

CORPORATE DIVERSIFICATION AND FIRM VALUE:
EVIDENCE FROM EMERGING MARKETS

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CORPORATE DIVERSIFICATION AND FIRM VALUE:

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Dissertation Abstract

Elif Akben Selçuk, “Corporate Diversification and Firm Value:
Evidence from Emerging Markets”

The objective of this dissertation is to investigate the impact of corporate diversification on firm value in emerging markets. To answer the research question, three analyses are conducted. First, using data from nine countries, namely, Brazil, Chile, Indonesia, Malaysia, Philippines, Poland, South Africa, Thailand, and Turkey for the years 2005-2010, we run a panel data regression. The results show that diversified firms in these countries trade at a premium. Second, in order to analyze the results for Turkish companies more closely, we investigate the moderating role of business group affiliation for the relationship between diversification and value. Using data from 189 Turkish firms for the period between 2005 and 2010, we find that firm level diversification is beneficial only for firms that do not belong to groups. For group members, firm level diversification does not provide an additional advantage. Finally, in order to analyze the diversification-value relationship from a different perspective, we conduct an event study consisting of 100 acquisition announcements made by Turkish companies between 2005 and 2011. The results show higher bidder returns for diversifying acquisitions compared to focused acquisitions. The results of this study are consistent with internal capital markets hypothesis and institution-based theory of diversification.

Keywords: Corporate diversification, firm value, diversification discount and premium, emerging markets, Turkey

Tez Özeti

Elif Akben Selçuk, “Kurumsal Çeşitlendirme ve Firma Değeri:

Yükselen Piyasalardan Bulgular”

Bu tezin amacı, yükselen piyasalarda kurumsal çeşitlendirmenin firma değerine etkisini incelemektir. Bunun için üç ayrı analiz yapılmıştır. İlk olarak, Brezilya, Şili Endonezya, Malezya, Filipinler, Polonya, Güney Afrika, Tayland, ve Türkiye'nin içinde bulunduğu dokuz ülkenin 2005-2010 yıllarına ait verileri kullanılmış ve panel data regresyon analizi yapılmıştır. Analiz sonuçlarına göre çeşitlendirme primi bulgusuna ulaşılmıştır. İkinci olarak, Türkiye'de grupların çeşitlendirme-değer ilişkisindeki rolü incelenmiştir. Bu amaçla 189 Türk firmasının 2005-2010 yıllarına ait verileri kullanılmış ve çeşitlendirmenin sadece grup bünyesinde faaliyet göstermeyen firmalar için faydalı olduğu bulunmuştur. Grup şirketleri için firma bazında çeşitlendirmenin ek bir fayda sağlamadığı görülmektedir. Son olarak, çeşitlendirme-değer ilişkine başka bir açıdan yaklaşılmış ve Türk firmaları tarafından 2005-2011 yılları arasında gerçekleştirilen 100 şirket satın alma duyurusu olay çalışması metoduyla incelenmiştir. Sonuçlar satın alan şirketlerin olağandışı getirilerinin çeşitlendirici satın almalarda daha yüksek olduğunu göstermektedir. Bu çalışmanın sonuçları iç sermaye pazarı hipotezi ve kurum tabanlı çeşitlendirme teorisi ile uyumludur.

Anahtar kelimeler: Kurumsal çeşitlendirme, firma değeri, çeşitlendirme iskontosu ve primi, yükselen piyasalar, Türkiye

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ABBREVIATIONS

AR	Abnormal Return
BITS	Business Information Tracking Series
CAR	Cumulative Abnormal Return
EBIT	Earnings before Interest and Taxes
EMIS	Emerging Markets Information Service
GMM	Generalized Method of Moments
ISE	Istanbul Stock Exchange
M&A	Merger and Acquisition
MTB	Market-to-Book Ratio
NPV	Net Present Value
OPRA	Operating Return on Assets
OLS	Ordinary Least Squares
P/E	Price-to-Earnings Ratio
R&D	Research and Development
ROA	Return on Assets
S&P	Standard and Poor's
SIC	Standard Industrial Classification
UK	United Kingdom
US	United States

CHAPTER 1

INTRODUCTION

Diversification plays an important role not only in the personal investment field but also in corporate strategy. In modern portfolio theory, diversification refers to the spreading of risk by combining different asset classes and securities into a single portfolio. This allows the poor returns to some assets to be offset by higher returns to others. As a result, total variance is decreased but returns are unaffected. Unlike the diversification of investment portfolios, with well-documented benefits, the benefits of corporate diversification are not as obvious.

Corporate diversification, in its broadest sense, can be defined as the entry of an existing company into a new business activity involving new products and markets (Brost & Kleiner, 1995). In the remainder of this dissertation, a firm is considered diversified when it is operating in two or more lines of businesses or industry segments as classified by the Standard Industrial Code (SIC).

Diversification can be both related (usually defined at the four-digit SIC code level) or unrelated (usually defined at the two-digit SIC code level). The emphasis on this research is on unrelated diversification.

The objective of the present study is to investigate the impact of corporate diversification on firm value in a sample of emerging markets by comparing market values of diversified companies to their single-segment benchmarks. Another objective is to shed further light on the diversification-value relationship for Turkish firms by investigating the moderating role of industrial group membership. Finally,

in order to offer a different perspective on the impact of diversification on value for Turkish firms, an event study will be conducted and returns to acquirers involved in diversifying acquisitions will be investigated.

Diversification-value relationship is of interest to business researchers for studying the more general problem of determining firm boundaries. A more pragmatic reason for studying corporate diversification is that corporate managers face decisions about diversifying and refocusing their firms. Empirical data about how such decisions worked in the past may be useful in strategic planning. Estimates of the costs and benefits of corporate diversification might also be useful to investors and to regulators.

While diversification continues to be a growth strategy for firms, little consensus exists on the relationship between diversification and firm value. This observation points out that this research area has not yet reached maturity. A research domain is considered mature if a large number of empirical studies have been conducted and if these studies have produced reasonably consistent and interpretable results. The diversification-value literature fails to satisfy the second criterion. Despite the substantial number of studies on the subject, no theoretical or empirical agreement exists among researchers (Palich, Cardinal, & Miller, 2000).

The consensus among finance scholars during the early 1990s was that, on average, diversified firms trade at a discount. In recent years, however, a number of researchers have abandoned this view. One way to understand the disagreement is by asking what is really meant when we say that diversified firms trade a discount. Villalonga (2003) talks about three different types of discount and labels them like the three forms of market efficiency: weak, semi strong and strong. The weak form discount is the idea that diversified firms trade at a discount relative to single-

segment firms operating in the same industries. This is the main result of Lang and Stulz (1994) and Berger and Ofek (1995), which gave rise to the large finance literature about corporate diversification. Semi strong form discount refers to the fact that diversified firms trade at a discount compared to what they would be worth if they were divided into parts. This view is supported by evidence that refocusing spin-offs and divestitures increase company value (eg. Comment & Jarrell, 1995; John & Ofek, 1995). Strong form discount means that diversified firms are valued lower compared to what they would be worth if they had never diversified. A strong form discount implies that diversified firms destroyed value by diversifying in the first place. On the other hand, a semi strong form discount implies that diversified firms are destroying value by staying diversified. Hence, it is possible that diversification might have been value-increasing for those same firms at some earlier time.

The results of this study are expected to be significant since the effect of diversification on company value in emerging markets is an important managerial and public policy concern. The diversification trend which dominated strategies in the developed countries during the period 1950-1980 has been replaced by a trend of refocusing. However, the business environment in emerging economies continues to be dominated by large conglomerates which may account for up to eighty percent of the total sales and asset base of the private sector in some countries (Purkayastha, Manolova, & Edelman, 2012). Although the literature on developed country diversified firms is rich, only a few studies have examined diversification-value relationship in the context of developing countries. To date, most recommendations to developing country firms were based on experience and knowledge gained in the developed world, and these may not be appropriate for emerging country firms

(Khanna & Palepu, 1997; Khanna & Rivkin, 2001). Hence, there is an important need to understand the diversification-value relationship in the context of emerging markets, in order to propose appropriate strategic advice.

Furthermore, with some exceptions, most previous research on the value effects of corporate diversification in emerging markets has taken the form of detailed case studies within countries or between pairs of countries. Hence, the present study is significant in the sense that it is expected this contribute to this body of research by extending evidence for the diversification-value link across a sample of emerging market firms.

In addition, most empirical studies on emerging markets concentrate on the 1990s. However, many new corporate reforms have taken place all over the world since then. Hence, it is important to find out whether the conglomerates trade at a discount or a premium in the 2000s.

Finally, to the best of our knowledge, this will be the first study to investigate the value impact of corporate diversification for Turkish firms. Some cross country studies included Turkey but the sample size in these studies was limited and country level results were not reported. There also exist a few studies analyzing the impact of industrial group membership on the performance of Turkish companies, but there are no studies focusing on firm level diversification or the moderating role of group membership. Finally, even though some prior studies analyzed abnormal returns for Turkish acquirer companies involved in acquisitions, no distinction was made between diversifying and focused acquisitions.

The remainder of the dissertation is organized as follows. Chapter Two synthesizes the literature on the motives, benefits, and costs of diversification, and reviews empirical evidence. Chapter Three contains a cross sectional analysis of

conglomerate firms compared to single-segment benchmarks in order to investigate the impact of diversification on firm value in a sample of emerging markets.

Chapters Four and Five focus exclusively on Turkish companies: In Chapter Four, the moderating role of industrial group membership for the diversification-value relationship in Turkish firms is investigated while Chapter Five presents an event study analyzing the impact of diversifying acquisitions on acquirer returns for Turkey. Chapter Six discusses the implications of the results. Finally, Chapter Seven provides a summary of the findings and concludes with the limitations of the study and suggestions for further research.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a survey of previous literature about the impact of diversification on firm value focusing on studies that have been most influential for finance research. In the following sections, the theories on costs and benefits of diversification are discussed first, followed by empirical studies about diversification-value relationship.

Overview of Main Theories

In perfect capital markets under Modigliani-Miller assumptions, diversification should be irrelevant to firm value. If stockholders wish to reduce unsystematic risk, they can diversify within their own portfolio directly (Erdorf, Wendels, Heinrichs, & Matz, 2011). However, many firms operate in more than one industry. In finance literature, numerous theories on benefits and costs associated with diversification have been developed. In particular, the benefits of corporate diversification, which give rise to diversification premium, can originate from the theories of an efficient internal capital market, coinsurance effect, economies of scope, and market power. On the other hand, the costs arising from corporate diversification, which give rise to diversification discount, are theoretically justified by agency arguments, overinvestment and cross-subsidization problem, and inefficient resource allocation within the firm (Day & Benerjee, 2011; Maksimovic & Phillips, 2007; Martin &

Sayrak, 2003). These benefits and costs are summarized in Table 1 below and then discussed in more detail.

Table 1. Benefits and Costs of Diversification

Benefits	
Authors	Argument
Stein (1997) Williamson (1975)	Internal capital markets: Diversification allows companies to bypass external capital markets which are more costly and inefficient compared to internal capital markets.
Bhide (1990) Lewellen (1971) Shleifer & Vishny (1992)	Coinsurance effect: Combination of businesses with imperfectly correlated earnings creates a coinsurance effect which leads to greater debt capacity.
Majd & Myers (1987)	Tax advantage: Diversification creates a tax advantage by allowing the losses of some segments to be offset by the profits of others.
Teece (1980, 1982)	Economies of scope: Diversified companies can share resources among divisions, which reduces unit cost.
Scherer (1980) Saloner (1987) Villalonga (2000)	Market power: Diversified firms have access to tools that increase their market power (predatory pricing, collusion, reciprocal buying).
Costs	
Amihud & Lev (1981) Jensen (1986) Jensen & Murphy (1990) Shleifer & Vishny (1989)	Agency costs: Managers may maintain a diversification strategy because it serves their own benefits (prestige, compensation, lower personal risk, job security) even if doing so reduces shareholder wealth.
Aron (1988) Jensen (1986) Rotemberg & Saloner (1994)	Overinvestment problem: Diversified firms are more likely to undertake negative NPV investments because segments have more access to free cash flows.
Meyer, Milgrom, & Roberts (1992)	Cross-subsidization problem: Diversified companies can cross subsidize unprofitable lines of business with revenues from other segments.
Harris, Kriebel, & Raviv (1992) Wulf (1998)	Inefficient allocation of capital: Managers of some divisions may have the incentive to use their power and private information to skew capital budgeting in their favor.

Benefits of Diversification

Internal Capital Market

Diversification allows firms to bypass external capital markets which are often imperfect and costly, in favor of an internal capital market where divisions with high cash flows but limited investment opportunities can finance divisions with low cash flows but promising investment opportunities. Williamson's (1975) work, which is further developed by Stein (1997), is at the root of this hypothesis. Having an internal market to fund the firm's needs for capital offers a number of possible sources of value to the firm's owners. First of all, internally raised equity capital is less costly than funds raised in the external capital market. Internal capital markets also allow the firm to avoid transaction costs associated with the sale of securities to the public, as well as the costs of overcoming information asymmetry problems encountered when selling securities in the capital market. Furthermore, with an internal source of financing, the firm's managers can exercise superior decision control over project selection, rather than leaving the firm's investment decisions to less well-informed investors in the external capital market.

Coinsurance Effect

The coinsurance effect derived from combining businesses with imperfectly correlated earnings reduces firms' unsystematic risk and thus increases value. Specifically, Lewellen (1971) argues that the reduction in variance of future cash flows resulting from diversification serves to increase the diversified firm's debt

capacity since creditors have greater confidence in the total cash flow of all the divisions of a multidivisional firm compared to a focused firm. Greater debt capacity in turn leads to higher firm value. More recently, Shleifer and Vishny (1992) have also argued that conglomerates may have a higher debt capacity because in bad states of the world they can sell assets in those industries that suffer the least from liquidity problems. Similarly, diversification may create value since the dealings of customers, suppliers, lenders and tax authorities with the diversified firm are affected by the aggregated earnings of divisions (Bhide, 1990). For instance, diversified firms are predicted to have higher leverage and thus lower tax payments. Similarly, the risks faced by suppliers in collecting accounts receivable or employees in keeping their jobs is affected by the combined firm's operating results and may be quite different than would be the case for an independent business unit.

Higher debt capacity constitutes another advantage for diversified firms by reducing tax burden. Diversification further decreases tax liability by allowing profits of some segments to be offset by losses of others (Majd & Myers, 1987).

Resource Based Theory

This theory argues that diversified firms can reap the benefits of economies of scope owing to their organizational form and thus increase value (Teece, 1980, 1982). For instance, firms can transfer similar knowhow across divisions. In addition, assets which can be used to produce many related end products can be used more efficiently if they are owned by a single company. Also, companies may use the same marketing and distribution channel to market a variety of goods or services.

Similarly, firms may be able to utilize their corporate legal and financial staffs to support a variety of different industries.

Market Power

Villalonga's (2000) study (as cited by Villalonga, 2004b), argues that diversified firms can create and exploit market power advantages by using a number of anticompetitive tools that are largely unavailable to focused companies. Her study offers three different anticompetitive motives for diversification. The first uses the profits generated by the firm in one industry to support predatory pricing in another in order to drive existing rivals out of the market or discourage potential rivals from future entry (Saloner, 1987; Scherer, 1980). The second motive involves colluding with other firms that compete with the firm simultaneously in multiple markets. The final reason is that firms often diversify to engage in reciprocal buying with other large firms in order to drive small competitors out of business. This tactic emerges when a diversified company establishes favorable reciprocal arrangements with firms that are simultaneously suppliers and customers. The focal company gives preference in purchasing decisions or contracting requirements to suppliers that are, or are willing to become, good customers (Scherer, 1980). Greater diversification yields increased opportunity for such reciprocity.

Costs of Diversification

Agency Costs

The agency theory views diversification as an activity managers often undertake to increase their own welfare at the expense of shareholders. Diversification may benefit managers because of the power and prestige associated with managing a larger firm (Jensen, 1986), because managerial compensation is related to firm size (Jensen & Murphy, 1990), or because diversification reduces the risk of managers' undiversified personal portfolios (Amihud & Lev, 1981). In a similar vein, Shleifer and Vishny (1989) suggest that managers have a tendency to "entrench" themselves i.e. they diversify because they are better at managing assets in certain industries and diversifying into those industries will make their skills so indispensable to the firm that it becomes very costly to replace them. As a result of these factors, managers may maintain a diversification strategy even if doing so reduces shareholder wealth.

Overinvestment and Cross-Subsidization Problem

Another cost of diversification is related to overinvestment problem and internal capital markets. If managers have a general tendency to overinvest, then access to an internal market for capital in a diversified firm simply provides a greater opportunity to overinvest in negative NPV projects (Jensen, 1986). Similarly, conglomerates can provide cross subsidies to unprofitable lines of business (Meyer, Milgrom, & Roberts, 1992). Furthermore, being diversified may make it more difficult to resolve these problems using equity participation. The power of stock options and grants is

diminished in the diversified firm, as the value of the diversified firm's equity reflects the combined performance of its business units, and divisional managers only have direct influence over their own business unit's performance (Aron, 1988; Rotemberg & Saloner, 1994).

Inefficient Allocation of Capital among Divisions

Inefficiency problem in diversified firms could be a result of the information asymmetry problems between the firm's central management and the management of the operating divisions. According to Harris, Kriebel, and Raviv (1992) there are two aspects of diversified companies which make the problem of allocating resources a difficult one. First, in most firms, various tasks are performed or managed by divisional managers with special information or expertise concerning their particular area. Usually this information is not available to other individuals within the firm including top management. Second, divisional managers may have interests which may diverge from those of the firm and therefore may be unwilling to reveal their privileged information freely to top management. For instance, divisional managers may tend to overstate the resource requirements of their divisions since these resources can be converted to their personal benefit. Also, managers of large, established divisions can use their influence and power to skew capital budgeting in their favor at the detriment of smaller divisions under the supervision of managers with limited tenure (Wulf, 1998). As a result, some divisions may end up getting more funds or internal capital than is optimal, which is value destroying.

Empirical Evidence

As it becomes clear from the preceding discussion, there are both benefits and costs to diversification, with the average net effect being largely an empirical question. The answer to this question depends on the time period, geographic location, data, and statistical methods used for estimation (Kuppuswamy & Villalonga, 2010).

To determine the average value of diversification, the standard methodological approach is to conduct a cross sectional analysis directly determining the value of diversified firms relative to comparable single-segment firms. A second approach involves event studies showing how the stock market reacts to divestitures and acquisitions. Finally, there are studies on the investment efficiency of internal capital markets and productivity in diversified firms (Erdorf et al., 2011; Villalonga, 2004a).

The main findings of the empirical studies on diversification are first summarized on Table 2 and then discussed in more detail.

Table 2. Empirical Studies on Diversification

<i>Author(s)</i>	<i>Period</i>	<i>Countries</i>	<i>Result</i>	<i>Methodology</i>
Wernerfelt & Montgomery (1988)	1976	USA	Discount	Cross sectional
Lang & Stulz (1994)	1978-1990	USA	Discount	Cross sectional
Berger & Ofek (1995)	1986-1991	USA	Discount	Cross sectional
Servaes (1996)	1961-1976	USA	Discount for the 1960s, no discount for the 1970s	Cross sectional
Denis, Denis, & Sarin (1997)	1984	USA	Discount	Cross sectional
Anderson, Bates, Bizjak, & Lemmon (2000)	1985-1994	USA	Discount	Cross sectional
Campa & Kedia (2002)	1978-1996	USA	Discount initially and premium later	Cross sectional
Villalonga (2004a)	1978-1997	USA	No discount or premium	Cross sectional
Mansi & Reeb (2002)	1988-1999	USA	Discount initially but it vanishes later	Cross sectional
Whited (2001)	1992-1998	USA	No discount or premium	Cross sectional
Miller (2006)	1990	USA	No discount or premium	Cross sectional
Villalonga (2004b)	1989-1996	USA	Premium	Cross sectional
He (2009)	1992-1997, 1998-2004	USA	Discount using pre-1997 data, premium using post-1997 data	Cross sectional
Lins & Servaes (1999)	1994 and 1996	UK, Japan, Germany	No discount or premium in Germany, discount in Japan and UK	Cross sectional
Fleming, Oliver, & Skourakis (2003)	1988-1998	Australia	Discount initially but it vanishes later	Cross sectional
Li & Wong (2003)	1996	China	Premium	Cross sectional
Yiu, Bruton, & Lu (2005)	1998	China	Premium	Cross sectional
Ramaswamy, Li, & Pettit (2004)	1993-1994	India	Premium	Cross sectional
Khanna & Palepu (2000a)	1993	India	Premium	Cross sectional
Singh, Nejadmalayeri, & Mathur (2007)	1998-2000	India	Discount	Cross sectional

Table 2. Empirical Studies on Diversification (continued)

<i>Author(s)</i>	<i>Period</i>	<i>Countries</i>	<i>Result</i>	<i>Methodology</i>
Khanna & Palepu (2000b)	1988-1996	Chile	Premium	Cross sectional
Lee, Pend, & Lee (2008)	1984-1996	South Korea	Premium	Cross sectional
Lins & Servaes (2002)	1995	7 East Asian Countries	Discount	Cross sectional
Khanna & Rivkin (2001)	1990-1997	14 emerging markets	Premium	Cross sectional
Nachum (2004)	1997	22 developing countries	Premium	Cross sectional
Fauver, Houston, & Naranjo (2003)	1991-1995	35 developed and developing countries	Discount in developed countries, premium in developing countries	Cross sectional
Claessens, Djankov, Fan, & Lang (2001)	1998	USA, Japan and 8 emerging markets	Discount in developed countries, premium in developing countries	Cross sectional
Gündüz & Tatoğlu (2003)	2001	Turkey	No effect of group affiliation on accounting and stock performance	Cross sectional
Gönenç, Kan, & Karadağlı (2007)	2000	Turkey	Positive effect of group affiliation on accounting performance, no effect on stock performance	Cross sectional
Morck, Shleifer, & Vishny (1990)	1975-1987	USA	Discount	Event study
Agrawal, Jaffe, & Mandelker (1992)	1955-1987	USA	Discount	Event study
Morgan, Nail, & Megginson (2000)	1977-1996	USA	Discount	Event study
Dos Santos, Errunza, & Miller (2008)	1990-1999	USA	Discount	Event study
Comment & Jarrell (1995)	1978-1989	USA	Discount	Event study
John & Ofek (1995)	1977-1990	USA	Discount	Event study
Daley, Mehrotra, & Sivakumar (1997)	1975-1994	USA	Discount	Event study
Desai & Jain (1999)	1975-1991	USA	Discount	Event study

Table 2. Empirical Studies on Diversification (continued)

<i>Author(s)</i>	<i>Period</i>	<i>Countries</i>	<i>Result</i>	<i>Methodology</i>
Sicherman & Pettway (1987)	1985	USA	Discount	Event study
Graham, Lemmon, & Wolf (2002)	1980-1995	USA	No discount or premium	Event study
Walker (2000)	1980-1996	USA	No discount or premium	Event study
Kaplan & Weisbach (1992)	1971-1982	USA	Premium	Event study
Schipper & Thompson (1983)	1967-1970	USA	Premium	Event study
Hubbard & Palia (1999)	1961-1970	USA	Premium	Event study
Matsusaka (1993)	1968-1974	USA	Premium	Event study
Hyland & Diltz (2002)	1978-1992	USA	Premium	Event study
Chevalier (1999)	1980-1995	USA	Premium	Event study
Sudarsanam, Holl, & Salami (1996)	1980-1990	UK	No discount or premium	Event study
Martynova & Renneboog (2012)	1993-2001	28 European countries	Premium	Event study
Cai (2004)	1993-2003	8 East Asian Countries	No discount or premium	Event study
Bhagat et al. (2008)	1991-2008	8 emerging markets	Premium	Event study
Mandacı (2004)	1998-2003	Turkey	Positive abnormal returns to acquirers	Event study
Oelger & Schiereck (2011)	1992-2010	Turkey	Positive abnormal returns to acquirers	Event study
Lichtenberg (1992)	1985-1989	USA	Discount	Productivity study
Lamont (1997)	1986	USA	Discount	Productivity study
Maksimovic & Phillips (2002)	1975-1992	USA	Discount	Productivity study
Schoar (2002)	1977, 1982, 1992, 1997	USA	Premium	Productivity study
Shin & Stulz (1998)	1977-1986	USA	Discount	Productivity study

Cross Sectional Studies

Cross sectional studies constitute the largest of the three groups. These studies analyze the value differences between diversified and non-diversified firms in a regression framework. Different measures of diversification, as well as various control variables which are likely to affect company value, are included in the models as explanatory variables.

The majority of the cross sectional studies on the value effects of corporate diversification have been conducted for developed economies and the majority of these developed country studies, especially the earlier ones, concluded that diversification destroys value. In other words, diversified firms were found to trade at an average discount relative to a portfolio of single-segment firms, which has come to be known as “the diversification discount” (Martin & Sayrak, 2003).

In one of the first papers on diversification discount, Wernerfelt and Montgomery (1988) estimated the effects of diversification, industry structure, and market share in determining the performance of US firms. They found that diversification has a negative impact on firm value, as measured by Tobin’s q . Narrowly diversified firms, presumably built around more specialized assets, were found to earn higher levels of profit than do widely diversified firms. They measured diversification by the concentric index of Caves, Porter, and Spence (1980) which captures the degree of relatedness between the industries in which the firm operates. Their database comprised 247 firms for the year 1976.

In finance literature, the seminal papers on diversification discount are Lang and Stulz (1994) and Berger and Ofek (1995). Preceding work on conglomerates had compared ex-post performance of diversified firms to the performance of single

segment firms. By contrast, Lang and Stulz (1994) and Berger and Ofek (1995) decomposed diversified firms into their industry segments and then valued these segments using benchmark companies. This methodology was later used in many papers and is therefore worth examining in some detail.

Lang and Stulz (1994) found that diversified firms trade at lower Tobin's q than comparable single-segment firms over the period 1978 to 1990. To obtain comparables, the authors calculated mean and median Tobin's q of single-segment firms operating in the same three-digit SIC code for every segment of a diversified company. Tobin's q is defined as the total market value of the firm divided by the replacement value of the firm's assets. The conglomerate's comparable q is then found by the weighted average of the divisional q s. The conglomerate discount is defined to be the difference between a conglomerate's actual Tobin's q and its comparable q .

Lang and Stulz (1994) used two measures of diversification. As their principal measure, they used the number of the business segments that each firm reports. They also computed two Herfindahl indices of diversification: an index computed from segment sales data and a second index computed from data on assets per segment. Lang and Stulz's main statistical tests consisted of annual cross-sectional regressions for the period 1978 to 1990. They regressed the difference between firms' actual Tobin's q and hypothetical Tobin's q on a constant, diversification variables and control variables. In these regressions, Lang and Stulz (1994) consistently found that the coefficient of the diversification variable is negative and significant, meaning that a two-segment firm sells at a discount relative to single-segment firms. There is less evidence that there exists a marginal effect of diversification for a larger number of segments. Lang and Stulz (1994) also showed

that the discount remains significant even after controlling for firm size, R&D, and access to financial markets.

Berger and Ofek (1995) were able to confirm the results of Lang and Stulz (1994) using a slightly different methodology. They found that diversified firms trade on average at a thirteen percent to fifteen percent discount relative to single-segment firms during the period 1986 to 1991. In their paper, the authors used assets, sales or earnings multiples instead of Tobin's q . The natural logarithm of the ratio of the actual value of a firm to its imputed value is called "excess value" and is used to analyze whether diversified firms trade at a discount or premium. The imputed value is obtained by multiplying the reported accounting value (assets, sales, or EBIT) for each segment by the median ratio for single-segment firms in the same industry.

To provide additional evidence for the relationship between firm value and diversification, the excess value measure is used as the dependent variable in a regression model that includes a dummy variable for diversification whose regression coefficient gives the percentage difference in average excess value between diversified and single-segment firms. Various control variables are also included, specifically firm size, profitability, and growth. As hypothesized, there is an average value loss from diversification.

This regression is then extended to see how relatedness of the diversification and year influences the regression results. Firm segments are considered unrelated if they have different SIC codes at the two-digit level and related when they differ at the four-digit level. For related diversification, the value loss is found to be much less. Also, the results vary between time periods.

Berger and Ofek (1995) also examined the profitability of diversified versus single-segment firms and found that profitability (measured by EBIT divided by

sales and EBIT divided by assets) is lower for diversified firms. They also found evidence that conglomerate firms invest more in low- q industries. Thus, overinvestment in low- q industries by conglomerate firms contributes to the discount. Finally, the authors found that having a negative cash flow division lowers the value of a conglomerate. They interpreted this loss in value as arising from the subsidization of poorly performing segments.

Later on, Servaes (1996) studied data for US firms covering the period from 1961 to 1976 and documented a large diversification discount during the 1960s, but this discount declined to zero during the 1970s. Insider ownership was found to be negatively related to diversification during the 1960s, but when the diversification discount declined in 1970s, firms with high insider ownership were the first to diversify.

Denis, Denis, and Sarin (1997) and Anderson, Bates, Bizjak, and Lemmon (2000) were also able to confirm evidence of a value loss from diversification for US firms.

A second group of studies questioned the previous evidence that diversification destroys value. The findings of these studies suggest that diversification, in itself, does not destroy value. But, they argue that factors different from diversification are responsible for the documented diversification discount. Once these factors are controlled for, the diversification discount may decrease or disappear.

Within this strand of literature, Campa and Kedia (2002) argued that, several studies fail to control for firm effects that lead to diversification and therefore report a diversification discount when it is actually caused by other underlying characteristics. They found that conglomerate firms differ from single segment firms

in terms of their size, capital expenditures/sales, EBIT/sales, industry growth rate, and R&D/sales. They also found that the conglomerate firms sold at a discount prior to implementing their diversification strategy. Controlling for these differences, the authors noted that the diversification discount either decreases or disappears entirely. This conclusion was reached by using instrumental variables to control for exogenous characteristics that affect the decision to diversify.

Similarly, Villalonga (2004a) argued that conglomerates are different prior to beginning their diversification program, and thus research documenting a diversification discount suffers from sample selection bias. Her study caused the diversification discount to disappear when econometric methods of casual inference are used. The author used three different techniques from previous literature including fixed-effects estimator, simultaneous-equation estimation with instrumental variables, and Heckman's two-stage method to control for the endogeneity of the diversification decision. All three methods indicated that diversification does not reduce firm value. In other words, it is not causally related to the discount.

In another study, Mansi and Reeb (2002) found that measures of firm value based on book values of debt instead of market values systematically undervalue diversified firms relative to single-segment firms. Their data included 2,856 firms from 1988 to 1999. Using a contingent claim framework and controlling for risk effects, the authors found that diversification is not associated with reductions in overall firm value. Their results imply that diversification does not destroy value, but rather results in a wealth transfer from shareholders to bondholders. The authors' hypothesis is supported by the following three results: equity holder losses in diversification are related to firm leverage, all-equity firms do not exhibit a

diversification discount, and using book value of debt in the calculation of excess value creates bias.

The studies in the second group do not contest the finding that diversified firms sell at a discount. Instead, they argue that the discount is not due to diversification itself but is a result of the given firm selling at a discount prior to diversifying. There is also a third group of studies which question the existence of the diversification discount phenomenon itself. These studies argue that there is no diversification discount and in fact diversified firms may even trade at a significant premium. Differences in these and previous results are attributed to the possibility of measurement errors in prior research.

For instance, Miller (2006) addressed several of these concerns about methodology and measured diversification by creating a measure of technological diversity based on citation-weighted patents. Since this measure is defined for both single-business and diversified firms, and is not correlated with more fundamental aspects of diversification, endogeneity is not a problem. Analysis results showed a positive relationship between diversification based on technological diversity and market-based measures of performance. The results hold when other factors including R&D intensity and capital intensity are controlled for or when controlling for unobserved factors using panel data.

In another study, Whited (2001) caused the discount to disappear by employing a measurement-error consistent estimator of Tobin's q which uses the information contained in the third and higher moments of the joint distribution of the observed regression variables. Generalized Method of Moments (GMM) estimation results showed that diversified firms are not significantly different from single

segment firms. The author concluded that the results in the previous literature appear to be artifacts of measurement error.

Villalonga (2004b) hypothesized that the diversification discount could be due to the inappropriateness of the segment data from Compustat that is used to measure it in most previous studies. She used Business Information Tracking Series (BITS) data for the whole US economy from 1989 to 1996, which allows for construction of business units that are more comparable across firms. This data indicated a diversification premium that is robust to variations in measures of excess value and diversification.

Finally, He (2009) argued the diversification discount documented in earlier studies can be an artifact of the pre-1997 data or a failure to control for endogeneity. Using measures of diversification based on the diversity in segment-industry characteristics and controlling for endogeneity of the diversification decision, the author documented a diversification premium in the post-1997 period. He found significant positive effects of cash flow diversity, leverage diversity and profitability diversity on excess value, consistent with the efficient internal capital market hypothesis. He also found that the size of the diversification premium in the post-1997 data is negatively correlated with the degree of diversification and positively correlated with firm size. In contrast, he found that the pre-1997 data typically generates a diversification discount, but the effect is statistically less significant when endogeneity is controlled for.

All aforementioned studies have been performed for the US companies. Non-US studies too show that discount exists in some countries whereas others have a premium. The international evidence suggests that the existence of a discount or premium could result from institutional differences across countries, methodological

issues, usage of different data sources, or sample selection bias (Benito-Osorio, Guerras-Martin, & Zuniga-Vicente, 2012).

In their study, Fleming, Oliver, and Skourakis (2003) found that Australian firms traded at a discount between 1988 and 1998, but the discount vanished when low performing firms were excluded from the sample.

In another study, Lins and Servaes (1999) found that discount existed in Japan, United Kingdom, whereas no discount was found in Germany.

In a later study, Lins and Servaes (2002) analyzed the costs and benefits of corporate diversification in seven emerging markets, namely Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, and Thailand. Comparing the value of diversified firms and focused firms for each country, they found that diversified firms are valued lower than focused firms in these countries. Further, the authors showed that the diversification discount is related to the ability of controlling managers to expropriate small shareholders. Therefore, the benefits of the internal capital market are partially offset by agency costs.

In another study, Singh, Nejadmalayeri, and Mathur (2007) found that diversified firms in India perform significantly worse than focused firms and that there exists a significant negative relation between the degree of diversification and firm performance for the years 1998-2000.

However, the rest of the empirical research in emerging and transition countries actually offers a different picture. Based on data between the 1970s and the early 1990s, studies in China (Li & Wong, 2003; Yiu, Bruton, & Lu, 2005), India (Khanna & Palepu, 2000a; Ramaswamy, Li, & Pettit, 2004), South Korea (Lee, Pend, & Lee, 2008), and Chile (Khanna & Palepu, 2000b) report that some (but not all) conglomerates enjoy higher value than focused firms.

In a comparative study of the US, Japan and eight East Asian countries, Claessens, Djankov, Fan, and Lang (2001) observed that product diversification tends to have a lower impact on the valuation of East Asian firms (i.e., countries with a weak institutional framework) than of firms in the US and Japan (i.e., countries with a strong institutional framework).

Likewise, Fauver, Houston, and Naranjo (2003) have used databases from thirty-five developed and developing countries, to find that the value of corporate diversification is negatively related to the level of capital market development. Among high-income countries, where capital markets are well developed, the authors documented a significant diversification discount. By contrast, for the lower income countries, they found that there is either no diversification discount or a diversification premium. For these firms, the benefits of diversification appear to offset the agency costs of diversification.

Finally, Khanna and Rivkin (2001) and Nachum (2004) were able to confirm the existence of a diversification premium in a sample of fourteen and twenty-two emerging markets respectively.

To the best of our knowledge, there are no studies investigating the relationship between firm level diversification and value for Turkish companies. Although some of the previously discussed cross-country studies included Turkey as well, the Turkish sample size of those studies was limited mostly due to the usage of international information instead of local sources (Fauver et al., 2003; Khanna & Rivkin, 2001). However, there are a limited number of studies analyzing the impact of group affiliation on performance.

In one of them, Gündüz and Tatoğlu (2003) analyzed the stock performance and accounting performance of 202 non-financial firms listed on the Istanbul Stock

Exchange (ISE) as of 1999. Using t-tests on several variables, they concluded that firms affiliated with business groups do not differ from unaffiliated firms in terms of corporate performance.

In a more recent study, Gönenç, Kan, and Karadağlı (2007) analyzed the performance of 200 non-financial firms listed on the ISE during the 2001 crisis. They used two measures of accounting performance, namely operating return on assets (OPRA) and return on assets (ROA), and one measure of stock market performance, namely Tobin's q . Using multivariate analysis including several control variables, they find that affiliated firms, defined as those firms owned by holding company, have better accounting performance compared to unaffiliated firms. Group affiliation has no effect on stock market performance.

Event Studies

Further empirical evidence of the effects of diversification on firm value has been obtained by event studies. The main idea of these studies is to analyze the value effects of refocusing events such as spin-offs or diversifying events such as mergers and acquisitions (M&As). In event studies, "normal" or "expected" returns are calculated over an estimation period prior to the event date, which are, in turn, compared to the actual returns over several event windows. The difference between the two forms returns, i.e. abnormal returns, is tested for significance. Positive abnormal returns indicate that the market considers a given event to be value creating while negative abnormal returns indicate that the investors consider the event to be value destroying.

Morck, Shleifer, and Vishny's (1990) study is often cited as evidence of a negative market reaction to diversifying acquisitions. This study analyzed a sample of 327 US acquisitions between 1975 and 1987. Diversifying acquisitions were found to result in negative announcement day return for bidding firms.

Agrawal, Jaffe, and Mandelker (1992) and Morgan, Nail, and Megginson (2000) also provided evidence of negative returns of acquiring firms that increase corporate diversification.

Examining cross-border M&A transactions over the period 1990 to 1999, Dos Santos, Errunza, and Miller (2008) found no evidence that US acquirer firms' excess values decrease in the two year period surrounding the acquisition. But they also found that US acquirers experience a significant post-merger drop when they have been involved in unrelated M&As.

Using a different methodology, Comment and Jarrell (1995) provided complementary evidence about the valuation of conglomerate firms during the 1978-1989 period. They found that increases in focus, subsequent to asset sales, are associated with increases in value. On the average, increases in focus are associated with positive abnormal stock returns in the year in which focus increases. They also showed that some of the presumed economies of scope, such as the ability to support more debt and the ability to decrease transaction costs in capital markets, are not exploited more by diversified firms.

Similarly, John and Ofek (1995) documented improvements in operating performance over the three years following a refocusing decision. Daley, Mehrotra, and Sivakumar (1997) found evidence of adding value by refocusing spin-offs, and Desai and Jain (1999) showed that long-run returns after a refocusing spin-off are greater than the returns for non-focus-increasing spin-offs. Sicherman and Pettway

(1987) reported in a sample of 147 US M&A announcements, that related acquisitions enhance the shareholder wealth of acquiring firms whereas the opposite is true for unrelated acquisitions.

In contrast to above studies, which document a diversification discount, there is also empirical evidence to the contrary. For instance, Graham, Lemmon, and Wolf (2002) contended that analyzing segments of firms as if they were stand-alone firms is inappropriate. They believe that divisions of diversified firms are systematically different than stand-alone firms. For example, sometimes firms are priced at a discount before becoming part of a merged firm. The authors used Compustat data for 356 firms from 1980 to 1995 that have made acquisitions and accounted for the existing characteristics of the acquired firms. They found that these characteristics explain nearly all of the reduction in the excess value of the acquiring firm after the merger, regardless of the type of acquisition and type of firm.

Walker (2000) also documented that related acquisitions did not generate higher value than unrelated acquisitions for both targets and acquirers in a sample of 278 US M&A announcements in the time period 1980-1996.

Finally, there are studies which report positive market reactions to diversifying acquisitions. Kaplan and Weisbach (1992) replicated the general result of acquisition event studies that bidder returns are slightly negative but combined returns to bidder and targets were found to be positive, which implies that acquisitions increase combined shareholder value.

Schipper and Thompson (1983) found significant positive abnormal performance associated with the announcement of acquisition programs by diversified firms in 1960s. In a later study, Hubbard and Palia (1999) analyzed 392 acquisitions for the period 1960-1971, where the bidder and target did not share the

same two-digit SIC code. The authors were able to confirm the existence of positive abnormal returns for the bidding firm. Matsusaka (1993) reported a similar finding for the 1960s. Chevalier (2000) and Hyland and Diltz (2002) found positive abnormal returns for diversifying acquisitions for the 1980s and 1990s.

Among non-US studies, Sudarsanam, Holl, and Salami (1996) analyzed a sample of 429 deals made by UK companies during 1980-1990. The authors did not find any difference between the gains to shareholders in related and unrelated acquisitions.

In a more recent European study, Martynova and Renneboog (2004) found that irrespective of the corporate strategy, target shareholders earned positive abnormal returns. However, the abnormal returns were significantly higher for related M&A announcements compared to unrelated M&A announcements. Bidders, on the other hand, experienced significantly higher short-term returns around the announcement of related acquisitions.

Only a few studies have dealt with takeover effects on shareholder wealth in emerging markets.

In one of them, Cai (2004) examined the abnormal returns around acquisition announcements made by public companies in eight East Asian countries (Hong Kong, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand) from 1993 to 2003. Using data collected from various sources and the standard event study methodology, the author focused on the impact of corporate ownership and control structure on the market valuation of acquiring companies in a short event window. He also tested whether diversifying acquisitions are a manifestation of agency problems and thus viewed negatively by investors. Although

the diversification variable (dummy 1 if the acquirer and target are not from the same industry) was not significant, the sign was negative as predicted by the author.

In a more recent study, Bhagat, Malhotra, and Zhu (2011) investigated the important characteristics of cross-border acquisitions by firms from emerging countries and the value effects of these acquisitions for the acquirer firms. Using a unique and a manually collected dataset, the authors identified 698 cross-border acquisitions made by emerging country firms during the period January 1991 through December 2008. The countries included in the sample were Brazil, China, India, Malaysia, Mexico Philipinnes, Russia, and South Africa. Using the standard event study methodology, the authors found that emerging country acquirers experience a positive and significant market response of 1.09 percent on the announcement day in unrelated acquisitions. Additionally, acquirer returns were found to be positively correlated with better corporate governance measures in the target country.

Mandacı (2004) examined the M&A announcement effects for companies listed on the Istanbul Stock Exchange (ISE) during the period from 1998 to 2003. For the three-day event window surrounding the acquisition, the author found a cumulative abnormal return (CAR) of 7.21 percent. The CARs were 11.39 percent and 9.7 percent for the five-day and eleven-day event windows respectively. However, the study did not distinguish between related and unrelated acquisitions.

In a more recent study of M&As by Turkish companies, Schiereck and Oelger (2011) examined the announcement effects of takeovers for acquirer company shareholders. The analysis is based on acquisitions which were initiated by ISE-listed companies, that were announced between May 1992 and March 2010. The authors found significant positive abnormal returns for Turkish acquirers but no comparison was made between diversifying and focusing acquisitions.

Productivity Studies

Research about the effect of diversification on plant or firm productivity is much scarcer and not totally clear cut (Villalonga, 2004a). The cumulative evidence from diversification studies about productivity offers no clear support for any diversification theory.

Lichtenberg (1992) for example found that the relationship between diversification and productivity is positive, but becomes negative when controlling for firm size.

In a study using plant level data, Maksimovic and Phillips (2002) found that single-segment firms have significantly higher productivity than diversified firms. Their definition of business segments at the three-digit SIC level, however, may lead to classify as single-segment many firms that would otherwise be considered as diversified (Villalonga, 2004a).

In contrast, using also plant-level data, Schoar (2000) found that conglomerates are more productive than single-segment firms, and that plants that are newly acquired (through a diversifying acquisition) experience a productivity increase. At the acquiring firm level, however, this increase is more than offset by the productivity decrease suffered by the existing plants. Schoar (2000) provides evidence of the coexistence of a diversification discount with a productivity premium in her sample.

In another study, Shin and Stulz (1998) found that while a segment's investment depends more on its own cash flow than on the cash flows of the other segments, investment sensitivity for segments in diversified firms is significantly

lower than it is for single-segment firms. They concluded that diversified firms may invest less efficiently than single-segment firms.

Finally, Lamont (1997) found that oil firms significantly reduced their non-oil investments as a result of the oil-price shock, suggesting that the aggregation of single-segment firms into a single diversified company leads to a financial interdependence between firm segments. He argued that the evidence points to overinvestment and inefficient cross-subsidization of poorly performing segments in diversified firms.

As it becomes clear from the preceding discussion, the studies analyzing the impact of diversification on value have produced mixed results depending on the time periods, countries, methodologies and control variables included in the study. So the diversification-value link is still an open empirical question.

CHAPTER 3
CORPORATE DIVERSIFICATION AND FIRM VALUE
IN EMERGING MARKETS

The objective of this chapter is to investigate the impact of corporate diversification on firm value in emerging markets. As explained in previous chapters, much of the literature on corporate diversification has been conducted for developed economies. The lack of well-developed product markets, capital markets, and labor markets coupled with under-developed laws and regulations, and inconsistent enforcements of contracts suggest that the relationship between diversification and value could be different in emerging markets and warrants further investigation (Khanna & Palepu, 1997).

The rest of the chapter is organized as follows. First, we describe our sample selection procedure. Then, the methodology is explained and some descriptive statistics are presented. Finally, the estimation procedure is explained followed by the analysis results.

Sample Construction

To collect the data for this study, we used the Emerging Markets Information Service (EMIS) and Worldscope databases. To select the countries to be included in the study, we started with the countries in Standard & Poor's (S&P) Emerging Markets List. Our main objective is to compare segments of diversified firms to stand-alone

entities operating in those segments; therefore we eliminated countries with less than one-hundred firms since it would be difficult to find suitable benchmark companies in that case (Lins & Servaes, 2002). We also eliminated the countries which have more than one-thousand firms listed, so that the results from these countries do not dominate the findings. Finally, we limited the sample to countries classified as “middle income” like Turkey. The remaining nine countries in our sample are Brazil, Chile, Indonesia, Malaysia, Philippines, Poland, South Africa, Thailand, and Turkey. The main stock exchanges of these countries are Sao Paulo, Santiago, Indonesia, Kuala Lumpur, Philippines, Warsaw, Johannesburg, Thailand, and Istanbul Stock Exchanges.

To select the firms to be included in the study, we followed the sample selection procedure of Lins and Servaes (1999, 2002). We started with the entire universe of firms listed on the databases. Since we need market values for the companies in our study, we excluded private companies from the analysis. We also eliminated firms that are not listed on the country’s major stock exchange. We then excluded firms whose primary business is financial services (SIC codes between 6000 and 6999), because we cannot construct meaningful ratios of their market value to their sales level.

We classified a firm as diversified when it reports sales in two or more industries which are defined at the two-digit SIC code level. Diversification is defined at two-digit level since US evidence shows that there are no penalties for related diversification (Berger & Ofek, 2005). In some cases, the segment description in the financial statements differs from the industry SIC codes. Whenever this occurs, we corrected the SIC code to reflect the industry segment description.

Within each country, we excluded multi-segment firms from the sample if the

company does not report sales at the individual segment level. However, in cases where individual segment sales are not reported and there is only one primary reported SIC, we classified the firm as a single-segment firm and used the firm's total sales in the analysis.

Finally, following Fauver et al. (2003) we excluded firms for which there are no pure-play matches and corresponding segment sales exceed twenty-five percent of total sales.

Table 3 below lists the number of companies at the start of sample selection procedure and the number of remaining firms after applying the above mentioned screens to the data, while Table 4 describes the final sample in terms of reported segments.

Table 3. Sample Construction

	Brazil	Chile	Indonesia	Malaysia	Poland
Companies listed on the major stock exchange of the country	354	199	431	828	271
Exclude: Companies in the financial sector	160	99	159	716	65
Companies remaining	194	100	272	112	206
Exclude: Companies classified as diversified which do not report segment data	26	17	23	0	14
Companies remaining	168	83	249	112	192
Exclude: Companies for which no benchmarks can be found	2	3	0	3	0
Final sample	166	80	249	109	192
Number of diversified companies (%)	57 (34%)	44 (55%)	100 (40%)	56 (51%)	75 (39%)
	Philippines	South Africa	Thailand	Turkey	TOTAL
Companies listed on the major stock exchange of the country	251	332	545	326	3537
Exclude: Companies in the financial sector	137	185	163	109	1793
Companies remaining	114	147	382	217	1744
Exclude: Companies classified as diversified which do not report segment data	16	19	25	24	164
Companies remaining	98	128	357	193	1580
Exclude: Companies for which no benchmarks can be found	3	1	0	0	12
Final sample	95	127	357	193	1568
Number of diversified companies (%)	14 (15%)	57 (45%)	87 (24%)	60 (31%)	550 (35%)

Table 4. Number of Segments

Number of segments	Brazil	Chile	Indonesia	Malaysia	Poland
1	109 (66%)	36 (45%)	149 (60%)	53 (49%)	117 (61%)
2	13 (8%)	12 (15%)	34 (14%)	14 (13%)	15 (8%)
3	16 (10%)	12 (25%)	36 (14%)	18 (17%)	20 (10%)
>3	28 (17%)	20 (25%)	30 (12%)	24 (22%)	40 (21%)
	Philippines	South Africa	Thailand	Turkey	TOTAL
1	81 (85%)	70 (55%)	270 (66%)	133 (69%)	1018 (65%)
2	5 (5%)	13 (10%)	24 (9%)	13 (7%)	143 (9%)
3	6 (6%)	14 (11%)	32 (12%)	22 (11%)	176 (11%)
>3	3 (3%)	30 (24%)	31 (12%)	25 (13%)	231 (13%)

Thailand has the largest representation (357 companies), followed by Indonesia (249 companies) and Turkey (193 companies). The last row of the Table 3 shows the

number of diversified firms in each country in our final sample. Chile has the highest rate of diversification (fifty-five percent) and Philippines has the lowest rate (fifteen percent). However, it should be noted that these rates of diversification may be understated because we did not consider firms that are diversified into financial services or that lack data on segment sales in our computations.

The total sample consists of 1,568 firms. The period of analysis is from 2005 to 2010. Therefore the dataset corresponds to 9,408 firm-years without considering missing data. On the average, sixty-five percent of the firms in the sample are single-segment and thirty-five percent are diversified (as of the end of 2010). Nine percent of the firms are operating in two segments, eleven percent are operating in three segments, and thirteen percent are operating in four or more segments.

Variables

Dependent Variable

To estimate the value of corporate diversification, we employed the excess value measure originally used by Berger and Ofek (1995) as the dependent variable in our analysis. This measure represents the difference between a firm's actual value and its imputed value.

Actual value is calculated as the sum of market value of equity and book value of debt. To calculate imputed value, we first assign each segment a benchmark company. The benchmark company is defined as the company with the median capital-to-sales ratio among all single-segment firms within the same two-digit SIC code industry and same country. We then multiply the level of sales in each segment

of a diversified firm by its corresponding industry median capital-to-sales ratio.

Then, the total imputed value of the firm is calculated as the sum of each segment's imputed value.

Thus, excess value is given by the following equations:

$$EV_{it} = \ln (V_{it} / ImpV_{it}) \quad (1)$$

$$ImpV_{it} = \sum_{j=1}^N (w_j S_j) \quad (2)$$

where:

EV_{it} = Excess value measure of firm i at time t ,

V_{it} = Firm i 's actual value measured as market value of common equity plus book value of debt at time t ,

$ImpV_{it}$ = Imputed value of the firm i at time t ,

w_j = Segment j 's multiplier, measured as the benchmark firm's ratio of total value to sales in the same industry,

S_j = Segment j 's sales, and

N = Number of segments.

Multi-segment firms have a positive excess value if the overall company's value is greater than the "sum of the parts." By contrast, multi-segment firms have a negative excess value if their actual value is less than the imputed value that would be obtained by taking a portfolio of pure-play firms that operate in the same industries and country as the diversified firm.

In cases where there are no other two-digit single-segment firms to match from, we calculated the imputed capital-to-sales ratio using broader industry

classifications defined by Campbell (1996) to minimize loss of observations. While there are fifty-five two-digit SIC codes (excluding those belonging to the financial sector), Campbell (1996) groups these into eleven larger categories.

In order to correctly compare single-segment and diversified firms, we also computed the excess value measure for firms that operate in only one segment.

Along with capital-to-sales ratio, Berger and Ofek (1995) also consider two other ratios to measure performance: the ratio of capital-to-assets and the ratio of capital-to-EBIT. Their qualitative results are similar for each of the three performance measures. We were unable to use these alternative measures because there is very little business segment data regarding assets or earnings for emerging market firms. For similar reasons, Lins and Servaes (1999, 2002) also use the capital-to-sales-ratio as their only measure of performance.

Diversification Variables

To measure diversification, two different measures were used in order to check the robustness of the results.

First, following Berger and Ofek (1995), a dummy variable (D) was employed, which takes the value of “1” if the firm reports sales in more than one business segment, and “0” otherwise.

Second, following Lang and Stulz (1994) we employed a more informative measure taking into consideration the relative importance of each segment. This second measure of diversification (DH) is based on a Herfindahl index calculated from segment sales according to the following formula.

$$DH = 1 - H \quad (3)$$

$$H = \sum_{j=1}^N (S_j/S_t)^2 \quad (4)$$

where:

S_j is the j th business segment's sales,

N is the number of segments,

S_t is the firm's total sales,

H is the Herfindahl index, and

DH is the total diversification.

The Herfindahl index can take values between zero and one, and is inversely related to diversification. It takes the value of one for firms specialized in a single industry and approaches toward zero as a firm diversifies across many industries. Smaller levels of the Herfindahl index correspond to less industry focus and greater diversification. The higher the index H , the lower is the level of total diversification. Total diversification (DH) is defined as one minus the Herfindahl index. Therefore, DH also takes values between zero and one. But, the higher DH , the more diversified the firm is.

Control Variables

A number of other factors related to value were included in our model as control variables.

The majority of the previous papers on diversification controlled for firm size, profitability and growth opportunities (Berger & Ofek, 1995; Lang & Stulz,

1994; Lins & Servaes, 1999, 2002; Servaes, 1996 among others). Consequently, we included firm size measured by the natural logarithm of total assets converted to US dollars, profitability measured by the ratio of operating income (EBIT) to sales, and growth opportunities measured by the ratio of capital expenditures to sales, as control variables in our regression equations. Based on the previous diversification literature, we anticipate a positive impact of profitability and growth opportunities on excess value. However, previous evidence on the effect of the size variable has been mixed: Berger and Ofek (1995) find a positive link between firm size and firm value while Lang and Stulz (1994) and Lins and Servaes (1999) find a negative relationship.

We also included the ratio of total debt to total assets to capture the degree of financial slack available to the firm (Campa & Kedia, 1999). We expect a positive impact of this variable on excess value.

Finally, we controlled for international sales because Errunza and Senbet (1981, 1984) and Morck and Yeung (1991) find evidence of a positive relation between internationalization and firm value while Denis, Denis, and Yost (2002) find evidence that international diversification leads to a decrease in firm value. The internationalization is measured by a dummy variable equal to “1” if the firm obtains some of its sales from abroad, and “0” otherwise.

The variables are summarized on Table 5 that follows.

Table 5. Variable Definitions

Variable	Symbol	Definition
Excess value	<i>EV</i>	Actual value / Imputed value
Diversification	<i>D</i>	Dummy variable equal to 1 if the firm operates in more than one segment, 0 otherwise
	<i>DH</i>	Herfindahl based measure of diversification
Firm size	<i>SIZE</i>	Log of total assets
Profitability	<i>EBITSA</i>	Operating income / Total sales
Growth opportunities	<i>CAPEXSA</i>	Capital expenditures / Total sales
Leverage	<i>LEV</i>	Total debt / Total assets
International sales	<i>INT</i>	Dummy variable equal to 1 if the firm obtains some of its revenues from abroad, 0 otherwise

Descriptive Statistics

Table 6 below describes average excess values for the single-business and diversified firms in the sample of this study (2005-2010). The significance of the difference between the means is assessed using the t-statistic.

Table 6. Excess Value

	Mean		Std. Dev.	N
Diversified firms	0,1157	***	0,7978	3180
Single-segment firms	-0,0488		0,6898	5562
Total Sample	0,0798		0,7647	8742

*** Significantly different from single segment firms at 1%.

There are 8,742 firm-years in total. 3,180 of the firm-years belong to diversified firms while 5,562 belong to single segment firms. The data constitute an unbalanced panel. 120 diversified and 546 single business firm-year observations were lost due to missing data on market values.

Diversified firms in the sample have a mean excess value of 11.57 percent, indicating that multi-business firms are valued at a premium compared to single-

segment firms to which they are benchmarked. Single-segment firms in the sample have a mean excess value of minus 4.88 percent. The difference in excess values of diversified and single-segment firms is statistically significant at the one percent level of significance.

Table 7 below provides the descriptive statistics on the independent variables used.

Table 7. Descriptive Statistics on Independent Variables

	Mean	Std. Dev.	N
<i>D</i>	0.35	0.48	9408
<i>DH</i>	0.21	0.35	9408
<i>SALES (mn. \$)</i>	688.64	2824.01	9294
<i>ASSETS (mn. \$)</i>	852.34	4198.70	9276
<i>SIZE</i>	4.89	1.90	9288
<i>EBITSA</i>	0.09	0.61	8916
<i>CAPEXSA</i>	0.07	0.11	8982
<i>LEV</i>	0.23	0.37	8976
<i>INT</i>	0.36	0.36	9396

As can be seen on Table 7, thirty-five percent of the companies in our sample are diversified and the mean Herfindahl index-based diversification score is 0.21. Firm size, determined as the natural logarithm of total assets, has a mean of 4.89. The mean profitability measured by the ratio of EBIT to sales is 0.09. Growth opportunities are measured as the ratio of capital expenditures to sales and show a mean of 0.07. Leverage, given as the ratio of total debt to total assets, registers a mean value of 0.23. Finally, thirty-six percent of the companies in our sample are internationally diversified, i.e. derive portion of their sales from abroad. Descriptive statistics by country are presented in the appendix A.

Table 8 below shows the correlation matrix of the independent variables

Table 8. Correlation Matrix

	<i>D</i>	<i>DH</i>	<i>SIZE</i>	<i>EBITSA</i>	<i>CAPEXSA</i>	<i>LEV</i>	<i>INT</i>
<i>D</i>	1.0000						
<i>DH</i>	0.8261	1.0000					
<i>SIZE</i>	0.1425	0.0499	1.0000				
<i>EBITSA</i>	0.0406	0.0361	0.0501	1.0000			
<i>CAPEXSA</i>	-0.0222	-0.0171	-0.0135	0.0808	1.0000		
<i>LEV</i>	-0.0275	-0.0102	-0.1600	-0.0578	0.0601	1.0000	
<i>INT</i>	-0.0278	-0.0337	0.0223	0.0107	-0.0146	-0.0263	1.0000

As expected, the correlation between the two measures of diversification *D* and *DH* is fairly high (0.83) and significant at the one percent level. The cross-correlations between other independent variables do not exceed 0.20.

Estimation

Using the variables presented in the previous section, two separate regression equations will be estimated: the first one will use a dummy variable to measure diversification while the second one will use the Herfindahl index-based measure explained above.

We do not include country dummies in the regressions because we compute the excess value measures within each country. Thus, if there are differences across countries in market-to-sales ratios because of institutional differences, these will be normalized as part of our excess value computations since they are expected to affect diversified companies and benchmark companies in a similar manner.

Before starting the estimation, we excluded observations with extreme excess values, above 1.386 or below -1.386 from the analysis following Berger and Ofek (2005). These outliers correspond to situations where actual value is more than four

times the imputed value and less than one-fourth the imputed value, respectively. We removed twenty-three firm-years from the sample after applying these cut-offs.

Due to the structure of our dataset, panel data estimation will be employed.

The models to be estimated are as follows.

$$\text{Model 1: } EV_{it} = b_0 + b_1D_{it} + b_2X_{it} + \varepsilon_{it} \quad (5)$$

$$\varepsilon_{it} = \alpha_i + \eta_{it}$$

$$\text{Model 2: } EV_{it} = b_0 + b_1DH_{it} + b_2X_{it} + \varepsilon_{it} \quad (6)$$

$$\varepsilon_{it} = \alpha_i + \eta_{it}$$

where:

EV_{it} is the excess value of the firm i in year t ,

D_{it} is a dummy variable equal to 1 if firm i is diversified in year t , 0 otherwise,

DH_{it} is the Herfindahl index-based measure of diversification,

X_{it} is the set of exogenous observable characteristics of the firm i included as control variables,

b_0, b_1, b_2 are parameters to be estimated,

ε_{it} is the error term,

α_i is the individual effect component of the error term, and

η_{it} is the time-variant component of the error term.

Since a cross-sectional heterogeneity is highly probable due to potential omitted variables affecting excess value, a different intercept should be modeled for each firm.

There are two ways to accomplish this: The first way is to put a dummy for each firm. Doing this allows each company to have a different intercept and so OLS including all these dummies should produce unbiased estimates. This procedure is named as “the fixed effects model” (Greene, 2011). The fixed effects model assumes that the time-invariant part of the error term, α_i is correlated with the explanatory variables (Johnston & DiNardo, 1996).

The second way of allowing different intercepts, “the random effects model” is similar to the fixed effects model in that it postulates a different intercept for each firm, but it interprets these intercepts in a new way. This procedure views the different intercepts as having been drawn from a bowl of different intercepts, so they may be interpreted as random and treated as if they were part of the error term. As a result, we have a specification in which there is an overall intercept, a set of explanatory variables and a composite error term. The composite error has two parts. For a particular firm in a particular year, one part is the random intercept term measuring the extent to which the firm’s intercept differs from the overall intercept. The other part is the traditional random error indicating a random deviation for that firm in that time period (Kennedy, 2008). The random effect model assumes that α_i is uncorrelated with the explanatory variables (Johnston & DiNardo, 1996).

If the individual effects are uncorrelated with the explanatory variables, the random effects estimator is consistent and efficient. The fixed effects estimator is also consistent but inefficient. By saving on degrees of freedom, the random effect model produces a more efficient estimate of the coefficients than the fixed effects model. On the other hand, if the effects are correlated with the explanatory variables, the fixed effects estimator is consistent and efficient but the random effects estimator is inconsistent (Johnston & DiNardo, 1996).

The Hausman specification test is the classical test of whether the fixed or random effects model should be used. The research question is whether there is significant correlation between the unobserved firm-specific random effects and the regressors. If there is no such correlation, then the random effects model may be more powerful and parsimonious. If there is such a correlation, the random effects model would be inconsistently estimated and the fixed effects model would be the model of choice (Greene, 2011).

The test for this correlation is a comparison of the covariance matrix of the regressors in the fixed effects model with those in the random effects model. The null hypothesis is that there is no correlation. If there is no statistically significant difference between the covariance matrices of the two models, then the correlations of the random effects with the regressors are statistically insignificant and the random effects model should be preferred over the fixed effects model (Greene, 2011).

The Hausman test is a kind of Wald chi-square test with k degrees of freedom (where k equals the number of regressors) on the difference matrix between the variance-covariance of the fixed effects with that of the random effects model. The chi-square statistics are 55.1461 ($p < 0.01$) for the first model (where diversification is measured by a dummy variable) and 46.1113 ($p < 0.01$) for the second model (where diversification is measured by the Herfindahl index). Based on these results, the null hypothesis that the random effects estimate is insignificantly different from the fixed effects estimate can be rejected. Therefore, a fixed effects panel data regression will be employed in our analyses. Other than providing consistent estimates, the fixed effects model provides an additional advantage in our case. It

allows us to deal with the potential endogeneity of the diversification variable (Campa & Kedia, 2002).

Results

Tables 9 below displays the estimation results for Model 1 where diversification is measured by a dummy variable (*D*) while Table 10 documents the estimation results for Model 2 including the Herfindahl index-based measure of diversification (*DH*).

Table 9. Estimation Results for Model 1

Dependent Variable: EV				
Method: Panel Least Squares				
Sample: 2005 2010				
Periods included: 6				
Cross-sections included: 1568				
Total panel (unbalanced) observations: 8286				
Effects Specification: Cross-section fixed				
Variable	Coefficient	Std. Error	t-Statistic	Sign.
<i>D</i>	0.2138	0.0411	5.19942	***
<i>SIZE</i>	0.0096	0.0054	1.79239	*
<i>EBITSA</i>	0.0103	0.0037	2.80792	***
<i>CAPEXSA</i>	0.0040	0.0010	3.85568	***
<i>LEV</i>	0.0822	0.0250	3.28311	***
<i>INT</i>	-0.0011	0.0012	-0.89656	
Adjusted R-squared	0.2295			
Durbin-Watson stat	2.0844			
F-statistic	12.8088	***		
***, **, and * denote significance at 1%, 5% and 10% respectively				

Table 10. Estimation Results for Model 2

Dependent Variable: EV				
Method: Panel Least Squares				
Sample: 2005 2010				
Periods included: 6				
Cross-sections included: 1568				
Total panel (unbalanced) observations: 8286				
Effects Specification: Cross-section fixed				
Variable	Coefficient	Std. Error	t-Statistic	Sign.
<i>DH</i>	0.1388	0.0410	3.3802	***
<i>SIZE</i>	0.0082	0.0044	1.8924	*
<i>EBITSA</i>	0.0106	0.0037	2.8806	***
<i>CAPEXSA</i>	0.0040	0.0010	3.9216	***
<i>LEV</i>	0.0806	0.0251	3.2135	***
<i>INT</i>	-0.0012	0.0012	-1.0147	
Adjusted R-squared	0.2227			
Durbin-Watson stat	2.0711			
F-statistic	12.6797	***		
***, **, and * denote significance at 1%, 5% and 10% respectively				

In both regressions, the F-statistic is significant at the one percent level, indicating that there is statistically significant relationship between the dependent and explanatory variables. The Durbin-Watson statistic, which is approximately equal to 2 in both models, indicates no evidence of autocorrelation. Adjusted R-squared values, which equal 0.23 for the first model and 0.22 for the second model are in line with values obtained in previous literature (eg. Lins & Servaes, 2002; Fauver et al., 2003).

In the first regression, where a dummy variable *D* is used to measure diversification, we find a diversification premium of 21.38 percent, significant at the one percent level. Since we have a log-linear specification, this means that the ratio of actual value to imputed value in diversified firms is 21.38 percent higher

compared to the same ratio in single segment firms. In other words, diversification raises shareholder value by 21.38 percent. The significant and positive coefficient on *DH* which equals 0.1388 in the second regression also corroborates the positive relationship between diversification and excess value.

In both models, the coefficients on most control variables are significant. Profitability, growth opportunities, and leverage are positively related to excess value and significant at one the percent level. These results are consistent with previous literature (eg. Berger & Ofek, 1995; Lang & Stulz, 1994; Lins & Servaes, 1999, 2002; Servaes, 1996). Firm size is also marginally significant and has a positive effect on excess value, consistent with Berger and Ofek (1995). But the coefficient estimate for the variable *INT* is not statistically significant, meaning that internationalization does not affect excess value. This finding contradicts previous literature (eg. Errunza & Senbet, 1981, 1984; Morck & Yeung, 1991; Denis et al., 2002).

Overall, our regression results suggest that, in the sample of emerging markets analyzed in this study, corporate diversification increases company value for the period between 2005 and 2010. Diversified companies in our sample are valued more compared to their single segment benchmarks, providing support for weak-form diversification premium (Villalonga, 2003).

CHAPTER 4

CORPORATE DIVERSIFICATION AND FIRM VALUE IN TURKEY: THE MODERATING ROLE OF GROUP MEMBERSHIP

Chapter Three has focused on diversification at the firm level and documented a diversification premium. One of the most emphasized benefits of diversification is the creation of internal capital markets within the diversified firm. In that sense, industrial groups or business groups consisting of companies with strong cross-shareholdings, are somewhat similar to diversified firms since member companies may support each other economically in potentially profitable projects. Of course, groups cannot be expected to create internal capital markets in which funds flow as freely from firms with poor investment opportunities to firms with better investment opportunities. Still, previous studies found that sensitivity of investment to cash flow is smaller for group member firms (Lins & Servaes, 1999).

In light of the above mentioned evidence, it is possible that diversification only benefits firms that do not belong to industrial groups. For firms that have a group affiliation, further diversification at the firm level might not be beneficial because some of the benefits of internal capital markets may already be captured by the group structure (Lins & Servaes, 1999).

Turkey constitutes an ideal experimental setting to test that hypothesis, since the majority of the large scale firms in Turkey are operating under a business group affiliation. These business groups which are organized around a *holding* company are the outcome of investments by a single family or a small number of allied families.

Families hold the majority control of the holding company, which in turn has shareholdings in several other companies giving rise to a pyramidal structure. There are cases where the companies hierarchically under the holding company own the shares of each other (Yurtoğlu, 2000).

Banks constitute a special feature of the Turkish business groups. Almost every private bank in Turkey is under the control of a business group and serves as the main bank of this group. The standard explanation given to that structure is that groups are a functional substitute for imperfect markets in capital and intermediate products (Leff, 1978).

Despite their indisputable significance for the Turkish economy, the activities of business groups are paradoxically poorly documented. As explained in the literature review section, some studies such as Gönenç et al. (2007) or Gündüz and Tatoğlu (2003) compared group members and non-group members in terms of performance, but in general empirical evidence is scarce. This is largely due to the fact that official data are collected at the company instead of the group level (Yurtoğlu, 2000).

The objective of the present chapter is to investigate the role of group membership on firm value from a different perspective: We aim at analyzing the moderating role of group membership for the diversification-value relationship in Turkish companies. We anticipate that the value effect of diversification might be different depending on whether the company is affiliated with a business group.

The rest of the chapter proceeds as follows. First, we describe our sample and variables. Then, the methodology is explained and some descriptive statistics are presented. Finally, the estimation procedure is explained followed by the analysis results.

Sample Selection and Variables

We use the same sample of 193 Turkish companies selected in the previous chapter. We use data from the website of *Kamuyu Aydınlatma Platformu* (Public Disclosure Platform) to determine whether our sample firms belong to industrial groups. We consider a firm to be a group member if the ultimate owner is a holding company. We also take into consideration indirect shareholdings.

To study whether diversification is beneficial for independent firms, we employ the same dependent variable (excess value) as in the previous chapter, except that, to construct industry benchmarks, we use only single segment firms that do not belong to industrial groups. If there is an independent group effect, it would be inappropriate to also use single-segment firms that belong to groups in our benchmark computations.

The drawback of this approach is that we have few industry-matched firms left in most industries, which adds noise to our measures. In most cases, we must use broad industry groups to match the segments. In spite of this, we lose four firms from the sample due to inability to find suitable benchmarks, resulting in a total sample of 189 firms corresponding to 1134 firm-years without considering missing data. Among these 189 firms, fifty-four percent are group members while thirty percent are diversified at the firm level (see Table 11 below). The distribution of Turkish companies according to their main two-digit SIC code industry is given in the appendix B.

Table 11. Group membership vs. Firm Level Diversification

	Single-segment	Diversified	Total
Non-group member	66 (35%)	21 (11%)	87 (46%)
Group member	67 (35%)	35 (19%)	102 (54%)
Total	133 (70%)	56 (30%)	189 (100%)

Table 12 below describes mean excess values for the single-business and multi-business firms, as well as for group members and non-group members in the sample of this study (2005-2010). The significance of the difference between the means is assessed using the t-statistic.

Table 12. Excess Value

	Single-segment	Diversified	
Non-group member	-0,0274	0,0723	**
Group member	0,0553	0,0630	
** Significantly different from single segment firms at 5%			

As shown on Table 12, the impact of diversification on excess value is different for group members and non-group members. Among the non-group members, diversified firms have a mean excess value of 7.23 percent, which is significantly higher than the mean excess value for single segment firms which equals minus 2.74 percent. Among the group members, diversified firms have a mean excess value of 6.30 percent while the average excess value for single segment firms is 5.53 percent. The difference is not statistically significant.

Table 13 below provides the descriptive statistics on the independent variables. *G* is a dummy variable equal to 1 for group affiliates. The remaining variables have been defined in the previous chapter.

Table 13. Descriptive Statistics on Independent Variables

	Mean	Std. Dev.	N
<i>D</i>	0,30	0,46	1134
<i>DH</i>	0,11	0,20	1134
<i>SALES (mn. \$)</i>	708,10	1811,40	1134
<i>ASSETS (mn. \$)</i>	703,31	1615,38	1134
<i>SIZE</i>	5,26	1,63	1134
<i>EBITSA</i>	0,11	0,38	1086
<i>CAPEXSA</i>	0,07	0,14	1116
<i>LEV</i>	0,31	1,11	1124
<i>INT</i>	0,47	0,50	1122
<i>G</i>	0,54	0,50	1134

As can be seen on Table 13, thirty percent of the companies in our sample are diversified and the mean Herfindahl index-based diversification score is 0.11. Fifty-four percent of the companies in our sample belong to industrial groups. Firm size, determined as the natural logarithm of total assets, has a mean of 5.26. The mean profitability measured by the ratio of EBIT to sales is 0.11. Growth opportunities are measured as the ratio of capital expenditures to sales and show a mean of 0.07. Leverage, given as the ratio of total debt to total assets, registers a mean value of 0.31. Finally, forty-seven percent of the companies in our sample are internationally diversified.

Table 14 below shows the correlation matrix of the independent variables.

Table 14. Correlation Matrix

	<i>D</i>	<i>DH</i>	<i>G</i>	<i>SIZE</i>	<i>EBITSA</i>	<i>CAPEXSA</i>	<i>LEV</i>	<i>INT</i>
<i>D</i>	1,0000							
<i>DH</i>	0,8128	1,0000						
<i>G</i>	0,0984	0,1241	1,0000					
<i>SIZE</i>	0,1744	0,1305	0,1302	1,0000				
<i>EBITSA</i>	0,0902	0,1163	-0,0027	0,0261	1,0000			
<i>CAPEXSA</i>	0,0586	0,0095	0,0711	0,1571	0,0724	1,0000		
<i>LEV</i>	-0,0388	-0,0023	-0,0317	-0,0113	-0,0234	0,0992	1,0000	
<i>INT</i>	-0,0241	-0,0499	0,0449	-0,0461	-0,1028	-0,1701	-0,0522	1,0000

As can be seen on Table 14, the correlation between the two measures of diversification is high. Other correlations do not exceed twenty percent.

Estimation

To study the impact of corporate diversification on firm value and to analyze whether that effect is different depending on group membership, we employ the same valuation method as in Chapter Three. We re-estimate our basic regression models by using the newly computed excess values, but we also include a group membership variable (G) which takes the value of “1” if the firm belongs to a business group, and “0” otherwise. In the regression equation, we also include the interaction between the group dummy and the diversification variable in order to test a possible moderating effect of the group membership on the relationship between diversification and excess value (Lins & Servaes, 1999, 2002).

As in Chapter Three, extreme excess values, above 1.386 or below -1.386 , are excluded from the analysis. These outliers correspond to situations where actual value is more than four times the imputed value and less than one-fourth the imputed value, respectively. We remove five firm-years from the analysis after applying these cut-offs. The estimated models are as follows

$$\text{Model 1: } EV_{it} = b_0 + b_1D_{it} + b_2X_{it} + b_3G_{it} + b_4D_{it} * G_{it} + \varepsilon_{it} \quad (7)$$

$$\varepsilon_{it} = \alpha_i + \eta_{it}$$

$$\text{Model 2: } EV_{it} = b_0 + b_1DH_{it} + b_2X_{it} + b_3G_{it} + b_4DH_{it} * G_{it} + \varepsilon_{it} \quad (8)$$

$$\varepsilon_{it} = \alpha_i + \eta_{it}$$

where:

EV_{it} is the excess value of the firm i in year t ,

D_{it} is a dummy variable equal to 1 if firm i is diversified for in year t , 0 otherwise,

DH_{it} is the Herfindahl index-based measure of diversification,

X_{it} is the set of exogenous observable characteristics of the firm i included as control variables,

G_{it} is a dummy variable equal to 1 if the firm belongs to a business group and 0 otherwise,

b_0, b_1, b_2, b_3, b_4 are parameters to be estimated,

e_{it} is the error term,

α_i is the individual effect component of the error term, and

η_{it} is the time-variant component of the error term.

The equations 7 and 8 can not be estimated using fixed-effects due to the singularity of the data. This singularity arises from the inclusion of a discrete dummy variable for industrial group membership that persists over time. In addition, the Hausman test ($\chi^2(8) = 34.5942, p < 0.01$) indicates a violation of the assumptions of the random effects model so pooled OLS method will be employed.

Results

Tables 15 below displays the estimation results for Model 1 where diversification is measured by a dummy variable (D) while Table 16 documents the estimation results for Model 2 including the Herfindahl index-based measure of diversification (DH).

Table 15. Estimation results for Model 1

Dependent Variable: EV				
Method: Pooled OLS				
Sample: 2005 2010				
Periods included: 6				
Cross-sections included: 189				
Total panel (unbalanced) observations: 1068				
Variable	Coefficient	Std. Error	t-Statistic	Sign.
<i>C</i>	0.0979	0.0800	1.2246	
<i>D</i>	0.1014	0.0453	2.2412	**
<i>SIZE</i>	0.0136	0.0068	2.0078	**
<i>EBITSA</i>	0.0765	0.0323	2.3716	**
<i>CAPEXSA</i>	0.0831	0.1445	0.5752	
<i>LEV</i>	0.3332	0.0681	4.8929	***
<i>INT</i>	0.0412	0.0400	1.0314	
<i>GR</i>	0.1023	0.0474	2.1589	**
<i>D*GR</i>	-0.1254	0.0553	-2.2688	**
Adjusted R-squared	0.1461			
F-statistic	8.5371	***		
Durbin-Watson stat	1.9698			
***, **, and * denote significance at 1%, 5% and 10% respectively				

Table 16. Estimation Results for Model 2

Method: Pooled OLS				
Sample: 2005 2010				
Periods included: 6				
Cross-sections included: 189				
Total panel (unbalanced) observations: 1068				
Variable	Coefficient	Std. Error	t-Statistic	Sign.
<i>C</i>	0.1058	0.0796	1.3298	
<i>DH</i>	0.0514	0.0255	2.0198	**
<i>SIZE</i>	0.0126	0.0063	2.0084	**
<i>EBITSA</i>	0.0875	0.0323	2.7126	***
<i>CAPEXSA</i>	0.0365	0.1463	0.2493	
<i>LEV</i>	0.3492	0.0682	5.1171	***
<i>INT</i>	0.0326	0.0403	0.8091	
<i>GR</i>	0.1128	0.0450	2.5080	**
<i>DH*GR</i>	-0.0423	0.0207	-2.0475	**
Adjusted R-squared	0.1487			
F-s statistic	8.8883	***		
Durbin-Watson stat	1.9498			
***, **, and * denote significance at 1%, 5% and 10% respectively				

In both regressions, the F-statistic is significant at one percent level, indicating that there is statistically significant relationship between the dependent and explanatory variables. The Durbin-Watson statistic, which is approximately equal to 2 in both models indicates no evidence of autocorrelation. Adjusted R-squared values are equal to 0.15 for the first and second models.

In the first model, the coefficient on the diversification dummy is positive and significant at five percent level. In this specification, the coefficient of the diversification dummy represents the impact of diversification on value for non-group members only. Among the non-group members, diversified firms are valued at a premium of 10.14 percent compared to single segment firms. This result means that

for firms that are not group members, firm level diversification is beneficial. The interaction between the group membership dummy and the diversification dummy is negative (-0.1254) and significant at the five percent level. This finding indicates that, diversification is less valuable for firms that belong to industrial groups. Among the group members, diversified firms are valued 2.39 (10.14 – 12.54) percent less compared to single segment firms, however the difference is not statistically significant. This finding indicates that for firms that belong to industrial groups, further diversification at the firm level does not have an impact on value. The group members may be considered to be already diversified.

The estimation results for the second model, where the Herfindahl index based measure of diversification is used instead of the dummy variable, also confirm the results of the first model. The coefficient on the diversification variable is again positive (0.0514) and significant at the five percent level. This finding indicates that for non-group members, excess value increases as the diversification measure increases. The interaction between the group membership dummy and the diversification variable is again negative and significant at the five percent level. This finding indicates that, diversification is less valuable for firms that belong to industrial groups. Among the group members, the coefficient on the diversification variable is equal to 0.0091 (0.0514 – 0.0423) and is not significantly different from zero. This result means that for firms that belong to industrial groups, firm level diversification does not have an impact on company value.

Finally, when the coefficient estimates for control variables are analyzed, the variables *SIZE*, *EBITSA* and *LEV* are found to have positive and statistically significant coefficients for both specifications. These results indicate that excess value is higher for larger companies, companies with higher operating profitability

and companies with higher leverage. On the other hand, the coefficient estimates for the variables *CAPEX* and *INT* are not significantly different from zero, meaning that capital expenditures or international sales do not have an effect on company value.

This evidence supports the argument that group members can capture the benefits of corporate diversification without having to diversify at the firm level. For firms that are group members, further diversification at the firm level does not have an effect on company value. But for firms that are not group members, firm level diversification has a positive impact on company value in Turkey for the period from 2005 to 2010.

CHAPTER 5
THE IMPACT OF DIVERSIFYING ACQUISITIONS
ON TURKISH ACQUIRER PERFORMANCE

The objective of this chapter is to shed light on the relationship between corporate diversification and firm value from a different perspective. In concluding that diversification destroys value, the prior literature implicitly assumes that single-segment firms are a valid benchmark for valuing the divisions of conglomerates. The main point of this chapter is that the excess value methodology for estimating the value effects of corporate diversification can be misleading if there are systematic differences between the divisions of conglomerates and the single-segment firms to which they are benchmarked. Failure to account for these differences can lead to incorrect inferences regarding the effect of corporate diversification on firm value.

To assess the extent to which these selection bias issues are important, we examine a sample of firms that expand via acquisition. Using an event study, we investigate the abnormal returns of the Turkish acquirer upon the announcement of acquisitions. Our objective is to investigate whether diversifying and non-diversifying acquisitions differ in terms of acquirer abnormal returns once other factors affecting returns have been controlled for.

The rest of the chapter is organized as follows. First we explain our data collection procedure and present summary statistics about the sample. Next, the methodology is described and univariate results are presented. Finally, control

variables to be used for multiple regression analysis are introduced and results are presented.

Data and Summary Statistics

Our analysis is based on acquisitions which were initiated by Turkish companies, listed on the Istanbul Stock Exchange (ISE), that were announced between January 2005 and December 2011. The list of these transactions was acquired from Dealwatch database whereas *İş Yatırım* (İş Investment) provided the daily stock price data. The official announcement date for each transaction relies on Dealwatch. We eliminated all transactions which do not fulfill the following conditions:

- The transaction was completed.
- The acquiring firm is a firm with headquarters in Turkey.
- The Turkish acquirer was listed on the ISE at least 250 trading days prior and 5 trading days after the announcement date.
- Stock data were available.
- In the period 250 trading days before or 250 trading days after the transaction announcement, the acquiring firm only announced the given transaction.

In case of multiple acquisitions by the same company, we take the largest one in terms of transaction value as long as it is not in the event window for another acquisition by the same company. Acquisitions in different years by the same company are considered separate events.

This sample selection procedure resulted in a total of one-hundred deals made by seventy-three companies.

Acquisitions are defined as “diversifying” when the first two-digits of the main industry code of the bidder and the target are not the same and “focused” when the first two-digits of the main industry code of the bidder and target are identical.

Table 17 below presents the frequency distribution of focused and diversifying acquisitions based on two-digit SIC codes.

Table 17. Distribution of Acquisitions by Year

<u>Year</u>	<u>Frequency</u>		
	Focused	Diversifying	Total
2005	6	2	8
2006	7	2	9
2007	10	8	18
2008	8	4	12
2009	9	6	15
2010	11	7	18
2011	10	10	20
Total	61	39	100

As shown on Table 17, the majority of the acquisitions occurred in the year 2011. Thirty-nine percent of the acquisitions are classified as diversified. No discernible pattern characterizes the two types of acquisition activity in Turkey throughout the 2005-2011 period.

Table 18 below displays the distribution of acquisitions according the industry in which the acquirer and target firms operate.

Table 18. Distribution of Acquisitions by Industry

<u>Acquirer Industry</u>	<u>Number of firms</u>	<u>Percentage</u>
Consumer Products and Services	1	1
Consumer Staples	15	21
Energy and Power	6	8
Financials	12	16
Healthcare	4	5
High Technology	2	3
Industrials	8	11
Materials	12	16
Media and Entertainment	3	4
Real Estate	1	1
Retail	4	5
Telecommunications	5	7
TOTAL	73	100
<u>Target Industry</u>	<u>Number of firms</u>	<u>Percentage</u>
Consumer Products and Services	5	5
Consumer Staples	14	14
Energy and Power	13	13
Financials	12	12
Healthcare	8	8
High Technology	9	9
Industrials	11	11
Materials	9	9
Media and Entertainment	4	4
Real Estate	2	2
Retail	9	9
Telecommunications	4	4
TOTAL	100	100

As Table 18 shows, the majority of the acquirer companies operate in the consumer staples sector (twenty-one percent) followed by financials (sixteen percent) and materials (sixteen percent). As for the targets, the majority operates in consumer staples sector (fourteen percent) followed by energy and power (thirteen percent) and financials (twelve percent).

Methodology

In line with previous literature, this study takes the form of an event study (Brown and Warner, 1985). The event is the announcement of an acquisition by a Turkish company listed on the ISE. As shown on figure 1 below, “normal” or “expected” returns are calculated over an estimation period prior to the event date, which will, in turn, be compared to the actual returns over several event windows. The difference between the two forms returns, i.e. abnormal returns, will be tested for significance. The time line for the event study is presented below.

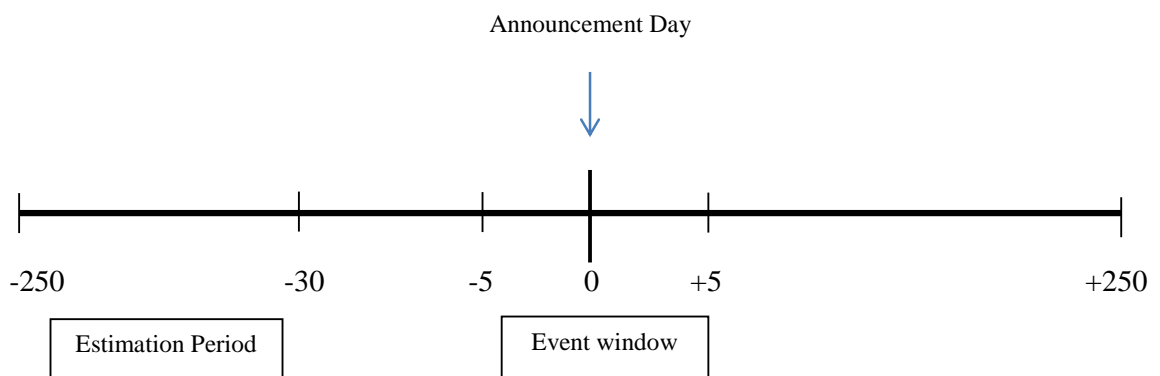


Fig. 1. Event study estimation periods and event windows

To calculate normal returns for a given stock, we first regress actual daily returns of the stock on the daily market returns, proxied by ISE-all shares index over the 220 day estimation period from t_{-250} through to t_{-31} where t_0 is the event day, i.e. the announcement of the acquisition. The estimation does not include the 30 days prior to the announcement date since information leakage within this range may have an effect on the share price, which can lead to incorrect estimates of the coefficients of

the market model. We use the Ordinary Least Squares (OLS) method to estimate the following equation:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (9)$$

where:

R_{it} is the return on stock i on day t ,

R_{mt} is the return on the market on day t ,

α_i is the intercept term in the relationship between individual stock return and market return,

β_i is the coefficient of the slope in the relationship between individual stock return and market return, and

ε_{it} is the error term.

The second step is to calculate the abnormal returns which are equal to the difference between actual returns and normal returns. Abnormal returns are calculated according to the following formula.

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (10)$$

where:

AR_{it} is the abnormal return for stock i on day t ,

R_{it} is the actual return for stock i on day t ,

R_{mt} is the return on the market on day t , and

α_i and β_i are the coefficient estimates from equation (9)

Then, the cumulative abnormal return (CAR) for each stock is calculated.

CAR is equal to the sum of the abnormal returns over the event window [m, n] and is given by the following formula.

$$CAR_i [m,n] = \sum_{t=m}^n AR_{it} \quad (11)$$

Having calculated the AR and CARs for each event, the next step is to get an average across a collection of events. The mean abnormal returns (AAR) on each specific day t , from which the cumulative average abnormal returns (CAAR) are calculated, are given by the following formula.

$$AAR_t = \sum_{i=1}^N (AR_{it} / N) \quad (12)$$

$$CAAR [m,n] = \sum_{t=m}^n AAR_t \quad (13)$$

where:

AAR_t is the average abnormal return on day t ,

AR_{it} is the abnormal return for stock i on day t ,

N is the number of events, and

$CAAR [m,n]$ is the average cumulative abnormal return over the event window [m,n]

Finally, t-statistics are calculated to check the statistical significance of AARs and CAARs.

Results

The average abnormal returns for days from -5 to +5 are given on Table 19, while average cumulative abnormal returns for selected event windows are given on Table 20 below.

Table 19. Average Abnormal Returns

<u>Day</u>	<u>AAR</u>	<u>Sign.</u>		
-5	0.37%	*		
-4	-0.07%			
-3	-0.25%			
-2	-0.05%			
-1	0.41%	**		
0	1.05%	***		
1	0.61%	**		
2	-0.20%			
3	0.04%			
4	0.15%			
5	-0.06%			
***, **, and * denote significance at 1%, 5% and 10% respectively				

Table 20. Average Cumulative Abnormal Returns

<u>Event window</u>	<u>CAAR</u>	<u>Sign.</u>		
[-5;+5]	2.00%			
[-2;+2]	1.82%			
[-1;+1]	2.07%	***		
[0;+1]	1.66%	**		
[-1;0]	1.47%	**		
***, **, and * denote significance at 1%, 5% and 10% respectively				

Table 19 shows that the daily abnormal return to the bidders on the announcement of the acquisition (day 0) is positive and statistically significant at the one percent level.

We also observe a positive and significant abnormal return on the day prior to the acquisition and a positive and significant abnormal return on the day following the acquisition. In addition, there is a positive and significant abnormal return on the day (-5).

Table 20 presents CARs over several event windows to capture the impact of pre-announcement leakage effects as well as post-announcement corrections. Over the event windows $[-1,+1]$, $[-1,0]$, and $[0,+1]$ there are positive and significant CAARs. Over the five-day $[-2,+2]$ and eleven-day $[-5,+5]$ event windows surrounding the acquisition, the CAARs are also positive but not statistically significant.

Overall, the evidence suggests that, at the time of the announcement, the Turkish market considers acquisitions as a value creating strategy as evidenced by positive abnormal returns to acquirers.

Multiple Regression Analysis

In order to test whether the CARs differ between diversifying and focusing acquisitions after controlling for deal and firm specific variables expected to affect acquirer returns, we perform a multiple OLS regression analysis.

The CAR for the $[-1;+1]$ period around the announcement date is used as the dependent variable in the regression. The following independent variables are included in the model.

Independent Variables

Diversifying vs. Focused Acquisitions

Since our main objective is to investigate whether diversifying acquisitions create value, we introduce a dummy variable, *DIVERS* which is equal to “1” if the first two-digits of the main industry code of the bidder and the target are not the same. If there exists a diversification premium, we would expect a positive coefficient for that variable. In case of a diversification discount, the coefficient would be negative.

Cross-Border vs. Domestic Acquisitions

Cross-border M&As may affect acquirer returns in different ways. On the one hand, the acquisition of a foreign target may provide competitive advantage to the bidder through the acquisition of valuable and unique resources such as technology management and marketing skills, production skills, patents etc. that complement and strengthen the firm’s resource base (Barney, 1991). On the other hand, the main disadvantage of cross-border M&As from the bidder’s perspective is the lack of country and firm specific knowledge of the foreign target firm that potentially would lead to unsuccessful acquisitions or wrong valuation of foreign targets. This is especially true in the cases where the foreign target has high levels of intangible assets (Reuer, Oded, & Ragozzino, 2004).

There are no clear empirical results confirming the shareholder wealth effects of the bidding firm due to domestic or cross-border takeover announcements. For instance, Doukas and Travlos (1988) presented evidence of positive abnormal returns

to US acquirers for international acquisitions. However, Datta and Puia (1995) reported no abnormal returns while Fatemi and Furtato (1998) documented small insignificant negative returns to shareholders of acquiring firms in cross-border acquisitions.

To investigate whether there is a cross-border effect in our sample, we introduce a dummy variable *INT* which is equal to “1” if the target is a foreign company, “0” otherwise.

Payment Type

When one firm acquires another, it can pay for the acquisition with cash (cash in exchange for shares), equity (a specified number of the acquirer’s shares for each target share), or some combination (loan notes, deferred payment, share and equity). The method of payment in takeovers has been suggested to be important for a number of reasons.

From a theoretical point of view, Jensen (1986) argues that acquisitions financed with cash will generate larger benefits than those accomplished through exchange of stocks because stock acquisitions are unlikely to motivate managers to use resources more efficiently. This theory is in line with the signaling hypothesis of information asymmetry presented in Myers and Majluf (1984), suggesting that the board of the bidder company will fund an acquisition by stock only if they believe their shares are overvalued. On the contrary, boards who believe that their stocks are undervalued will fund the takeover by other means such as cash or debt. Since target shareholders know this, and are not informed about the “true” value of the acquiring

firm, an adverse selection arises, and they reduce their estimate of the acquirer's value. The result is that target shareholders are not inclined to accept a stock offer.

In addition, Hansen (1987) argues that bidders, in the case of uncertainty in target valuation, make stock offers as they have a "contingency pricing effect" i.e. reduce overpayments because target shareholders share part of the risk if the bidder overpays when evaluating a stock offer.

Finally, an alternative tax-based hypothesis exists that favors stock offers. Cash acquisitions are considered as immediately taxable for the target firm shareholders. On the other hand, stock acquisitions in general are tax deferrable until the shares are sold. Consequently, in cash offers a larger premium is required to compensate for that additional tax burden for the target firm. (Travlos, 1987; Fuller, Netter, & Stegemoller, 2002).

Empirical research generally supports the hypothesis that shareholders of acquiring firms view cash offers more positively than stock offers. For instance, Travlos (1987), Fuller et al. (2002), and Moeller, Schlingemann, and Stulz (2003) found higher abnormal returns to bidders in cash acquisitions compared to stock acquisitions.

To investigate whether the method of payment has an impact on CARs, we use a dummy variable *PMT* which is equal to "1" for acquisitions paid with cash, "0" otherwise.

Cash Reserves of the Acquirer

Cash reserves can provide funds for investment opportunities. Firms often accumulate much more cash than they require for normal business operations. Jensen

(1986) argues that the presence of large free cash flows can compound a firm's agency problem by insulating managers from being monitored by external market forces. Managers at firms with more cash have more resources available to them and are more likely to engage on empire-building. Thus, they may use excess cash in making poor investments such as nonproductive acquisitions instead of distributing it to the firm's shareholders. As a result, an acquiring firm with excessive cash reserves may generate lower levels of abnormal returns. Yet, Moeller et al. (2004) do not find support for this hypothesis in the US context.

On the other hand, higher free cash flows can also proxy for better recent firm performance, which could be correlated with higher quality managers, who tend to make better acquisition decisions (Masulis, Wang, & Xie, 2007).

To investigate whether acquirer's cash reserves have an effect on abnormal returns, we use the variable *CASH* which is measured by total cash divided by total assets of the acquirer at the year-end before the acquisition.

Leverage of the Acquirer

Past studies argue that leverage can be used to limit managerial discretion and discourage managers from conducting empire building activities when they have excessive free cash flow (Stulz, 1990). Leverage would have a positive impact on the acquirer's announcement return because leverage would provide managers with the incentive to make more value maximizing acquisitions.

Leverage also provides incentives for managers to improve firm performance, since managers have to cede significant control to creditors and often lose their jobs

if their firms fall into financial distress. There is also evidence that leverage is related to a firm's takeover protection (Garvey & Hanka, 1999).

Following the existing literature, we include leverage as a control variable, *LEV*, defined as a firm's book value of short-term and long-term debt divided by its total assets at the end of the year preceding the acquisition.

Pre-bid Performance of the Acquirer

According to empirical studies, pre-bid acquiring firm performance, usually measured by price-to-earnings (P/E) or market-to-book (MTB) ratios, has a negative impact on abnormal returns. For instance, Rau and Vermaelen (1998) and Sudarsanam and Mahate (2003) use P/E and MTB ratios prior to the bid and assess their impact on bidder performance and find that high P/E acquirers receive significantly negative returns. The authors argue that glamour acquirers (i.e. high P/E or MTB) are overvalued on the basis of superior past performance. Value acquirers (i.e. low P/E or MTB), however, were subject to poor performance in the past and therefore forced to evaluate acquisitions more carefully.

Taking into account that high P/E or MTB ratios are generally regarded as positive (i.e. that companies are doing well), it seems surprising that acquirers perform particularly badly if their pre-bid performance is good. Hence, much research cites Roll (1986), who suggested a "hubris" explanation for acquisitions, stating that acquiring firm managers are unaware of how bad their acquisitions are. The main argument is that individual managers seem to become over-optimistic and misguided when their company has a strong market value.

Even though there seems to be no direct evidence that the hubris hypothesis is true, it remains the most likely explanation for the bad performance of glamour acquirers. There is evidence that acquirers with a high market value or bids made when the stock market is booming tend to perform badly. An alternative explanation could be that executives are under pressure to invest when their companies have a high market value. Competition among acquirers for targets could also be stronger during “hot” market periods, therefore allowing management less time for a careful evaluation of bid decisions.

To investigate whether pre-bid acquirer performance affects abnormal returns, we employ the variable *PE* which is equal to the stock price of the acquirer divided by its net income per share at the end of the year preceding the acquisition.

Size of the Acquirer

Studies such as Banz (1981) and Reinganum (1983, 1992) show that small firms consistently experience significantly larger risk-adjusted returns compared to larger firms. In a more recent study, Moeller et al. (2004) found robust evidence that bidder size is negatively correlated with acquirer return measured by announcement period CAR. They report a two percent higher announcement return for smaller acquiring firms irrespective of the form of financing and target type (public or private).

There are several possible reasons for such observations. First, managers of larger firms may suffer from managerial hubris (Roll, 1986) and may overpay. Second, larger firms tend to make acquisitions by stock, which typically sends a negative signal to the market. Finally, smaller firms are more likely to acquire private firms, thus having a favorable market reaction (Masulis et al., 2007).

Part of the previous literature also uses relative size of the acquiring firm compared to the target firm. Since we do not have data on the size of target firms in our sample, we only use *SIZE* defined as the natural logarithm of the acquirer's total assets at the year-end preceding the acquisition.

Target Type

Empirical studies generally report higher returns for private target acquisitions. For example, Chang (1998) reported higher abnormal returns for companies acquiring privately-held targets compared to those acquiring publicly-held targets. Fuller et al. (2002) found positive abnormal returns for subsidiary acquisitions, which are robust to different forms of payments. Hansen and Lott (1996) and Moeller et al. (2003) also found positive abnormal returns to bidders acquiring private targets.

Three reasons are given in the previous literature to explain these findings. The first reason involves the liquidity impact and limited competition. Compared to publicly-traded firms, buying and selling private firms and subsidiaries is more difficult. This lack of liquidity makes these investments less attractive and hence offers are generally lower for private firms. Thus, shareholders of bidding firms earn a higher return on such transactions (Fuller et al., 2002).

A second reason relates to the monitoring hypothesis. Firms acquiring privately held targets through common stock exchanges tend to create outside blockholders because a small shareholder group owns the targets. The creation of outside blockholders can serve as an effective monitoring device of management, which, in turn, can increase bidder returns (Chang, 1998).

A final reason concerns the portfolio preferences of investors. Hansen and Lott (1996) hypothesize that if investors are diversified, management's goal should be to maximize the value of the shareholder's portfolio, not to maximize shareholder value. Thus, when a public bidder acquires a public target, diversified shareholders who own stock in both firms should be indifferent to how the gains from the acquisitions are divided. Hence, the bidding firm's shareholders should not expect any abnormal return when acquiring a public firm.

To investigate whether the type of the target has an impact on CARs in our sample, we use a dummy variable *PUBLIC* which is equal to "1" for deals involving public targets, and "0" for private targets.

Table 21 below summarizes the independent variables that will be used in the multiple regression analysis.

Table 21. Variables

Deal characteristics	
<i>DIVERS</i>	Diversifying vs. focused acquisition: Dummy equal to 1 if the target and acquirer do not operate under the same two-digit SIC code
<i>INT</i>	Cross-border acquisition: Dummy equal to 1 if the target is not a Turkish company
<i>PMT</i>	Payment type: Dummy equal to 1 for cash payments
Acquirer's pre-bid characteristics (at the latest fiscal year end before the acquisition)	
<i>CASH</i>	Cash reserves of the acquirer: Cash / Total Assets
<i>LEV</i>	Leverage of the acquirer: Total Debt / Total Assets
<i>PE</i>	Performance of the acquirer: Price per share / Earnings per share
<i>SIZE</i>	Size of the acquirer: ln (Total Assets)
Target characteristics	
<i>PUBLIC</i>	Public vs. private target: Dummy equal to 1 if the target is a public company

Table 22 that follows provides descriptive statistics for the variables.

Table 22. Descriptive Statistics

	Total Sample (N=100)		Focused Acquisitions (N=61)	Diversifying Acquisitions (N=39)
	Mean	Std. Dev.	Mean	Mean
CAR (-1,1)	0,0207	0,0267	0,0002	0,0527
DIVERS	0,3900	0,4758	0,0000	1,0000
INT	0,1800	0,3318	0,2131	0,1282
PMT	0,2900	0,4598	0,1639	0,4872
CASH	0,0411	1,1427	0,0346	0,0512
LEV	0,3829	1,2698	0,3709	0,4017
PE	1,8993	2,5749	1,6367	2,3100
SIZE	6,6195	5,0934	6,7904	6,3522
PUBLIC	0,1900	0,3574	0,1967	0,1795

As can be seen from Table 22, the mean cumulative abnormal return over the three-day event window surrounding the acquisition is 2.07 percent. The mean CAR(-1,1) for diversifying acquisitions is equal to 5.27 percent while the mean CAR(-1,1) for focusing acquisitions is 0.02 percent. Thirty-nine percent of the acquisitions in our sample are classified as diversifying based on two-digit SIC codes. Eighteen percent of the acquisitions are cross-border and twenty-nine percent were financed with cash. The cash reserves of the acquirer firms divided by their total assets has a mean value of 0.0411 at the end of the year preceding the acquisition. The leverage of the acquirer has a mean of 0.3829 while the average P/E ratio for acquirers registers a mean of 1.8993. The mean acquirer size measured by the natural logarithm of its total assets is equal to 6.6195. Finally, nineteen percent of the target companies in the sample are public.

Multiple Regression Results

Table 23 below reports the results of the multiple regression analysis.

Table 23. Multiple Regression Results

Dependent Variable: CAR (-1,1)				
Method: Ordinary Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Sign.
<i>C</i>	0.0079	0.0083	0.9476	
<i>DIVERS</i>	0.1433	0.0584	2.4560	**
<i>INT</i>	0.3210	0.1344	2.3890	**
<i>PMT</i>	0.1134	0.0622	1.8240	*
<i>CASH</i>	-0.0097	0.0305	-0.3182	
<i>LEV</i>	0.0102	0.0166	0.6154	
<i>PE</i>	0.0536	0.0273	1.9642	*
<i>SIZE</i>	-0.0614	0.0504	-1.2180	
<i>PUBLIC</i>	-0.0120	0.0430	-0.2790	
Adjusted R-squared	0.0998			
Durbin-Watson stat	2.1873			
F-statistic	3.4021	***		
Number of observations	100			
***, **, and * denote significance at 1%, 5% and 10% respectively				

As shown on Table 23, the F-statistic is significant at the one percent level, indicating that there is statistically significant relationship between the dependent and explanatory variables. The Durbin-Watson statistic, which is approximately equal to 2 indicates no evidence of autocorrelation. Adjusted R-squared value is equal to 0.10.

The coefficient estimate for the variable *DIVERS* is positive and statistically significant at the five percent level, meaning that diversifying acquisitions generate higher abnormal returns compared to focused acquisitions. This finding supports the diversification premium documented using the excess value methodology, but only in the short term.

Among the control variables, the coefficient estimate for the variable *INT* is positive and statistically significant at the five percent level. Cumulative abnormal

returns are found to be higher for cross-border acquisitions, consistent with Doukas and Travlos (1988). The coefficient estimate for the variable *PMT* is also positive and significant at the ten percent level. This result means that acquirer CARs are higher for acquisitions made with cash and is line with previous literature (eg. Travlos, 1987; Fuller et al., 2002; Moeller et al., 2003). Finally, the variable *PE* has a positive and marginally significant coefficient. In contrast to the previous literature, we found that pre-bid performance of the acquiring firm, measured by its price-to-earnings ratio has a positive and significant impact on CARs. This result means that the managerial hubris hypothesis does not hold for the case of Turkish companies.

The estimates of the coefficients for the other control variables, *CASH*, *LEV*, *SIZE* and *PUBLIC* are not statistically significant meaning that the cash reserves, leverage and size of the acquirer and the type of the target do not have an effect on acquirer CARs.

CHAPTER 6

DISCUSSION AND IMPLICATIONS

The results of this study are helpful in extending our knowledge on the relationship between value and diversification of emerging market firms. According to our empirical results, the optimal organizational structure for firms operating in emerging markets seem to be different than that for firms operating in more developed countries since a diversification premium is observed in our sample, contrary to many developed country studies which document a diversification premium.

In this regard, our results provide support for the institution-based view of diversification (Khanna and Palepu, 1997; Peng & Delios, 2006; Lee et al., 2008). According to this view, different institutional environments significantly affect companies' optimal diversification strategy. In institutionally weak environments that are present in most emerging markets, the costs associated with diversification may outweigh the benefits, because diversified firms can imitate the beneficial functions of various market institutions that are present in developed countries but not in emerging economies.

Specifically, Khanna and Palepu (1997) explain that most emerging markets are characterized by imperfections in product, labor and financial markets. For instance, established brands are an important source of power for companies in emerging markets due to difficulty in disseminating information and inexistence of mechanisms to corroborate the claims made by the sellers. As a result, a conglomerate with a reputation for high quality products can use its name to succeed

in unrelated businesses. There are also problems in labor markets since most emerging economies suffer from scarcity of well-trained people. Diversified companies can create value by spreading the cost of professional development over the segments and creating their own internal market for labor. Finally, since equity markets are small and illiquid, the internal capital market created by divisions of conglomerate firms becomes advantageous. These imperfections in capital markets, product markets, and labor markets make it more difficult for focused firms to survive. Companies in emerging markets can overcome these “institutional voids” by diversifying at the firm level or through membership in industrial groups (Lins & Servaes, 2002).

In addition to imitating the institutions that are lacking in emerging markets, diversification may provide other important benefits. If the economic and legal environments make it more difficult to contract with other firms, it may be more beneficial to merge different segments within the same company than it is to have them operate on a stand-alone basis. Diversified firms or groups in these countries may also be better able to attract quality employees and better able to lobby or influence the political and regulatory process (Fauver et al., 2003).

While we do not address this issue directly, our results also indirectly suggest that global capital markets are not perfectly integrated. Firms in countries that have less developed capital markets seem to face a higher cost of external capital. One way to mitigate these higher costs is to create their own internal capital market by diversifying at the firm level.

Our results have important implications. For managers, optimal strategic actions in given country and time period may not be appropriate in other countries or different time periods in the same country. According to the empirical results of this

study, focus strategy often advised by consultants from developed countries does not seem appropriate for developing country firms. Thus, managers from emerging or less developed countries should not mistakenly narrow the scope of their operations upon advice from developed country consultants (Khanna & Palepu, 1997; Khanna & Rivkin, 2001).

From a public policy perspective, promoting diversification or the formation of business groups in emerging markets would constitute a better way of overcoming the shortage of key resources such as capital, human resources, and entrepreneurial talent. However, as market institutions evolve and competition increases, diversified companies or business groups may turn into “core rigidities” (Kim, Hoskisson, Tihanyi, & Hong, 2004). As institutional and competitive contexts evolve, so should strategy and structure of companies.

A corollary of this observation for policy-makers is that, the existence of highly diversified firms or business groups in a given country could be considered, to some extent, as a signal that the country lacks market-supporting institutions (Chen & Chu, 2010). Therefore, policy-makers should adopt the necessary reforms to increase the transparency and competitiveness of markets. As a result, firms might achieve significant benefits by reducing their transaction costs.

CHAPTER 7

CONCLUSION

The objective of this dissertation was to investigate the impact of corporate diversification on firm value in emerging markets with special emphasis on the Turkish case. To answer the research question, three different analyses were conducted.

First, the impact of corporate diversification on firm value was investigated using panel data from nine emerging markets including Brazil, Chile, Indonesia, Malaysia, Philippines, Poland, South Africa, and Turkey, for the period between 2005 and 2010. The excess value methodology developed by Berger and Ofek (1995) was employed. The estimation results for the fixed effects models revealed that diversified firms in these countries trade at a premium of 21.38 percent compared to single segment firms.

Overall, the results of the first analysis suggest that, in the sample of emerging markets analyzed in this study, diversified firms are valued more compared to single-segment firms operating in the same industry, providing support for weak form diversification premium. These empirical results are consistent with Claessens et al. (2000), Fauver et al. (2003), Khanna & Rivkin (2001), and Nachum (2004) who documented a diversification premium in developing countries for the 1990s. The results from several individual countries including China (Li & Wong, 2003; Yiu et al., 2005), India (Khanna & Palepu, 2000a; Ramaswamy et al., 2004), South Korea

(Lee et al., 2008), and Chile (Khanna & Palepu, 2000b) for 1990s, are also consistent with our results.

However, there is also evidence to the contrary. Using a sample of seven emerging markets Lins and Servaes (2002) documented a diversification discount for the year 1995. Also notable is the study of Indian firms by Singh et al. (2007) who find that diversified firms perform significantly worse than focused firms and that there exists a significant negative relation between the degree of diversification and firm performance for the years 1998-2000.

Second, in order to further analyze diversification-value relationship for Turkish firms, the moderating role of business group affiliation was investigated. Using data from 189 Turkish companies for the years 2005-2010, we found that firm level diversification is beneficial for Turkish firms but the result is valid only for the firms that do not belong to industrial groups. Among the non-group members, diversified companies trade at a premium of 10.14 percent compared to single segment firms. However, for group members, firm level diversification does not have a significant impact on value.

This evidence supports the argument that group members can capture the benefits of corporate diversification without having to diversify at the firm level. For firms that are group members, further diversification at the firm level is not beneficial. But for firms that are not group members, firm level diversification has a positive impact on company value.

These results partially support the evidence on industrial groups in Japan (Lins & Servaes, 1999) and in East Asian countries (Lins & Servaes, 2002). The coefficient estimate of the variable interacting group membership and diversification in both studies is negative and significant, meaning that the value impact of

diversification is more negative for group members compared to non-group members. However, contrary to our findings, the coefficient on the diversification variable was found to be insignificant. This result means that unless the firm belongs to an industrial group, diversification does not have any effect, either positive or negative, on company value.

Third, in order to analyze the results from a different perspective, 100 acquisition announcements made by Turkish firms between January 2005 and December 2011 were analyzed. Using the event study methodology, we found positive and significant cumulative abnormal returns around the announcement of acquisitions. In addition, CARs around the three day event window surrounding the acquisition were found to be higher for diversifying acquisitions compared to focused acquisitions. These results mean that at the time of announcement, the Turkish market considers diversifying acquisitions as a value increasing strategy and are consistent with semi-strong form of diversification premium.

The results of the event study are consistent with the results of Bhagat et al. (2011) who documented a diversification premium for acquirers from eight emerging markets. However, there is also evidence to the contrary. Cai (2004) did not find any diversification premium or discount for acquirers from East Asian countries. For the case of Turkey, Mandacı (2004) and Oelger and Schiereck (2011) reported similar findings to ours since acquirer returns were found to be positive around acquisition announcements. However, these two studies did not distinguish between diversifying and focused acquisitions.

The present study suffers from the following limitations: First, it does not distinguish between related and unrelated diversification. Several studies in the previous literature found that while unrelated diversification has an effect on firm

value, related diversification does not. This hypothesis could not be tested in this study due to inability of finding suitable benchmark companies in emerging markets.

Moreover, the excess value measure used as the dependent variable in the cross sectional analysis was only calculated based on sales. Asset or earnings based measures commonly used in the literature could not be employed since segment level data on these variables are missing for emerging markets.

Another limitation of the study is that business group affiliation, which is common in many emerging markets other than Turkey, was investigated only for Turkish firms. Future research can address this limitation by using group membership data from local sources and analyzing the moderating role of group membership on the diversification-value relationship in several emerging markets.

Future research can also investigate the role of agency costs and corporate governance in emerging markets for the relationship between diversification and firm value. This could not be accomplished in this study since the coverage of that type of data was very limited in the databases used for this study.

Finally, the event study analysis comparing the abnormal returns of acquirer firms upon the announcement of diversifying and focusing acquisitions was only conducted for Turkish firms since we did not have access to daily stock price data for other countries. As a result, the sample size was limited to one-hundred deals made by seventy-three companies. Future studies may conduct a similar analysis using data from several emerging markets in order to test the generalizability of the results across different countries. Another limitation of the event study is that it only investigates acquirer returns in the short term (over the eleven-day window around the acquisition). Future research can analyze the impact of acquisitions on bidder performance in the longer term. A last suggestion for further study would be to

investigate the firm-specific characteristics that differentiate diversifying acquirers from other companies.

APPENDIX A: DESCRIPTIVE STATISTICS BY COUNTRY

Table 24. Excess Value Statistics by Country

	Brazil			Chile			Indonesia		
	Mean		N	Mean		N	Mean		N
Diversified firms	0.2323	***	336	0.1729	***	240	0.1978	***	570
Single-segment firms	0.0679		546	-0.1474		198	-0.0495		780
Total Sample	0.1696		882	0.4104		438	0.1352		1350
	Malaysia			Philippines			Poland		
	Mean		N	Mean		N	Mean		N
Diversified firms	0.0252		330	0.3461	***	66	0.0159		444
Single-segment firms	0.0109		294	-0.2555		450	0.0126		636
Total Sample	-0.1316		624	0.2691		516	-0.0040		1080
	South Africa			Thailand			Turkey		
	Mean		N	Mean		N	Mean		N
Diversified firms	0.1163	**	348	0.0580	*	492	0.0802	***	354
Single-segment firms	-0.0137		384	-0.0789		1494	-0.0177		780
Total Sample	-0.1263		732	0.0241		1986	0.1569		1134
*** Significantly different from single segment firms at 1%.									
** Significantly different from single segment firms at 5%.									
* Significantly different from single segment firms at 10%.									

Table 25. Descriptive Statistics on Independent Variables by Country

	Brazil			Chile			Indonesia				
	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N		
<i>DH</i>	0.1305	0.2539	996	0.3470	0.3719	480	0.2898	0.3834	1494		
<i>D</i>	0.3434	0.4763	996	0.5500	0.5006	480	0.4016	0.4920	1494		
<i>INT</i>	0.4819	0.2148	996	0.3250	0.1118	480	0.2972	0.4579	1494		
<i>LEV</i>	0.2699	0.1808	979	0.1994	0.1454	480	0.2332	0.2364	1431		
<i>EBITSA</i>	0.1373	0.1864	921	0.1347	0.1570	420	0.0334	0.5432	1474		
<i>CAPEXSA</i>	0.0672	0.0875	902	0.1296	0.2078	462	0.0929	0.1559	1434		
<i>SIZE</i>	6.3802	2.1667	990	5.5030	2.1148	480	4.6510	1.8402	1482		
<i>ASSETS (mn. \$)</i>	3522.6550	11294.4900	990	1326.0900	3344.6380	480	451.0979	1013.3950	1482		
<i>SALES (mn. \$)</i>	2112.1010	5545.9530	990	823.8444	2207.0350	480	354.8345	714.1017	1482		
		Malaysia				Philippines				Poland	
	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N		
<i>DH</i>	0.3120	0.3405	654	0.0912	0.2340	570	0.2268	0.3256	1152		
<i>D</i>	0.5124	0.5018	654	0.1474	0.3564	570	0.3906	0.4903	1152		
<i>INT</i>	0.3670	0.1889	654	0.3053	0.1026	570	0.6250	0.2427	1152		
<i>LEV</i>	0.3112	0.1993	641	0.3662	0.1514	450	0.1550	0.2483	1085		
<i>EBITSA</i>	0.0922	0.1719	630	0.1629	0.2236	456	0.0465	0.1523	1092		
<i>CAPEXSA</i>	0.0701	0.0980	636	0.0903	0.1057	474	0.0661	0.1204	1092		
<i>SIZE</i>	5.0893	1.5942	654	4.3340	1.9603	564	4.0987	1.5685	1104		
<i>ASSETS (mn. \$)</i>	721.3362	1871.4120	654	354.6718	687.8686	564	374.0053	1672.0520	1104		
<i>SALES (mn. \$)</i>	630.4656	1703.3540	654	194.8173	358.6475	564	41.9635	114.6491	1110		
		South Africa				Thailand				Turkey	
	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N		
<i>DH</i>	0.2941	0.4533	762	0.1900	0.3680	2142	0.1105	0.2022	1158		
<i>D</i>	0.4488	0.5001	762	0.2437	0.4299	2142	0.3109	0.4641	1158		
<i>INT</i>	0.4076	0.1525	762	0.0980	0.2978	2142	0.4654	0.4970	1146		
<i>LEV</i>	0.2198	0.2109	724	0.1378	0.2182	2058	0.3356	0.1909	1128		
<i>EBITSA</i>	0.0646	0.1447	731	0.0947	0.1770	2106	0.0926	0.1930	1086		
<i>CAPEXSA</i>	0.0570	0.0665	754	0.0565	0.0787	2094	0.0652	0.1149	1134		
<i>SIZE</i>	5.2356	1.9548	750	4.4001	1.5676	2106	5.2171	1.6256	1158		
<i>ASSETS (mn. \$)</i>	189.6229	640.7938	738	507.7107	2568.1010	2106	708.1189	1615.3800	1158		
<i>SALES (mn. \$)</i>	1082.6980	2590.1040	744	569.0581	3591.0390	2112	700.9766	1811.4040	1158		

APPENDIX B: TURKISH COMPANIES

Table 26. Distribution of Turkish Companies by Industry

SIC code	Description	Campbell (1996) classification	Number of companies	Percentage
29	PETROLEUM REFINING AND RELATED INDUSTRIES	Petroleum	1	1
25	FURNITURE AND FIXTURES	Consumer durables	3	2
30	RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS		5	3
36	ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS, EXCEPT COMPUTER		13	7
37	TRANSPORTATION EQUIPMENT		10	5
50	WHOLESALE TRADE&DURABLE		3	2
55	AUTOMOTIVE DEALERS AND GASOLINE SERVICE STATIONS		1	1
10	METAL MINING		Basic industry	2
14	MINING AND QUARRYING OF NONMETALLIC MINERALS, EXCEPT FUELS	1		1
24	LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE	1		1
26	PAPER AND ALLIED PRODUCTS	8		4
28	CHEMICALS AND ALLIED	13		7
33	PRIMARY METAL INDUSTRIES	12		6
39	MISCELLANEOUS MANUFACTURING INDUSTRIES	2		1
20	FOOD AND KINDRED PRODUCTS	Food		21
54	FOOD STORES		5	3
16	HEAVY CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION-	Construction	1	1
32	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS		27	14
34	FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND TRANSPORTATION EQUIPMENT	Capital goods	2	1
35	INDUSTRIAL AND COMMERCIAL MACHINERY AND COMPUTER		4	2
38	MEASURING, ANALYZING AND CONTROLLING INSTRUMENTS AND RELATED PRODUCTS		1	1
42	MOTOR FREIGHT TRANSPORTATION AND	Transportation	1	1
45	TRANSPORTATION BY AIR		3	2
48	COMMUNICATIONS	Utilities	2	1
49	ELECTRIC, GAS, AND SANITARY SERVICES		6	3

Table 26. Distribution of Turkish Companies by Industry (continued)

SIC code	Description	Campbell (1996) classification	Number of companies	Percentage
22	TEXTILE MILL PRODUCTS	Textiles/trade	16	8
23	APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIAL		3	2
51	WHOLESALE		4	2
53	GENERAL MERCHANDISE STORES		1	1
56	APPAREL AND ACCESSORY STORES		1	1
59	MISCELLANEOUS RETAIL		1	1
80	HEALTH SERVICES	Services	1	1
27	PRINTING, PUBLISHING, AND ALLIED INDUSTRIES	Leisure	6	3
58	EATING AND DRINKING PLACES		1	1
70	HOTELS, ROOMING HOUSES, CAMPS, AND OTHER LODGING PLACES		6	3
79	AMUSEMENT AND RECREATION SERVICES		1	1
	TOTAL SAMPLE		189	100

REFERENCES

- Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The post-merger performance of acquiring firms: A re-examination of an anomaly. *The Journal of Finance*, 47(4), 1605-1621.
- Amihud, Y. & Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *The Bell Journal of Economics*, 12(2), 605-617.
- Anderson, R. C., Bates, T. W., Bizjak, J. M., & Lemmon, M. L. (2000). Corporate governance and firm diversification. *Financial Management*, 29(1), 5-22.
- Aron, D. (1988). Ability, moral hazard, firm size and diversification. *The RAND Journal of Economics*, 19, 72-87.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Banz, R. W. (1981). The relation between return and market value of common stocks. *Journal of Financial Economics*, 9(1), 3-18.
- Berger, P. G. & Ofek, E. (1995). Diversification's effect on firm value. *Journal of Financial Economics*, 37, 39-65.
- Benito-Osorio, D., Guerras-Martín, L. A., & Zuñiga-Vicente, J. A. (2012). Four decades of research on product diversification: a literature review. *Management Decision*, 50(2), 325-344.
- Bhagat, S., Malhotra, S., & Zhu, P.C. (2011). Emerging country cross-border acquisitions: Characteristics, acquirer returns and cross-sectional determinants. *Emerging Markets Review*, 12(3), 250-271.
- Bhide, A. (1990). Reversing corporate diversification. *Journal of Applied Corporate Finance*, 3(2), 70-81.
- Brost, M. A. & Kleiner, B. H. (1995). New developments in corporate diversification strategies. *Management Research News*, 18(3), 24-33.
- Brown, S. J. & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1), 3-31.
- Cai, X.S. (2004). *Ownership, control and acquirers' returns: preliminary evidence from East Asian companies* (Cornell Legal Studies Research Paper No: 04-038). Retrieved April 1, 2012, from <http://ssrn.com/abstract=625684>
- Campa, J. M. & Kedia, S. (2002). Explaining the diversification discount. *The Journal of Finance*, 57(4), 1731-1762.

- Campbell, J. Y. (1996). Understanding risk and return. *Journal of Political Economy*, 104(2), 298-345.
- Caves, R., Porter, M. E., & Spence, A. M. (1980). *Competition in the open economy*. Cambridge, MA: Harvard University Press.
- Chang, S. (1998). Takeovers of privately held targets, methods of payment, and bidder returns. *The Journal of Finance*, 53(2), 773-784.
- Chevalier, J. A. (2000). *Why do firms undertake diversifying mergers? An examination of the investment policies of merging firms* (University of Chicago Working Paper). Retrieved April 1, 2012, from <http://citeseer.ist.psu.edu/viewdoc/summary?doi=10.1.1.37.3779>
- Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. (2001). *The pattern and valuation effects of corporate diversification: A comparison of the United States, Japan and other East Asian Economies* (UNU-WIDER Research Paper No: DP2001/127). Retrieved April 1, 2012, from <http://EconPapers.repec.org/RePEc:unu:wpaper:dp2001-127>
- Comment, R. & Jarrell, G. (1995). Corporate focus and stock returns. *Journal of Financial Economics*, 37(1), 67-87.
- Daley, L., Mehrotra, V., & Sivakumar, R. (1997). Corporate focus and value creation: Evidence from spinoffs. *Journal of Financial Economics*, 45(2), 257-281.
- Datta, D. K & Puia, G. (1995). Cross-border acquisitions: An examination of the influence of relatedness and cultural fit on shareholder value creation in the US acquiring firms. *Management International Review*, 35(4), 337-359.
- Denis, D. J., Denis, D. K., & Sarin, A. (1997). Agency problems, equity ownership and corporate diversification, *Journal of Finance*, 52, 135-160.
- Denis, D. J. , Denis, D. K., & Yost, K. (2002). Global diversification, industrial diversification and firm value. *The Journal of Finance*, 57, 1951-1979.
- Desai, H. & Jain, P. C. (1999). Firm performance and focus: Long-run stock market performance following spinoffs. *Journal of Financial Economics*, 54(1), 75-101.
- Dey, T. & Banerjee, R. (2011). *Can corporate diversification promote firm value? A survey* (University of Munich Working Paper No. 28928). Retrieved April 1, 2012, from <http://mpa.ub.uni-muenchen.de/28928/>
- Dos Santos, M. B., Errunza, V. R., & Miller, D. P. (2008). Does corporate international diversification destroy value? Evidence from cross-border mergers and acquisitions. *Journal of Banking and Finance*, 32(12), 2716-2724.

- Doukas, J. & Travlos, N. G. (1988). The effect of corporate multinationalism on shareholders' wealth: evidence from international acquisitions. *The Journal of Finance*, 43, 1161–1175.
- Erdorf, S., Hartmann-Wendels, T., Heinrichs, N., & Matz M. (2011). *Corporate diversification and firm value: A survey of recent literature* (Cologne Graduate School Working Paper). Retrieved April 1, 2012, from <http://ssrn.com/abstract=1968977>
- Errunza, V. & Senbet, L. (1981). The effects of international operations on market value of the firm: Theory and evidence. *The Journal of Finance*, 36, 401-417.
- Errunza, V. & Senbet, L. (1984). International corporate diversification, market valuation, and size-adjusted evidence. *The Journal of Finance*, 39, 727-745.
- Fauver, L., Houston, J., & Naranjo, A. (2003). Capital markets development, international integration, legal systems, and the value of corporate diversification: A cross-country analysis. *Journal of Financial and Quantitative Analysis*, 38(1), 135-157.
- Fatemi, A. & Furtado, E. P. (1998). An empirical investigation of the wealth effects of foreign acquisitions. In S. Kouri & A. Ghosh (Eds.), *Recent developments in international banking and finance* (pp. 363–379). Cambridge, MA: Blackwell Publishing.
- Fleming, G., Oliver, B. & Skourakis, S. (2003). The valuation discount of multi-segment firms in Australia. *Accounting and Finance*, 43, 167–185.
- Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance*, 57(4), 1763-1793.
- Garvey, G. & Hanka, G. (1999). Capital structure and corporate control: the effect of state antitakeover laws on firm leverage. *The Journal of Finance*, 54, 519-546.
- Gönenç, H., Kan, O. B., & Karadağlı, E. D. (2007) Business groups and internal capital markets. *Emerging Markets Finance and Trade*, 43(2), 63–81.
- Gündüz, L. & Tatoğlu, E. (2003). A comparison of the financial characteristics of group affiliated and independent firms in Turkey. *European Business Review*, 15(1), 48-54.
- Graham, J. R., Lemmon, M. L., & Wolf, J. G. (2002). Does corporate diversification destroy value? *The Journal of Finance*, 57(2), 695–720.
- Greene, W. (2011). *Econometric Analysis* (7th ed.). Englewood Cliffs, NJ: Prentice Hall.

- Hansen, R. (1987). A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business*, 60, 75-96.
- Hansen, R. G. & Lott, J. R. (1996). Externalities and corporate objectives in a world with diversified shareholders/consumers. *Journal of Financial and Quantitative Analysis*, 31(1), 43-68.
- Harris, M., Kriebel, C.H., & Raviv, R. (1982). Asymmetric information, incentives and intrafirm resource allocation. *Management Science*, 28(6), 604– 620.
- He, X. (2009). Corporate diversification and firm value: Evidence from post-1997 data. *International Review of Finance*, 9(4), 359-385.
- Hubbard, R. G. & Palia, D. (1999). A reexamination of the conglomerate merger wave in the 1960s: An internal capital markets view. *The Journal of Finance*, 54, 1131–1152.
- Hyland, D. C. & Diltz, J. D. (2002). Why firms diversify: An empirical examination. *Financial Management*, 31(1), 51–80.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323-329.
- Jensen, M. C. & Murphy, K. J. (1990). Performance pay and top-management incentives. *The Journal of Political Economy*, 98(2), 225-264.
- John, K. & Ofek, E. (1995). Asset sales and increase in focus. *Journal of Financial Economics*, 37(1), 105–126.
- Johnston, J. & DiNardo, J. (1996). *Econometric methods* (4th ed.). Boston, MA: McGraw-Hill.
- Kaplan, S. N. & Weisbach, M. S. (1992). The success of acquisitions: Evidence from divestitures. *The Journal of Finance*, 47(1), 107–138.
- Kamuyu Aydınlatma Platformu [Public Disclosure Platform]. Data on ISE-traded companies. Retrieved March 2, 2012, from www.kap.gov.tr
- Kennedy, P. (2008). *A guide to econometrics* (6th ed.). Malden, MA: Blackwell Publishing.
- Khanna, T. & Palepu, K. (2000a). Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups. *The Journal of Finance*, 55(2), 867-891.
- Khanna, T. & Palepu, K. (2000b). The future of business groups in emerging markets, long-run evidence from Chile. *Academy of Management Journal*, 43(3), 268-285.

- Khanna, T. & Rivkin, J. (2001). Estimating the performance effects of business groups in emerging markets. *Strategic Management Journal*, 22(1), 45-57.
- Kuppuswamy, V. & Villalonga, B. (2010). *Does diversification create value in the presence of external financing constraints? Evidence from the 2008-2009 financial crisis* (Harvard Business School Working Paper). Retrieved April 1, 2012, from <http://www.hbs.edu/research/pdf/10-101.pdf>
- Lamont, O. (1997). Cash flow and investment: Evidence from internal capital markets. *The Journal of Finance*, 52, 83-109.
- Lang, L. H. P. & Stulz, R. M. (1994). Tobin's q , corporate diversification, and firm performance. *Journal of Political Economy*, 102, 1248-1280.
- Lee, K., Peng, M. W. & Lee, K. (2008). From diversification premium to diversification discount during institutional transitions. *Journal of World Business*, 43(1), 47-65.
- Leff, N. H. (1978). Industrial organization and entrepreneurship in the developing countries: The economic groups. *Economic Development and Cultural Change*, 26(4), 661-675.
- Lewellen, W. G. (1971). A pure financial rationale for the conglomerate merger. *The Journal of Finance*, 26(2), 521-537.
- Li, M. & Wong, Y. (2003). Diversification and economic performance: An empirical assessment of Chinese firms. *Asia Pacific Journal of Management*, 20(3), 243-265.
- Lins, K. & Servaes, H. (1999). International evidence on the value of corporate diversification. *The Journal of Finance*, 54(6), 2215-2239.
- Lins, K. & Servaes, H. (2002). Is corporate diversification beneficial in emerging markets? *Financial Management*, 31(2), 5-31.
- Lichtenberg, F. R. (1992). Industrial de-diversification and its consequences for productivity. *Journal of Economic Behavior and Organization*, 18, 427-438.
- Majd, S. & Myers, S. C. (1987). The effects of taxation on capital accumulation. In M. Feldstein (Ed.), *Tax asymmetries and corporate tax reform*. Chicago, IL: University of Chicago Press.
- Maksimovic, V. & Phillips, G. (2002). Do conglomerate firms allocate resources inefficiently across industries? Theory and evidence. *The Journal of Finance*, 57(2), 721-767.
- Maksimovic, V. & Phillips, G. (2007). Conglomerate firms and internal capital markets. In B.E. Eckbo (Ed.), *Handbook of corporate finance*. Amsterdam, North Holland: Elsevier.

- Mandacı, P. E. (2004). Şirketlerin birleşme ve satın alma duyurularının hisse senedi fiyatları üzerine etkileri [The impact of merger and acquisition announcements on stock prices]. *İktisat İşletme ve Finans*, 19, 118-124.
- Mansi, S. A. & Reeb, D. M. (2002). Corporate diversification: What gets discounted? *The Journal of Finance*, 57(5), 2167–2183.
- Martin, J. D. & Sayrak, A. (2003). Corporate diversification and shareholder value: a survey of recent literature. *Journal of Corporate Finance*, 9, 37-57.
- Martynova, M. & Renneboog, L. D. R. (2011). The Performance of the European market for corporate control: Evidence from the 5th takeover wave. *European Financial Management*, 17, 208-260.
- Masulis, R., Wang, C., & Xie, F. (2007). Corporate governance and acquirer returns. *The Journal of Finance*, 62(4), 1851-1889.
- Matsusaka, J. G. (1993). Takeover motives during the conglomerate merger wave. *RAND Journal of Economics*, 24, 357–379.
- Meyer, M. A., Milgrom, P., & Roberts, D. J. (1992). Organizational prospects, influence costs, and ownership changes. *Journal of Economics and Management Strategy*, 1(1), 9-35.
- Miller, D. J. (2006). Technological diversity, related diversification, and firm performance. *Strategic Management Journal*, 27(7), 601–619.
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2003). *Do shareholders of acquiring firms gain from acquisitions?* (Dice Center Working Paper No: 2003-4). Retrieved April 1, 2012, from <http://ssrn.com/abstract=383560>
- Moeller, S. B., Schlingemann, F. P. & Stulz, R. M. (2004). Firm size and the gains from acquisitions, *Journal of Financial Economics*, 73(2), 201-228.
- Morck, R., Shleifer, A., & Vishny, R. W. (1990). Do managerial objectives drive bad acquisitions? *The Journal of Finance*, 45(1), 31–48.
- Morck, R. & Yeung, B. (1991). Why investors value multinationality? *Journal of Business*, 64, 165-187.
- Morgan, A., Nail, L. A., & Megginson, W. L. (2000). *Changes in corporate focus, ownership structure, and long-run merger returns* (University of Alabama at Birmingham Working Paper). Retrieved April 1, 2012, from <http://ssrn.com/abstract=250993>
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics*, 13(2), 187-221.

- Nachum, L. (2004). Geographic and industrial diversification of developing country firms. *Journal of Management Studies*, 41(2), 273-294.
- Palich, L. E., Cardinal, L. B., & Miller, C. C. (2000). Curvilinearity in the diversification-performance linkage: An Examination of over three decades of research. *Strategic Management Journal*, 21, 155–174.
- Purkayastha, S., Manolova, T. S., & Edelman, L. F. (2012). Diversification and performance in developed and emerging market contexts: A review of literature. *International Journal of Management Reviews*, 14(1), 18-38.
- Ramaswamy, K., Li, M., & Petit, B. S. P. (2004). Who drives unrelated diversification? A study of Indian manufacturing firms. *Asia Pacific Journal of Management*, 21(4), 403-423.
- Rau, P. R. & Vermaelen, T. (1998). Glamour, value and the post-acquisition performance of acquiring firms. *Journal of Financial Economics*, 49(2), 223-253.
- Reinganum, M. R. (1983). Portfolio strategies based on market capitalization. *Journal of Portfolio Management*, 9(2), 18-28.
- Reinganum, M. R. (1992). A revival of the small-firm effect. *Journal of Portfolio Management*, 18(3), 55-62.
- Reuer J, Oded, J. S., & Ragozzino, R. (2004). Mitigating risk in international mergers and acquisitions: The role of contingent payouts. *Journal of International Business Studies*, 35, 9-32.
- Roll, R. (1986). The hubris hypothesis of corporate takeovers. *Journal of Business*, 59, 197–216.
- Rotemberg, J. & Saloner, G. (1994). Benefits of narrow business strategies. *American Economic Review*, 84(5), 1330–1349.
- Saloner, G. (1987). Predation, mergers, and incomplete information. *RAND Journal of Economics*, 18, 165–186.
- Scherer, F. M. (1980). *Industrial market structure and economic performance*. Chicago, IL: Rand McNally.
- Schiereck, D. & Oelger, M. (2011). Cross-Border M&A and international stock market integration: Evidence from Turkey. *International Journal of Economic Research*, 2(3), 40-55.
- Schipper, K. & Thompson, R. (1983). Evidence on the capitalized value of merger activity for merging firms. *Journal of Financial Economics*, 11, 85–119.
- Schoar, A. (2002). Effects of corporate diversification on productivity. *The Journal of Finance*, 57(6), 2379-2403.

- Servaes, H. (1996). The value of diversification during the conglomerate merger wave. *The Journal of Finance*, 51(4), 1201–1225.
- Shin, H. H. & Stulz, R. M. (1998). Are internal capital markets efficient? *Quarterly Journal of Economics*, 113(2), 531–552.
- Shleifer, A. & Vishny, R. W. (1989). Management entrenchment: the case of manager-specific investment. *Journal of Financial Economics*, 25, 123-139.
- Shleifer, A. & Vishny, R. W. (1992). Liquidation values and debt capacity: A market equilibrium approach. *The Journal of Finance*, 45, 379-396.
- Sicherman, N. & Pettway, R. (1987). Acquisition of divested assets and shareholder wealth. *The Journal of Finance*, 42, 1261-1273.
- Singh, M., Nejadmalayeri, A., & Mathur, I. (2007). Performance impact of business group affiliation: An analysis of the diversification-performance link in a developing economy. *Journal of Business Research*, 60(4), 339–347.
- Stein, J. C. (1997). Internal capital markets and the competition for corporate resources. *The Journal of Finance*, 52, 111-133.
- Stulz, R. M. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics*, 26, 3–27.
- Sudarsanam, S. & Mahate, A. A. (2003). Glamour acquirers, method of payment and post-acquisition performance: the UK evidence. *Journal of Business Finance and Accounting*, 30, 299–341.
- Sudarsanam, S., Holl, P., & Salami, A. (1996). Shareholders wealth gains in mergers: Effect of synergy and ownership structure. *Journal of Business Finance and Accounting*, 23, 673-698.
- Teece, D. J. (1980). Economies of scope and the scope of the enterprise. *Journal of Economic Behavior & Organization*, 1(3), 223-247.
- Teece, D. J. (1982). Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior & Organization*, 3(1), 39-63.
- Travlos, N. G. (1987). Corporate takeover bids, methods of payment and bidding firms' stock returns. *The Journal of Finance*, 42, 943–963.
- Villalonga, B. (2000). *An empirical analysis of diversification motives* (Unpublished Manuscript, UCLA).
- Villalonga, B. (2003). *Research roundtable discussion: the diversification discount* (Social Science Research Network Working Paper). Retrieved April 1, 2012, from <http://ssrn.com/abstract=402220>

- Villalonga, B. (2004a). Does diversification cause the ‘diversification discount’? *Financial Management*, 33(2), 5–27.
- Villalonga, B. (2004b). Diversification discount or premium? New evidence from the Business Information Tracking Series. *The Journal of Finance*, 59(2), 479–506.
- Walker, M. (2000). Corporate takeovers, strategic objectives and acquiring firm shareholder wealth. *Financial Management*, 20, 53–66.
- Wernerfelt, B. & Montgomery, C. A. (1988). Tobin’s q and the importance of focus in firm performance. *American Economic Review*, 78, 246–250.
- Whited, T. M. (2001). Is it inefficient investment that causes the diversification discount? *The Journal of Finance*, 56(5), 1667–1691.
- Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications*. New York, NY: Collier Macmillan Publishers.
- Wulf, J. (1998). *Influence and inefficiency in the internal capital market: Theory and evidence* (Wharton School, University of Pennsylvania Working Paper). Retrieved April 1, 2012, from <http://knowledge.emory.edu/papers/425.pdf>
- Yiu, D., Bruton, G., & Lu, Y. (2005). Understanding business group performance in an emerging economy: Acquiring resources and capabilities in order to prosper. *Journal of Management Studies*, 42(1), 183–206.
- Yurtoğlu, B. B. (2000). Ownership, control and firm performance of Turkish listed firms. *Empirica*, 27(2), 193–222.