, CFE_2007, FFE_JACK_17, ROA, LB, FFE_PZZI_21, Pension, Lag5_Labor, Labor, Ln_S_EMP

b. Dependent Variable: Ln_M_to_B

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.567	.332		1.710	.090		
	LB	-.416	.749	-.057	-.556	.579	.266	3.766
	RDT	1.151	.533	.166	2.158	.033	.466	2.145
	Advertising	10.300	3.102	.308	3.320	.001	.320	3.125
	Labor	-1.597	.801	-.314	-1.994	.048	.111	8.994
	Pension	-25.549	30.791	-.104	-.830	.408	.174	5.748
	ROA	.346	.693	.043	.500	.618	.369	2.710
	FFE_BKW_14	.461	.404	.081	1.142	.255	.547	1.827
	FFE_GTIM_16	-.098	.350	-.034	-.281	.779	.190	5.264
	FFE_JACK_17	.643	.344	.231	1.870	.064	.181	5.514
	FFE_MCD_18	.896	.242	.359	3.702	.000	.293	3.412
	FFE_MRFD_19	1.314	.288	.462	4.569	.000	.270	3.708
	FFE_PZZA_20	1.010	.299	.333	3.382	.001	.284	3.517
	FFE_PZZI_21	1.447	.362	.509	3.994	.000	.170	5.883
	FFE_QUIZ_22	1.769	.426	.366	4.154	.000	.355	2.817
	FFE_TAST_23	1.012	.465	.139	2.174	.031	.679	1.472
	FFE_YUM_25	2.077	.320	.509	6.483	.000	.446	2.240
	CFE_1980	-.148	.501	-.020	-.295	.769	.586	1.708
	CFE_1981	.068	.504	.009	.135	.893	.580	1.726
	CFE_1982	-.179	.497	-.025	-.360	.719	.595	1.680
	CFE_1983	-.577	.503	-.079	-1.149	.253	.582	1.718
	CFE_1984	-.801	.477	-.110	-1.681	.095	.647	1.545
	CFE_1985	-.683	.515	-.094	-1.326	.187	.554	1.805
	CFE_1986	.291	.519	.040	.562	.575	.547	1.828
	CFE_1987	.044	.498	.008	.088	.930	.360	2.777
	CFE_1988	.215	.517	.034	.417	.678	.415	2.412
	CFE_1989	1.162	.540	.183	2.151	.033	.380	2.631
	CFE_1990	.574	.563	.091	1.020	.309	.350	2.855
	CFE_1991	1.035	.538	.163	1.924	.056	.383	2.608
	CFE_1992	.965	.473	.170	2.040	.043	.399	2.506
	CFE_1993	.380	.395	.067	.962	.338	.573	1.746

CFE_1994	-.036	.374	-.008	-.097	.923	.405	2.468
CFE_1995	.183	.346	.040	.528	.598	.474	2.110
CFE_1996	.518	.342	.114	1.516	.132	.485	2.063
CFE_1997	.347	.344	.077	1.010	.314	.479	2.088
CFE_1998	.706	.398	.146	1.775	.078	.407	2.456
CFE_1999	.622	.392	.129	1.588	.115	.420	2.381
CFE_2000	.286	.383	.055	.746	.457	.510	1.961
CFE_2001	-.027	.387	-.006	-.071	.944	.431	2.322
CFE_2002	-.719	.411	-.149	-1.747	.083	.380	2.629
CFE_2003	-.710	.412	-.147	-1.724	.087	.380	2.631
CFE_2004	.112	.367	.021	.304	.762	.555	1.803
CFE_2005	-.050	.367	-.010	-.135	.893	.479	2.090
CFE_2006	.424	.317	.099	1.336	.184	.503	1.986
CFE_2007	.476	.385	.111	1.235	.219	.342	2.928
CFE_2008	.386	.442	.090	.874	.384	.260	3.850
CFE_2010	.607	.376	.142	1.614	.109	.358	2.796
CFE_2011	.881	.457	.194	1.928	.056	.271	3.688
Ln_S_EMP	-.177	.069	-.459	-2.557	.012	.086	11.676
Lag5_RDT	1.889	1.092	.134	1.730	.086	.458	2.182
Lag5_Advertising	.267	2.469	.009	.108	.914	.438	2.284
Lag5_Labor	.915	.661	.178	1.384	.169	.167	6.006
Lag5_Pension	34.266	28.005	.115	1.224	.223	.310	3.231

a. Dependent Variable: Ln_M_to_B

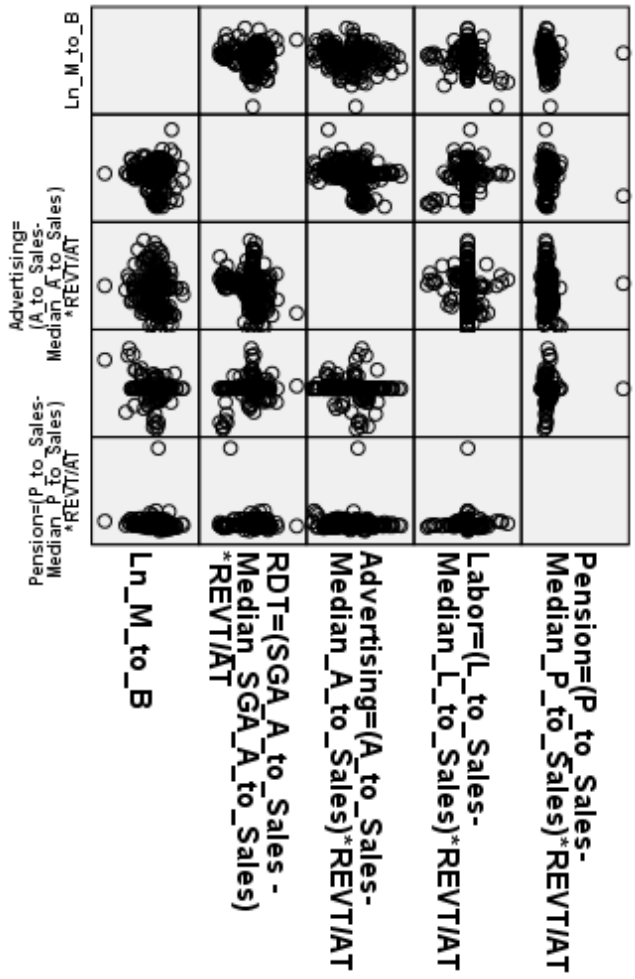
A.5 Assumptions Tests for Multiple Regressions

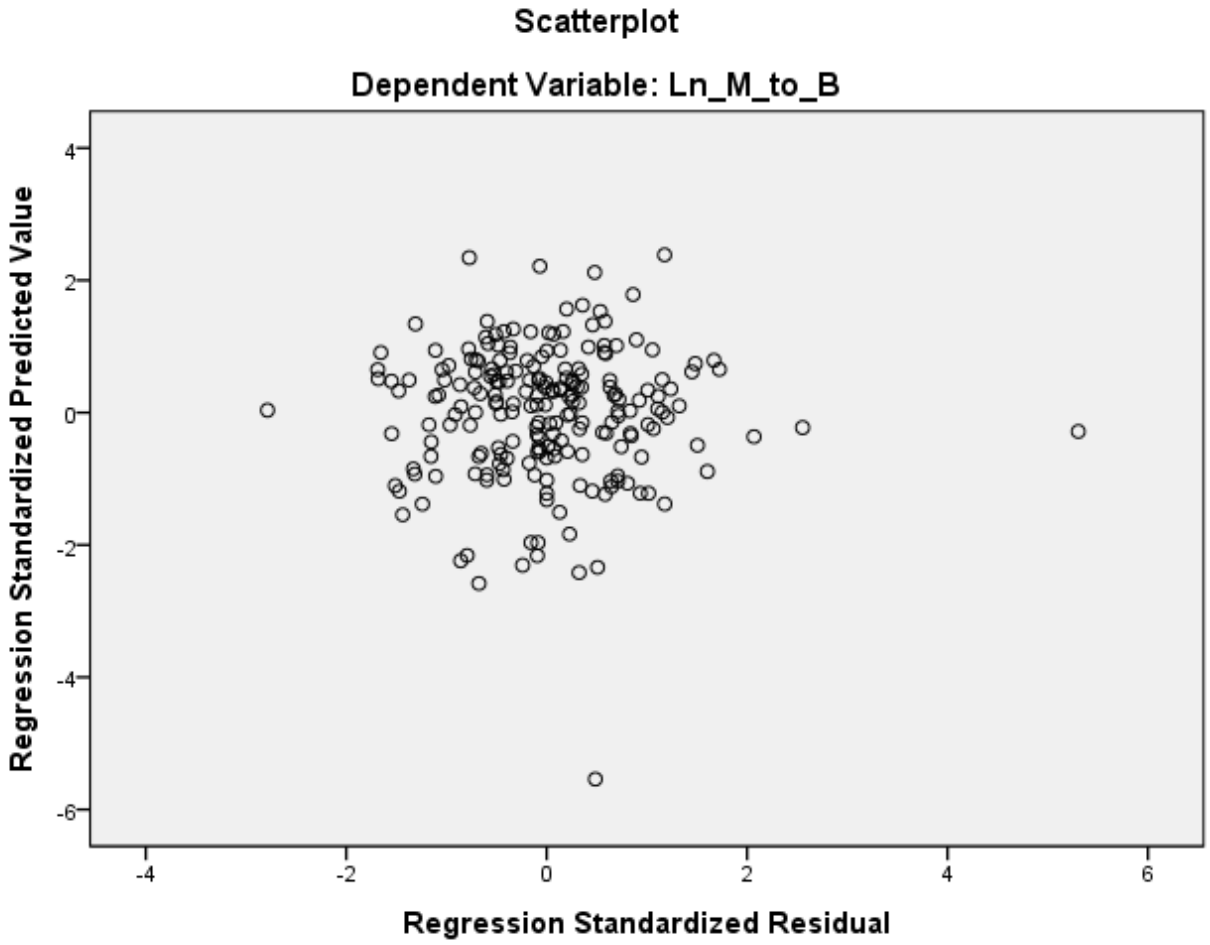
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Market to Book	.059	210	.070	.975	210	.001
LB	.120	210	.000	.948	210	.000
RDT	.174	210	.000	.915	210	.000
Advertising	.065	210	.032	.990	210	.150
Labor	.376	210	.000	.645	210	.000
Pension	.230	210	.000	.391	210	.000
TE	.071	210	.011	.978	210	.003
AT	.061	210	.056	.982	210	.010
REVT	.057	210	.099	.984	210	.019

a. Lilliefors Significance Correction

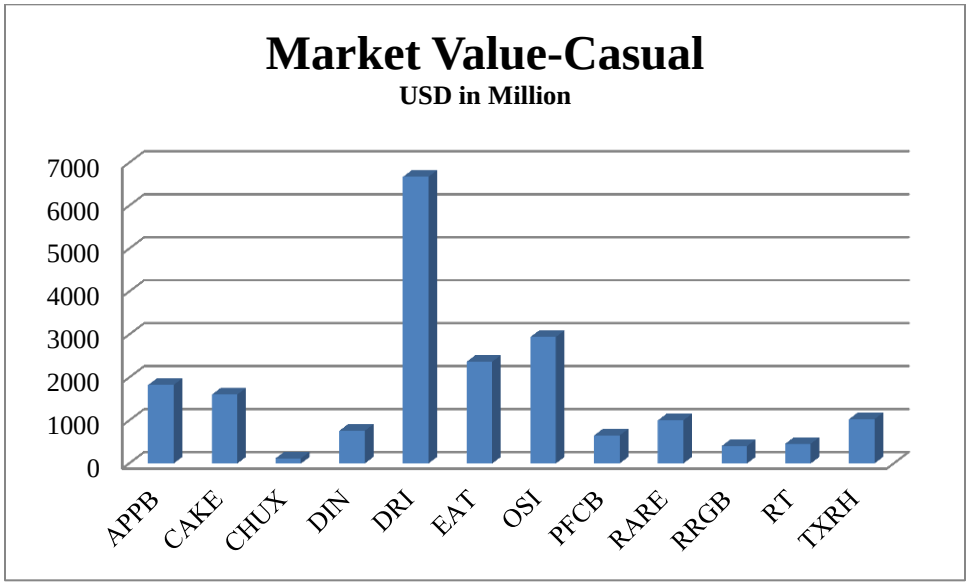
Linearity Test with Scatter Plot

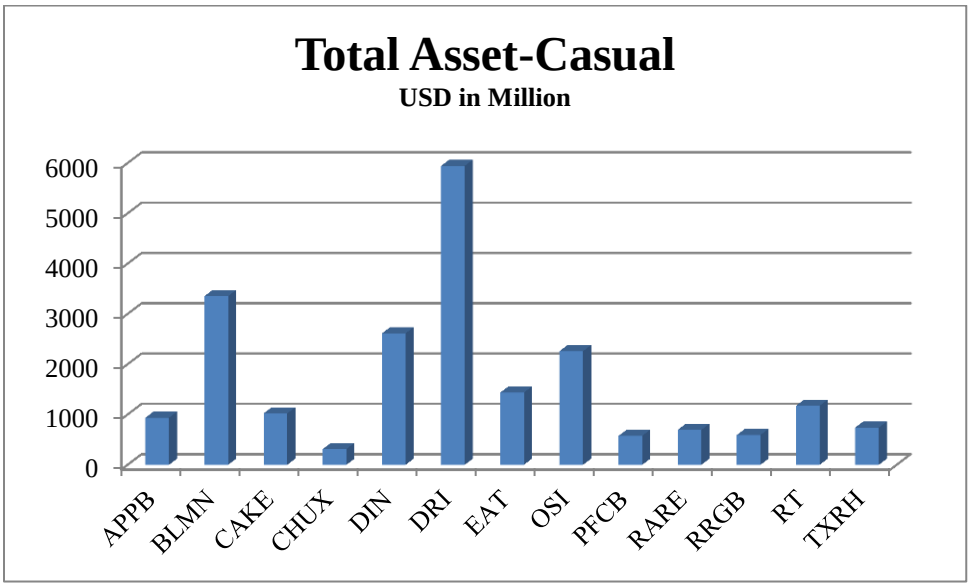


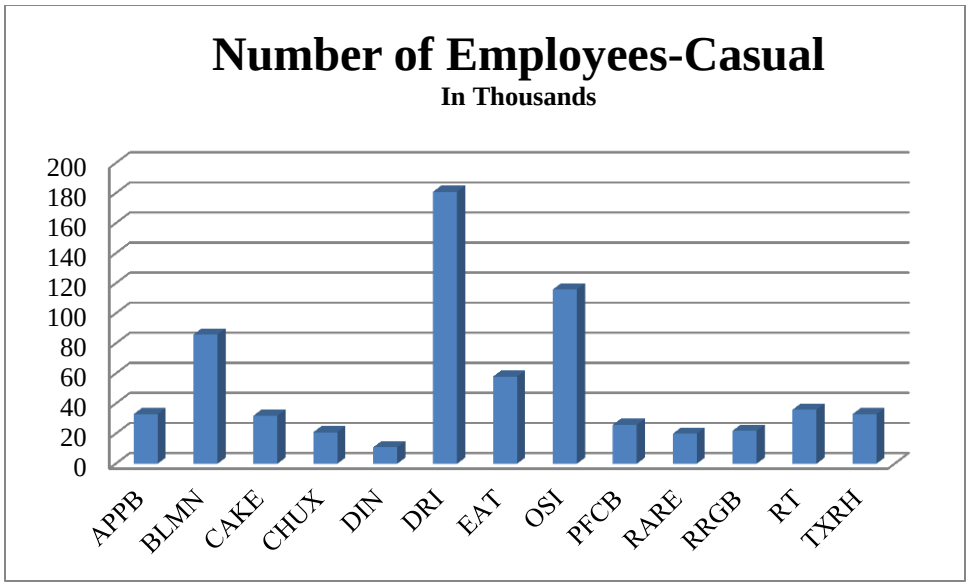

Scatterplot
Dependent Variable: Ln_M_to_B
Regression Standardized Predicted Value
4
2
0
-2
-4
-6
-4
-2
0
2
4
6
Regression Standardized Residual

Appendix B Sample Restaurant Firms

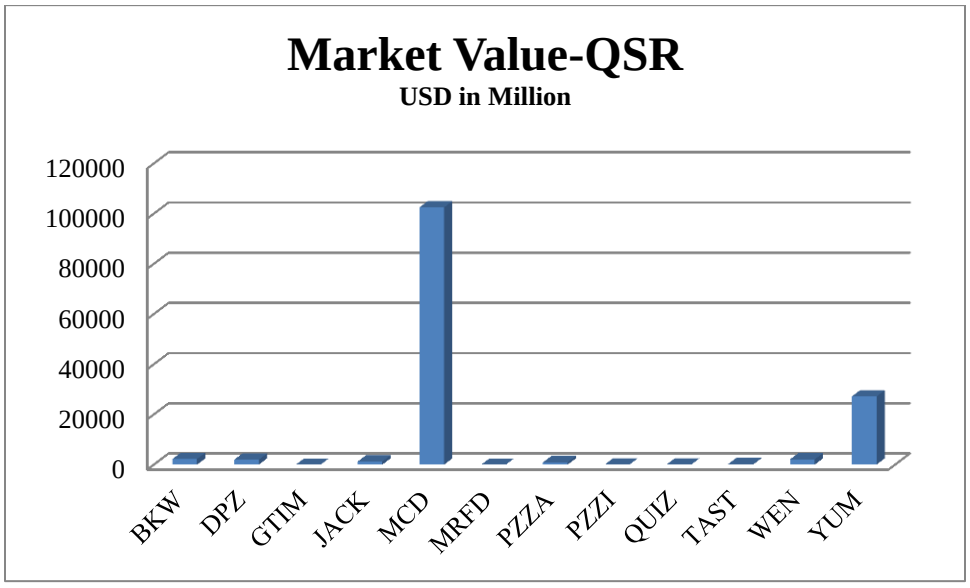
Sample Casual Dining Restaurant Firms

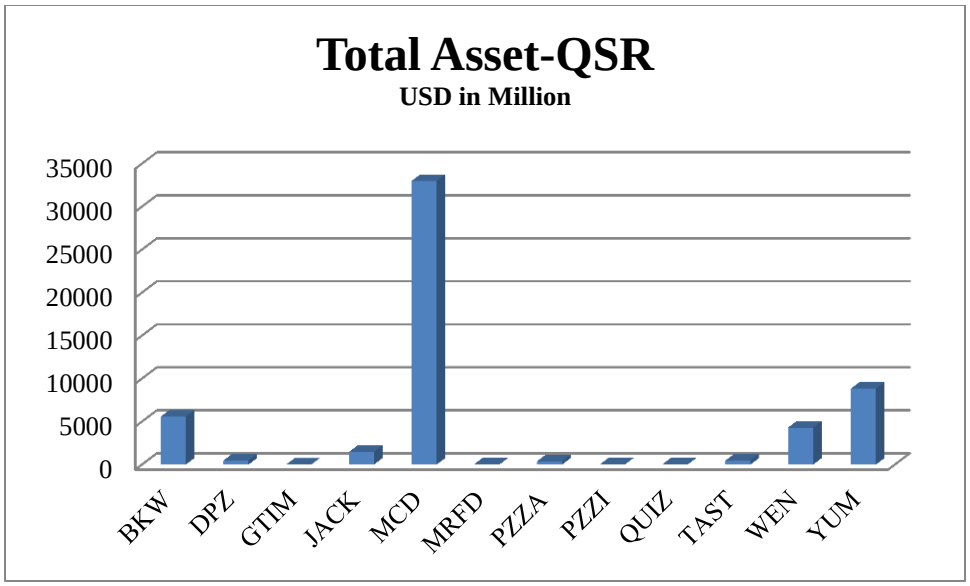


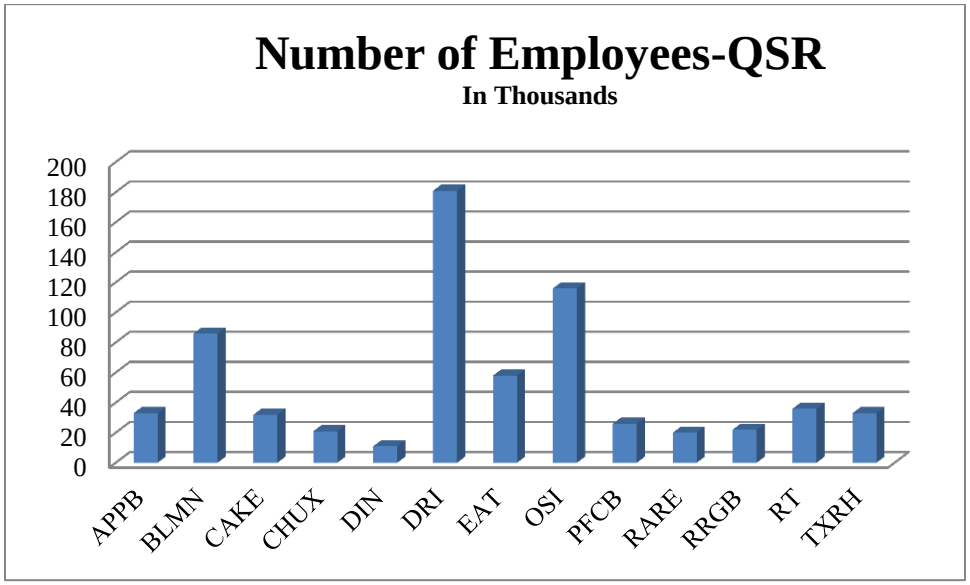




Quick Service Restaurant Firms




Total Asset-QSR
USD in Million
35000
30000
25000
20000
15000
10000
5000
0
BKW
DPZ
GTIM
JACK
MCD
MRFD
PZZA
PZZI
QUIZ
TAST
WEN
YUM


Number of Employees-QSR
In Thousands
200
180
160
140
120
100
80
60
40
20
0
APPB
BLMN
CAKE
CHUX
DIN
DRI
EAT
OSI
PFCB
RARE
RRGB
RT
TXRH