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# Characteristics of Property-Liability Insurance Acquisition Targets

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**Abstract:** This study analyzes the impact of diversification and focus strategies on firms targeted for acquisitions. Based on a sample of acquisitions of property-liability insurers from 1993 to 1997, the study centers on two major questions: (1) whether the diversification or focus decision of the acquirer has an impact on the motivations underlying the selection of a target firm with specific operational and capitalization traits, and (2) whether the target firms are systematically altered on the basis of the diversification or focus aspect of the acquisition. The study finds support for the hypothesis that acquirers select firms with the financial and operational characteristics to meet the diversification or focus needs of the acquirer. The study does not find support for the hypothesis that acquirers systematically alter the capitalization or operational characteristics of a target firm on the basis of the diversification or focus aspect of the acquisition. By controlling for potential self-selection bias and by implementing a definition of diversification and focus that controls for relatedness of the lines of business of the acquirers and targets, the paper is able to extend prior literature in the area. Additionally, the ability to track the financial and operational changes of the target firm following the acquisition allows for a more detailed test of the hypotheses than is possible in multi-industry samples. [Keywords: property-liability insurance, self-selection bias, acquisitions, targets, diversification, focus]

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## INTRODUCTION

The property-liability insurance industry experienced a sharp increase in the number of acquisitions in the 1990s. An examination of the acquisition activity between 1993 and 1997 reveals the presence of both diversification and focus acquisitions.<sup>1</sup> In this paper, diversification and focus strategies are based on changes in business mix resulting from

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acquisitions of property-liability insurers. This definition captures both diversification into a new industry and diversification within the same industry.<sup>2</sup> During the sample period, there were 92 diversification and 36 focus transactions. Increased acquisition activity in the insurance industry and regulatory changes in the financial services area make the property-liability insurance industry an appropriate setting to analyze the implications of diversification and focus strategies.

The importance of the impact of diversification and focus is heightened in the era of financial services deregulation. The question of whether the diversification or focus targets are systematically altered in a way that significantly affects the insolvency risk and/or the performance is important to all stakeholders. In situations where the target firm continues to operate as a distinct entity, the potential for wealth expropriation and other changes in the financial condition of the firm are of interest not only to the policyholders of the target firm, but also to the regulators governing the transactions, and other insurers in the marketplace. For this reason, the impact of the diversification and focus strategies is analyzed with regard to the target firm rather than at the level of the parent company.<sup>3</sup>

Two primary questions related to the implications of diversification and focus are addressed in this paper. First, is the selection of a specific type of target firm related to the diversification or focus strategy of the acquirer? Second, do the acquirers systematically alter the operations or capitalization of the target depending on the strategy used? The study sheds light on the implications of diversification and focus for the target firms. It also helps to resolve conflicting results in prior studies related to motivations for mergers and acquisitions.

The study enhances the prior literature related to diversification and focus in several ways. First, in contrast to studies that look at trends toward diversification or focus over time, this study analyzes the strategies together in the same time period and industry, thereby reducing the confounding effects from differences in industries and economic periods. Previous studies examining the impact of diversification and focus strategies have produced varying results depending on the time period and sample studied.

Secondly, prior work has centered on either the motivations for diversification and focus strategies or the impact of the strategies. This study employs a treatment-effects methodology that empirically links the motivation underlying the selection of diversification or focus targets to the impact of the decision on the acquired firm. This controls for potential endogeneity between the selection of a diversification versus focus target and the impact of that selection on the acquired firm.<sup>4</sup>

While the use of a single industry does limit the potential generalizability of the results, in this case it offers significant advantages. For example, reporting regulations require that insurers submit detailed financial data at the subsidiary level even after the firm is acquired. This allows us to track changes in the target firms both before and after the acquisition. Because of data restrictions in most industries, studies of multiple industry samples typically infer that if a highly-liquid firm were targeted for acquisition, then the acquiring firm would remove liquidity from the target following the transaction. Normally, one would have to accept this reasoning or infer its reality from the changes in the acquirer's liquidity after the acquisition. In this study, the liquidity and other financial and operational characteristics of the target can be accurately measured both before and after the acquisition.

Additionally, detailed data related to premiums written by line of business allow for the use of a more refined definition of diversification and focus. The definition utilized in this study allows for the detection of both diversification into the property-liability insurance industry and diversification within the industry. The ability to control for changes in the concentration level of firms operating in related lines of business is important in creating an accurate categorization of diversification and focus. Finally, as discussed in Berger, Cummins, Weiss, and Zi (2000), both conglomeration and strategic focus strategies persist among financial firms in the US insurance industry.<sup>5</sup> The coexistence of these two strategies in a single industry provides an optimal setting to investigate the implications of diversification and focus strategies.

The remainder of the paper is organized as follows. The second section provides a brief review of the prior literature and background for the study. The third section provides a discussion of the data, methodology, and hypotheses used in the study. The results and conclusions of the paper are presented in the final sections.

## **BACKGROUND AND PRIOR LITERATURE**

The major research questions in the study relate to the impact of diversification and focus strategies. For this reason, the diversification and focus literature is discussed in terms of (1) overall findings relating to value-enhancing characteristics of the strategies in different periods, (2) costs and benefits of each strategy, (3) prior definitions of diversification, and (4) methodologies used to study diversification and focus. In the current study, acquisitions are used as the diversifying or focusing event. For this reason, the merger and acquisition literature related to identifying

an acquirers' motivations and to developing a framework to assess the impact of the acquisition are reviewed.

## Diversification and Focus Literature

Prior work typically looked at trends toward diversification or focus rather than comparing the strategies in the same time period and economic environment. Depending on the time period and sample studied, researchers have found seemingly contradictory results on the value-enhancing potential of diversification and focus strategies. For example, authors found value-enhancing results for diversification in studies based on sample periods in the late 1960s and early 1970s (Berger and Ofek, 1995; Lang and Stulz, 1994). Studies based on more current samples have shown that corporate focus increases firm value (Comment and Jarrell, 1995; John and Ofek, 1995; Denis, Denis, and Sarin, 1997). The sample used in this study has a mix of diversification and focus acquisitions in the same time period. By examining the strategies in the same industry and economic timeframe, a direct comparison can be created.

In many ways, the decision to diversify has the same implications and motivations as the decision to hedge. Both diversification and hedging strategies provide a means for the firm to smooth earnings. This reduction in earnings volatility has significant benefits. For example, as Smith and Stulz (1985) suggest, hedging may be done in an effort to minimize the impact of a convex tax structure. Additionally, hedging strategies can be used to increase debt capacity, as documented by Stulz (1996), Leland (1998), and Graham and Rogers (2002).

According to prior studies, the major benefits of diversification are driven by motivations to smooth earnings in order to (1) achieve tax benefits (Smith and Stulz, 1985), (2) support reduced levels of liquidity, and/or (3) support increased levels of debt (Lewellen, 1971). Firms have been purported to diversify into new areas to develop future core competencies (Milbourn, Boot, and Thakor, 1999). Diversification strategies, however, are not without costs, including increased agency costs (Denis, Denis, and Sarin, 1997). These costs stem from more complex organizational structures and increased levels of managerial discretion. The costs and benefits of focus strategies tend to be the inverse of diversification strategies. John and Ofek (1995) find that focusing firms can remove negative synergies and better allocate resources to core operations. Fixed costs may be reduced through corporate focus (Morck and Yeung, 1998). However, focusing firms may lose the benefits of smoother earnings, such as lower taxes, lower leverage, and higher liquidity. These issues are incorporated in the analysis of the acquirer's motivations in selection of a target firm. While the costs and benefits for the strategies are often offsetting, Berger

et al. (2000) provide evidence that for some firms, the conglomeration hypothesis dominates and for other firms the strategic focus hypothesis dominates. Their paper provides initial evidence for why two competing strategies such as diversification and focus strategies are both viable in the long run.

This study refines the traditional definition of diversification and focus to measure the impact of changes in business mix resulting from the transaction. Much of the prior research in this area has relied on definitions based on SIC codes or firm descriptions (e.g., Hubbard and Palia, 1999; Servaes, 1996). These studies are unable to capture diversification aspects of acquisitions in which the target and acquirer operate in the same SIC code.

Firms operating within the same industry classification may still have very different types of business in terms of risk, investment horizons, and levels of managerial discretion. In the property-liability industry, where different lines of business have very different traits, this is critical. This study uses data on the revenues in various lines of insurance business to construct a more detailed measure of diversification and focus.<sup>6</sup> The more refined definition utilized in this study reclassifies approximately half of the acquisitions that prior studies would have classified as focus transactions.<sup>7</sup> By accurately incorporating business mix into the definition, we are able to detect diversification into the industry, as well as diversification within the industry. This definition creates a more precise categorization, thus removing noise related to misclassification.

Additionally, this study builds on recent work in diversification that analyzes the potential for selection bias in the diversification literature. These new studies investigate the idea that the purported "diversification discount" or "value-destroying" nature of diversification is actually the result of selection bias rather than aspects of diversification strategies (e.g., Campa and Kedia, 2001; Chevalier, 2000; Graham, Lemmon, and Wolf, 2002; Lamont and Polk, 2002). For example, Graham, Lemmon, and Wolf (2002) find in their sample that half or more of the reduction in excess value for diversification events is due to firms acquiring already-discounted business units, rather than because combining firms destroys value. Additionally, Lamont and Polk (2002) comment that when firms endogenously choose to become more diversified, their excess value declines as well. However, they note that selection biases and endogenous diversifying behavior are not entirely responsible for the diversification discount. The results in Campa and Kedia (2001) indicate that the diversification discount always drops, and sometimes turns to a premium, when the endogeneity of the diversification decision is controlled for.

Our paper furthers the investigation of selection bias in diversification studies through the use of a treatment effects model. The methodology is designed to control for selection bias or the potential endogeneity between the selection of a diversification or focus target and potential changes in the target surrounding the acquisition. This approach provides a more precise test of the impact of the diversification strategy on the performance and capitalization of the target firms. The framework also provides a means to investigate how the target firms are affected by the diversification or focus strategy of the acquirer.

## **Mergers and Acquisitions**

The merger and acquisition literature is used to construct a framework to analyze the implications of diversification and focus acquisitions. Two major portions of the merger and acquisition literature are examined. The first centers on establishing the acquirers' motivations for mergers and acquisitions. The second portion of the literature involves assessing the impact of the acquisition on the target firm.

It is common for studies to identify the motivations for acquisitions on the basis of the pre-acquisition characteristics of the target firms.<sup>8</sup> In these studies, the motivations of the acquirer are inferred from the pre-acquisition traits of the targeted firms. In our framework, the same process will be used to investigate the potentially differing motivations of diversifying and focusing acquirers.

An analysis of this literature reveals a series of competing hypotheses related to the ideal capitalization and operational characteristics of target firms in acquisitions. For example, both high and low levels of liquidity have been suggested to be preferred traits of the target firms. Empirical studies have found support for both hypotheses. These conflicting hypotheses and results exist for traits such as liquidity, efficiency, leverage, and overall financial strength. The differing needs of acquirers in diversification and focus transactions provide a potential explanation for these inconsistencies. For example, in focus acquisitions, acquirers operating in similar lines of business have an increased ability to improve the operational efficiency of a target firm following the acquisition as a result of decreased levels of asymmetric information. Thus, focus acquirers are hypothesized to be more apt to select targets with lower pre-acquisition levels of operational efficiency than diversification acquirers.

In addition to the motivations for the selection of merger and acquisition targets, prior studies have investigated the impact of mergers and acquisitions in various ways. In the case of samples based on acquisitions in which the financial and operational traits of the target are not observable following the acquisition, researchers have inferred results are based on

pre-acquisition characteristics and/or the changes in the acquirer's financial and operational traits following the acquisition. In cases such as insurance and banking research where the post-acquisition traits of the firms are available, the impact of diversification and focus acquisitions can be measured through an analysis of changes in the target firms surrounding the acquisitions. The ability to track changes in the target firm is particularly important in the insurance industry, where stakeholders have a continued interest in the solvency and performance of the target firm even after the acquisition.

Changes in the firms have been tracked by both accounting- and market-based measures. Market-based measures are not suitable for this study because of the limited number of publicly-traded target firms relative to the total number of target firms.<sup>9</sup> This stems from the large number of insurers that are organized as either closely-held stock or mutual firms. For this reason, the impact of the acquisitions is measured through changes in accounting-based measures. Several studies have utilized accounting-based measures of capitalization and/or performance measures taken before and after the acquisition to analyze the impact of mergers and acquisitions (e.g., Chamberlain, 1998; Chamberlain and Tennyson, 1998; Cornett and Tehranian, 1992; Healy, Palepu, and Ruback, 1992; and Pilloff, 1996).

## **DATA, METHODOLOGY, AND HYPOTHESES DEVELOPMENT**

### **Data and the Definition of Diversification and Focus**

The study is based on acquisitions of property-liability insurers from 1993 to 1997 as provided in the *Best's Review—Property Casualty Edition* listing of corporate changes. The required financial data come from the *National Association of Insurance Commissioners (NAIC) Property-Casualty Database*, the *NAIC Life/Health Database*, and the *Compustat Database*.

The definition of diversification and focus is based on the business mix of the acquirer and target firms. For this reason, the target firms must be identifiable in the *NAIC Database* and the characteristics of the acquiring firm must be available from the *NAIC Database*, *Compact Disclosure*, *Dunn and Bradstreet Million Dollar Database*, or *Lexis-Nexis*. When classifying the acquisitions as either diversification or focus, multiple acquisitions by a single acquirer on a given date are considered to be one acquisition regardless of the number of target firms. In these cases, the line-of-business data

for the group of target firms are aggregated to determine the business mix of the entire target group.

Diversification acquisitions are defined as (1) acquisitions by non-property-liability insurer acquirers and (2) acquisitions by property-liability insurer acquirers in which the acquirer's line-of-business concentration decreases following the acquisition. Acquisitions by property-liability insurers in which the acquirer's level of concentration increases following the acquisition are defined as focus acquisitions. Changes in concentration are measured by changes in a Herfindahl index based on the insurer's lines of business written in the year prior to the acquisition.<sup>10</sup> The Herfindahl index is created using 14 line-of-business types. The 14 types of business are based on a grouping of 26 lines of business written by insurers. The lines of business written are grouped according to similar characteristics in managerial discretion and underwriting risk. This is done in an effort to prevent bias in the measure due to the effects of lines of business that are rarely significant parts of an insurer's book of business. It also allows some control for movement in and out of similar lines of business where the firm may have some expertise because of similar underwriting and loss characteristics of the lines. According to this definition, the ultimate sample includes 36 focus targets and 92 diversification targets.<sup>11</sup> This is significant when one considers that using prior definitions of diversification, in which only acquisitions by non-property-liability insurer acquirers would be classified as diversification acquirers, our sample would have included 107 focus acquisitions and 21 diversification acquisitions.<sup>12</sup>

## Empirical Framework and Methodology

As mentioned previously, two major questions are addressed in the study. The first is concerned with the potentially differing motivations related to diversification and focus acquisitions. The second investigates

**Table 1.** Diversification and Focus Acquisitions by Year

	Diversification	Focus
1993	9	6
1994	11	6
1995	20	7
1996	23	8
1997	29	9
Total	92	36

the impact of that decision on the target firm. On the basis of these questions, the following system of two equations is estimated:

$$DIV_i = \alpha + \sum \beta X_i + \varepsilon_i \quad (1)$$

$$\Delta \text{Performance or Capitalization} = \alpha + \beta_1 DIV + \sum \beta Y_i + \varepsilon_i \quad (2)$$

where,  $DIV = 1$  if the acquisition is a diversification acquisition,  
 $X$  = a vector representing the target's traits prior to the acquisition,  
 $Y$  = a vector of control variables representing the changes in the target firm's specific traits surrounding the acquisition.

The selection of a firm as a target in a diversification or focus acquisition and the impact of that acquisition are not isolated events. For this reason, the models are estimated using a treatment effects methodology. This methodology is designed to control for self-selection bias or the presence of endogeneity between the characteristics that make a firm likely to be acquired in a diversification or focus acquisition and the characteristics that affect the target's change in performance and capitalization surrounding the event. The treatment effects approach is suggested by Greene (1993) to correct for this potential bias. The methodology is similar to a Heckman two-step estimation procedure. The principal difference is that none of the observations in the first-stage decision equation are removed in the second stage of the analysis. As discussed in Greene (1993), in a treatment effects model, a decision equation is estimated and an inverse Mill's ratio is calculated for each observation on the basis of the results of that model. The inverse Mill's ratio is then included in the second equation as an additional regressor to correct for potential bias in the equation.<sup>13</sup> In this framework, if the two equations are estimated separately, the coefficient on the diversification and focus dummy in the second equation may be biased. This will occur if the pre-acquisition characteristics of the targets that make them more likely to be selected in diversification or focus acquisitions normally would cause a change in the performance and capitalization measures modeled in the second equation.

## Hypotheses Development

Given the two-stage framework, two primary sets of hypotheses are developed. The first set centers on the motivations for the selection of diversification or focus targets. The second set centers on the impact of that decision.

### *Motivations for the Selection of Diversification and Focus Targets*

Conflicting hypotheses related to the desired financial and operational characteristics of a target firm have been developed in previous studies. By partitioning the sample into diversification and focus targets, a clearer picture of the potentially differing underlying motivations of acquirers using these strategies is developed. As with prior merger and acquisition literature, the motivations of the acquirer are assessed on the basis of the characteristics of the target firms. Traditional motivations for selection of targets are analyzed with respect to the hypothesized impact of the diversification and focus strategy. In addition to a better understanding of the motivations of the acquirers, this process gives us a reference point from which to judge potential changes in the targets after the acquisition.

**Leverage**—The financial and underwriting leverage of the target firms provides an assessment of the capitalization and growth potential of the target.<sup>14</sup> Both high and low levels of financial leverage have been classified as preferred pre-acquisition traits of target firms. If the acquiring firm is seeking an unexploited source of leverage, non-highly levered firms may be desirable targets (Meador, Madden, and Johnston, 1986). Chamberlain and Tennyson (1998) suggest that if acquisitions occur to reduce the financial constraints of the target firm, then high levels of leverage are associated with targets. Similarly, BarNiv and Hathorn (1997) find that insurers are more likely than non-insurers to acquire financially troubled insurers. Financial leverage is defined as reserves to surplus, while underwriting leverage is measured by the target's premiums to surplus.

**Liquidity**—In acquisitions in which the firm is selected to remove its financial constraints, thereby improving the profitability of the firm, the acquired firm will have relatively low pre-acquisition levels of liquidity (Chamberlain and Tennyson, 1998). However, if the acquirer is seeking liquid assets to reduce its own levels of leverage or to finance current projects, then target firms with high levels of liquidity are preferred (Meador, Madden, and Johnston, 1986; Norgaard and Crary, 1970). As suggested before, focus acquisitions are expected to be associated with acquisitions seeking to remove the financial constraints of the targets. Thus, lower levels of liquidity are hypothesized to be related to focus targets. As with Cummins, Tennyson, and Weiss (1999), the ratio of cash and invested assets to liabilities is used to measure the liquidity of the target firm.

**Efficiency**—Several authors have suggested that acquirers target less-efficient firms in the hopes of achieving increased returns by improving the efficiency of the targets following the acquisitions (Chamberlain and Tennyson, 1998; Norgaard and Crary, 1970; Meador, Madden, and Johnston, 1986). The acquirers in the focus group are more apt to have the technical knowledge to achieve this goal given their knowledge and

experience in the business operations of the target. Cummins, Tennyson, and Weiss (1999) suggest, however, that life-insurance acquirers may be motivated to select more efficient firms in an effort to acquire competencies in a changing market. Similarly, Milbourn, Boot, and Thakor's (1999) banking study suggests that the incentive to acquire more efficient firms is stronger for firms diversifying into new areas in an effort to gain future core competencies. Efficiency is measured in several ways. First, relative efficiency is defined as one if the return on assets of the acquirer is greater than the return on assets of the target firm. As in Hannan and Rhoades (1987), the return on assets of the target is used as a measure of overall efficiency. Finally, the target's expense ratio is included to measure the firm's efficiency in insurance-specific operations.<sup>15</sup>

**Concentration**—Diversified firms tend to have smoother earnings patterns. It is thought that diversification acquirers will target firms with high levels of diversification (low levels of geographic and line-of-business concentration) in an effort to further the earning smoothing motivations often associated with diversification.

However, prior research suggests that higher levels of asymmetric information in financial firms may lead to a situation where additional diversification in operations reduces transparency and results in a reduced value in the market (see, for example, Fenn and Cole, 1994; Akhigbe and Madura, 2001). Hence, diversifying firms may be more likely to select focused targets to reduce the complexity of the transaction. The geographic Herfindahl index is based on premiums written in each state. The line-of-business Herfindahl index is based on the premiums written by the insurers in fourteen types of business.<sup>16</sup>

**Other Factors**—In addition to these operational and capitalization characteristics, several other factors are included as controls in the equation modeling the selection of a diversification or focus target. Time dummies are included to control for changes in the economy and for industry-wide trends during the time period. Andrade and Stafford (2001) note that mergers can be the result of industry-wide forces such as a fundamental shock.<sup>17</sup> Jensen (1993), Mitchell and Mulherin (1996), and Morck, Shleifer, and Vishny (1990) also link acquisitions to industry-wide shocks in technology, capital, or surplus. The natural log of total assets is included to control for other operational and capitalization differences in the target firms related to firm size. As suggested by Smith and Stulz (1985) and Colquitt and Hoyt (1997), firms with higher levels of taxes tend to have the incentive to reduce volatility of earnings. As in Colquitt and Hoyt (1997), potential tax-related motivations are controlled for with a dummy variable equal to one if the target firm paid taxes in the year prior to the acquisition.<sup>18</sup> Thus, we would expect a positive relationship between the tax variable and

**Table 2.** Summary of Hypotheses for Preferred Characteristics of Targets—Diversification and Focus Acquisitions

	Diversification	Focus
Leverage	+/-	+/-
Liquidity	+	-
Efficiency	+/-	+/-
Concentration	-	+
Other factors:		
Time	n/a	n/a
Size	n/a	n/a
Taxes	+	-

the use of diversification strategies. A summary of the hypotheses and associated variables is included in Table 2.

#### *The Impact of Diversification or Focus on the Target Firm.*

As indicated by the motivations for the selection of a target firm, it appears that acquirers may make acquisitions with the intent of altering the operations or capitalization of the target firm through the diversification or focus strategy of the acquirer. In some instances, such as the potential to improve operational efficiency, as hypothesized for focus acquisitions, this can be a value-enhancing benefit to the target. However, if the target is selected with the intent of increasing its level of leverage or removing liquidity, as hypothesized for diversification acquisitions, this potential wealth expropriation may have a negative impact on the solvency of the target. The investigation of the impact of diversification and focus acquisitions on the target firms helps to test if and to what extent the acquirer's motivations are operationalized by systematically changing the financial and operational characteristics of the target. Changes in the financial and operational characteristics of the targets are assessed in the period surrounding the acquisition.

**Measures of Changes in Operations and Capitalization**—The operating margin is used to capture changes in the overall performance of the target surrounding the acquisition (e.g., John and Ofek, 1995; Desai and Jain, 1999). The change in net income to premiums earned is used as a measure of overall insurer performance.<sup>19</sup> We present no *a priori* hypothesis for the relation between the change in overall performance and the diver-

sification or focus aspect of the acquisition since evidence of value-enhancing effects for both strategies is found in prior literature.

While the change in the overall performance of the target is important, it does not provide a complete picture of the financial and operational impact of the acquisition. We also measure the changes in the capitalization of the firm through changes in the capital-to-asset ratio, financial leverage, underwriting leverage, liquidity, and efficiency. Specifically, the liquidity of the firm is monitored in an effort to test for the potential for wealth expropriations and/or capital infusions following the acquisitions, while the efficiency of the firm is modeled or proxied through changes in return-on-assets and expense ratios surrounding the events in an effort to detect operational changes in the target.

By analyzing these aspects of the target, the stakeholders of the firm can gain a more complete understanding of the potential impact of diversification and focus on the targets. In each case, the change in the financial or operational characteristics is measured using a change in the ratio from two years prior to the acquisition to two years following the event. This is done in an effort to control for potential accounting bias surrounding the event and to account for the possibility that changes in the target may not be observable in the year of the acquisition.

**Control Measures**—The growth of the target and the relative size of the target to the acquirer are included in the models as control measures. The growth of the target surrounding the acquisition can cause changes in performance and capitalization. Thus, the percentage change in net premiums written for the target firm from two years prior to the acquisition through two years following the acquisition is included to control for growth.<sup>20</sup> Prior studies have found that firms with high growth opportunities have decreased levels of leverage (Gaver and Gaver, 1993; Smith and Watts, 1992). Additionally, Wells, Cox, and Gaver (1995) provided evidence that growth opportunities are related to free cash flows.

The potential impact of the acquisition on the target is likely related to the relative size of the target to the acquirer. Benston, Hunter, and Wall (1995) argue that the relative size of the target and acquirer affects issues related to economies of scale, creation of growth opportunities, and cost of the acquisition. In their study of the acquisition of mutual thrifts, Gupta, LeCompte, and Misra (1997) find that the acquirers' gains increase with the relative size of the transaction. The ratio of the total assets of the target to the total assets of the acquirer is included as a measure of relative size, similar to the measure used in Frame and Lastrapes (1998); Gupta, LeCompte, and Misra (1997), and Pilloff (1996).

## RESULTS

The empirical analysis is based on the financial and operational characteristics of the individual target firms.<sup>21</sup>

### Summary Statistics

Using the definition of diversification and focus outlined earlier, 36 of the acquisitions were classified as focus transactions and 92 were classified as diversification acquisitions.<sup>22</sup> Table 3 contains means for all target firms and for the subgroups of diversification and focus targets. Comparisons of the means tests for the diversification and focus targets indicate that diversification targets are more diversified on a geographic and line-of-business basis. On average, the diversification targets also have higher liquidity than focus targets. Both are consistent with the hypothesized motivations of diversification acquirers. The hypotheses are further tested in a multivariate framework in the sections that follow.

### Motivations for the Selection of Diversification and Focus Targets

Analysis of the pre-acquisition traits of the target firms is used to create an assessment of the motivations for the selection of diversification and focus targets. The results presented in Table 4 illustrate the presence of significant differences in the motivations of acquirers utilizing diversification and focus strategies.

As expected, the targets in diversification acquisitions are more liquid than the targets in focus acquisitions. Given the similar nature of their business, acquirers in focus transactions have a better knowledge of the operations of potential target firms. Thus, in focus acquisitions the acquirers are better suited to select cash-constrained firms. As suggested by Chamberlain and Tennyson (1998), this could be done with the intention of improving the target by infusing additional liquidity. It also may signal the potential for diversification acquirers to remove excess levels of liquidity from the more liquid diversification target.

The diversification targets tend to be less concentrated (more diversified) firms than the focus targets. This relationship holds with respect to both the geographic and line-of-business concentration. The potentially smoother earnings of these already diversified targets provide evidence in support of the acquirer's incentive to further smooth earnings through diversification.

Targets in diversification acquisitions tend to have higher levels of financial leverage than those in focus acquisitions. This supports the find-

**Table 3.** Summary Statistics Means

Descriptive statistics	Full sample	Diversification acquisitions	Focus acquisitions
Variable	N = 128	N = 92	N = 36
Relative_Eff	0.6484	0.6848	0.5556
Target_Eff	0.0041	0.0003	0.0138
Capital-to-Asset Ratio	0.3522	0.3620	0.3271
Liquid	3.4223	3.7434*	2.6019*
Geog_Herf	0.4920	0.4385**	0.6289**
LOB_Herf	0.6888	0.6262**	0.8485**
Expense	0.6541	0.7134	0.5028
Und_Leverage	1.5750	1.5134	1.7325
Fin_Leverage	1.5267	1.5559	1.4520
LN Assets	17.9040	17.9272	17.8445
Growth	0.3923	0.4603	0.2185
Relative_Size	0.1670	0.1829	0.1263
% Change in Operating Margin	-0.2450	-0.5116	0.4363
% Change in Liquidity	0.1263	-0.0343	0.5367
% Change in Capital-to-Asset Ratio	0.1408	0.1530	0.1097
% Change in Expense Ratio	0.2642	0.3464	0.0542
% Change in Financial Leverage	0.1809	0.1831	0.1755
% Change in Underwriting Leverage	-0.0733	-0.0832	-0.0481
% Change in Return on Assets	-0.5807	-0.4886	-0.8161

\*Diversification and focus group means significantly different at 5% level based on pairwise t-test

\*\*Diversification and focus group means significantly different at 1% level based on pairwise t-test

Relative\_Eff. = dummy variable equals 1 if the return on assets of the acquirer is greater than the return on assets of the target; Target\_Eff = return on assets of the target in the year prior to the acquisition; Liquid = ratio of cash and invested assets to liabilities for the target in the year prior to the acquisition; Fin\_Leverage = ratio of reserves to policyholder's surplus in the year prior to the acquisition for the target; Und\_Leverage = ratio of premiums to policyholder's surplus in the year prior to the acquisition for the target; Geog\_Herf = Herfindahl index based on the amount of business written in each state; LOBus\_Herf = Line-of-business Herfindahl index based on the concentration of the premiums written in each line-of-business; Expense = ratio of underwriting expenses to premiums written for the target in the year prior to the acquisition; LNAssets = natural log of the target's total assets in the year prior to the acquisition; percentage change variables are based on the percentage change in the average of the two years prior to the acquisition and the average of the year of the acquisition and the year following the acquisition; Capital-to-Asset = policyholder's surplus to total assets; Financial Leverage = reserves to policyholder's surplus; Underwriting Leverage = net premiums written to policyholder's surplus; Liquidity = cash and invested assets to liabilities; Operating Margin = operating cash flows to total assets; Return on Assets = net income to assets; Expense Ratio = underwriting expenses to premiums earned; Relative\_Size = total assets of the target/total assets of the acquirer in the year of the acquisition; Growth = percentage change in net premiums written from two years prior to the acquisition through two years following the acquisition.

**Table 4.** Selection of Diversification or Focus Targets
$$\text{Diversification/Focus} = \beta_0 + \beta_1(\text{Relative\_Eff.}) + \beta_2(\text{Target\_Eff}) + \beta_3(\text{Liquid}) + \beta_4(\text{Fin\_Leverage}) + \beta_5(\text{Und\_Leverage}) + \beta_6(\text{Geog\_Herf}) + \beta_7(\text{LOB\_Herf}) + \beta_8(\text{Expense}) + \beta_9(\text{Tax}) + \beta_{10}(\text{LNAssets}) + \beta_{11-15}(\text{Year}) + \varepsilon$$

	Expected Sign	Coeff.	P-value
Intercept		13.0696	0.0005
Relative_Eff.	-/+	0.7061	0.0696
Target_Eff	-/+	1.3641	0.6912
Liquid	+	0.1894	0.0531
Geog_Herf	-	-2.2734	0.0000
LOB_Herf	-	-4.1038	0.0000
Tax	+	0.3760	0.3461
Expense	-/+	0.0812	0.6650
Und_Leverage	-/+	-0.4360	0.0218
Fin_Leverage	-/+	0.3915	0.0211
Y94		-0.4806	0.4227
Y95		-0.1122	0.8334
Y96		0.1978	0.7002
Y97		0.5620	0.2630
LNAssets		-0.5295	0.0022

The results are based on a probit model.

Diversification/Focus = dummy variable equals 1 if diversification acquisition; Relative\_Eff. = dummy variable equals 1 if the return on assets of the acquirer is greater than the return on assets of the target; Target\_Eff = return on assets of the target in the year prior to the acquisition; Liquid = ratio of cash and invested assets to liabilities for the target in the year prior to the acquisition; Fin\_Leverage = ratio of reserves to policyholder's surplus in the year prior to the acquisition for the target; Und\_Leverage = ratio of premiums to policyholder's surplus in the year prior to the acquisition for the target; Geog\_Herf = geographic Herfindahl index based on the amount of business written in each state; LOB\_Herf = line-of-business Herfindahl index based on the concentration of the premiums written in each line-of-business; Expense = ratio of underwriting expenses to premiums written for the target in the year prior to the acquisition; Tax = dummy variable equal to 1 if the target firm paid taxes in the year prior to the acquisition; LNAssets = natural log of the target's total assets in the year prior to the acquisition; Y94, Y95, Y96, Y97 = TIME DUMMIES REPRESENTING THE YEAR OF THE ACQUISITION (Y93 is omitted).

ing of Chamberlain and Tennyson (1998), which suggests that acquirers may seek to remove the financial constraints of the firms. Additionally, these more leveraged diversification targets can benefit from the smoother earnings patterns resulting from the diversification transactions.

The diversification targets tend to have lower levels of underwriting leverage than firms acquired in focus transactions, indicating a greater potential for increased business following the acquisition. The ability to utilize the underwriting capacity of the target is valuable to an acquirer that is moving into a new area of business since it enhances the level of diversification that can be achieved.

The relative efficiency of the diversification targets is positive, providing evidence that the acquiring firms are more efficient than their targets in the diversification transactions. Additionally, the firms targeted in diversification transactions tend to be smaller than those targeted in focus acquisitions.<sup>23</sup>

The results of this section indicate that there are significant differences in the types of firms targeted in diversification and focus transactions. This provides insight into the first question posed in the paper, suggesting that the diversification or focus decision of the acquirer does affect the motivations for the selection of the target firm. The results also provide at least one explanation for the conflicting results in prior research related to the selection of optimal target firms.

### **Impact of Diversification and Focus Strategies on the Target Firm**

With an understanding of the difference in the motivations surrounding the selection of targets in diversification and focus strategies, we now turn to the second major question of the paper, whether the strategy of the acquirer has an effect on the target's operations or capitalization after the acquisition. The results presented in Table 5 test for potential changes in the target firms related to the diversification and focus aspect of the acquisitions. The results do not support the hypothesis that acquirers systematically alter the targets after the acquisitions depending on the diversification or focus strategy of the acquirer. This result is important because of the potential changes in the targets' post-acquisition capitalization and operations suggested by the motivations outlined in the prior section. For example, given the higher liquidity levels of the targets in the diversification acquisitions, these acquirers may seek to remove liquidity from the target following the acquisition. If the level of wealth expropriation is high enough, this could compromise the solvency of the target by affecting both the policyholders of the firm and potentially other insurers in the marketplace. This is not to say that the financial and operational

**Table 5.** Changes in the Performance and Capitalization of the Target Firms\*

$\Delta$ Performance or Capitalization $\beta_0 + \beta_1$ (Diversification/Focus) + $\beta_2$ (Relative_Size) $\beta_3$ (Growth) + $\beta_4$ (Lambda) + $\varepsilon$						
	% change in	Constant	Diver./ Focus	Relative_ Size	Growth	Lambda
Capitalization	Capital-to-Asset	0.1540 (0.1310)	0.0155 (0.9048)	-0.1466 (0.4159)	-0.0134 (0.2385)	0.0388 (0.6928)
	Fin. Leverage	-0.0813 (0.7546)	0.3010 (0.3482)	0.1620 (0.7128)	0.0480 (0.0860)	-0.3111 (0.1945)
	Und. Leverage	-0.1946 (0.2448)	0.0508 (0.8054)	0.1264 (0.6570)	0.1621 (0.0000)	-0.1310 (0.3987)
Liquidity	Liquidity	0.3825 (0.3935)	-0.4262 (0.4404)	0.1927 (0.8012)	0.0457 (0.3457)	-0.1651 (0.6924)
Performance	Operating Margin	0.3173 (0.8877)	-0.5855 (0.8325)	-0.6467 (0.8662)	-0.0852 (0.7257)	-0.3021 (0.8853)
	NI to Prem. Earned	0.4260 (0.8163)	-1.9288 (0.3934)	8.4478 (0.0069)	-0.0456 (0.8168)	-1.0821 (0.5255)
Efficiency	Return on Assets	-1.4057 (0.3364)	0.0287 (0.9873)	4.9951 (0.0456)	-0.0760 (0.6307)	0.0340 (0.9801)
	Expense Ratio	-0.0713 (0.8934)	0.5815 (0.3755)	-0.4974 (0.5840)	0.0017 (0.9764)	-0.2590 (0.6012)

\*Results are based on a treatment effects specification of the model. Results are adjusted for heteroskedasticity. (P-values are reported in parentheses.)

Percentage change variables are based on the percentage change in the average of the two years prior to the acquisition and the average of the year of the acquisition and the year following the acquisition.

Capital-to-Asset = policyholder's surplus to total assets; Fin. Leverage = reserves to policyholder's surplus; Und. Leverage = net premiums written to policyholder's surplus; Liquidity = cash and invested assets to liabilities; Operating Margin = operating cash flows to total assets; NI to Prem. Earned = net income to premiums earned; Return on Assets = net income to assets; Expense Ratio = underwriting expenses to premiums earned; Lambda = Inverse Mill's Ratio; Diver./Focus = dummy variable equals 1 if diversification acquisition; Relative Size = total assets of the target/total assets of the acquirer in the year of the acquisition; Growth = percentage change in net premiums written from two years prior to the acquisition through two years following the acquisition.

characteristics of the targets do not change after the acquisition, but rather that they do not systematically change because of the diversification or focus aspect of the acquisition.<sup>24</sup>

## Robustness Testing

Additional tests were conducted to test the sensitivity of the model to the methodology chosen and to the definition of diversification and focus. As mentioned previously, the models described above also were estimated on the basis of a sample in which the financial data for multiple firms acquired in a single acquisition were aggregated to account for changes in the acquired group. The results of those tests yielded statistically similar results.

The models were tested for sensitivity to small changes in the level of the acquirer's diversification or focus as a result of the acquisition. The models were estimated using two sub-samples of the original dataset. The first set removed all firms with less than a one percent change in the acquirer's Herfindahl index surrounding the acquisition. The second test removed all acquisitions resulting in less than a 2.5 percent change in the acquirer's Herfindahl index. The 2.5 percent cutoff removed approximately 30 percent of the observations. The results of the tests yielded statistically similar results in the selection of diversification and focus targets equation with the exception of the loss of significance on the relative efficiency measure for both sub-samples and the loss of significance on the financial leverage variable in the sub-sample based on the 2.5 percent cutoff. Results related to the diversification and focus variable in the change in performance and capitalization equations in the second stage remained the same for both sub-samples.

An instrumental variables specification of the models also was conducted. In this case, an instrument for the diversification or focus variable in the second equation is based on the results of the first stage of the model. The test yielded statistically similar results. Additionally, it should be noted that an OLS specification of the changes in performance and capitalization equations yielded relatively consistent results to those of the treatment effects and instrumental variables specifications.

Many prior studies related to diversification and focus defined diversification acquisitions as those acquisitions in which the SIC code of the acquirer differs from the SIC code of the target. For comparability, the models were run according to a traditional definition of diversification and focus in which diversification transactions are defined to be acquisitions by non-property-liability insurance acquirers and focus acquisitions are acquisitions by property-liability insurance acquirers. This yields 21 diversification acquisitions and 107 focus acquisitions. In the analysis based on

the traditional definition of diversification and focus, relatively few statistically significant factors in the selection of diversification and focus targets are found. As with the prior definition of diversification and focus, diversification targets appear to have higher levels of liquidity than focus targets. Consistent with the main results of the paper, the diversification or focus aspect is not statistically related to the changes in the performance and capitalization of the target firms surrounding the acquisitions.<sup>25</sup> The results of these models underscore the importance of the ability to account for both diversification into the insurance industry and diversification within the industry.

Finally, an analysis based on a sample in which all the acquirers were property-liability insurers was performed. In the probit model, the results were statistically similar to Table 4, with two exceptions. First, the tax variable was positive and significant, consistent with the incentives to smooth earnings to reduce potential tax liabilities. Second, the relative efficiency measure was not significant in these models. The results of the change in performance and capitalization equations were generally consistent with the results presented in Table 5. The one exception was a significant negative relationship between diversification and the change in net income to premiums earned. In all of the other models, there is no correlation between the diversification and focus aspect of the acquisition and the change in performance or capitalization.

## CONCLUSIONS AND IMPLICATIONS

The results provide a means of reconciling the potentially conflicting results related to motivations for mergers and acquisitions in prior studies that did not control for the impact of diversification and focus. For example, prior literature has suggested that both highly liquid and cash-constrained firms are likely targets for mergers and acquisitions. The results of the paper suggest that more-liquid targets are selected in diversification acquisitions relative to those in focus acquisitions.

The findings of this study indicate that there is no single type of firm that is likely to be a preferred target for all acquirers; rather, the results suggest that acquirers will select firms with the financial and operational characteristics to meet their needs in a changing market. The differences found in the diversification and focus targets provide support for many of the hypotheses related to the benefits and costs of these strategies. For example, earnings smoothing is a benefit of diversification. An analysis of the preferred pre-acquisition characteristics of the target firms reveals that targets in diversification acquisitions tend to be less concentrated (more

diversified) than those of focus acquisitions. This trait furthers the acquirers' goal of achieving smoother earnings.

The findings of this paper also show that acquirers achieve the underlying goals of their diversification and focus strategies through the selection of the target firms on the basis of the operations of the firm prior to the acquisition. These firms are selected for financial and operational characteristics that help to meet the objectives of the acquirer. The results do not support the hypothesis that diversification or focus acquirers systematically change the performance or capitalization of the target firms depending on the diversification or focus strategy. While the performance and capitalization of the targets may change following the acquisition, the study does not find results to support a systematic change based on the diversification or focus aspect of the acquisition in the short term.

These results are robust to the various specifications of the model and definitions of diversification and focus. The robustness tests related to the potentially differing impact of diversification acquisitions by property-liability insurers and by non-property-liability insurers were conducted. The tests utilizing a more traditional industry-based definition of diversification and focus indicate that few distinguishing characteristics in the types of targets selected by property-liability and non-property-liability acquirers exist. This finding highlights the importance of a precise definition of diversification and focus. Tests that are related to changes in the target's performance and capitalization after the acquisition also fail to reveal systematic differences in the impact of the type of acquirer on the target firm.

Understanding the preferences of diversifying and focusing acquirers helps to explain the differences in the types of firms currently being targeted for acquisition. This information is important both to regulators monitoring the transactions and to the stakeholders of targets and potential targets. As noted in Akhigbe and Madura (2001), merger announcements have an effect not only on the targeted firm, but also on firms of similar type, size, and location.

Our findings do not support the hypothesis that diversification acquirers systematically reduce the capital or increase the risk of targeted firms through changes in the firm following the acquisition. As the National Association of Insurance Commissioners and other regulatory agencies work to finalize the rules governing financial services modernization, this study provides preliminary evidence of the impact of acquisitions on firms targeted by acquirers in related and unrelated lines of business.

## NOTES

<sup>1</sup>Factors such as a soft market and pressure to control expenses along with later changes in regulation increased the incentives for consolidation activity. A review of the major mergers shows diversification activity with the Traveler's and Citicorp merger in April of 1998 and a move toward corporate focus with the announcement of the purchase of Cigna's property-casualty units by ACE in 1999. This contrast in motivation, coupled with interest in deregulation of the financial services sector, provides an important setting to investigate the impact of diversification and focus on insurers.

<sup>2</sup>Acquisitions in which the acquirer's line-of-business concentration increases as a result of an acquisition are classified as focus acquisitions. Diversification strategies are identified in situations in which a firm decreases its level of line of business concentration through the acquisition of a property-liability insurer or cases in which firms from outside of the industry acquire property-liability insurers.

<sup>3</sup>In this study, only transactions in which the targeted firm continues to operate as a distinct unit are included in the sample. Transactions in which the financial information for the target is ultimately merged into the acquirer's financial statements after the acquisition are not included.

<sup>4</sup>In other words, if the types of firms selected in diversification or focus transactions are systematically different, then it is possible that the changes in the target's capitalization and operations after the acquisition are driven by the nature of the types of firms acquired rather than the impact of the diversification or focus strategy on the target firm. By separating these two effects, the treatment effects models are able to control for the potential sample-selection bias based on the motivations for selecting a target in a diversification or focus acquisition.

<sup>5</sup>According to Berger et al. (2000), the strategic focus hypothesis argues that "firms can maximize value by focusing on core businesses and core competencies." The conglomeration hypothesis, however, suggests that "owning and operating a broad range of business can add value from exploiting cost scope economies by sharing inputs in joint production." Further, in the financial services area, the convenience of "one-stop shopping," the added value from internal capital markets, and the increased benefits of diversification all are strengths of the conglomeration approach. These benefits are expected to be similar to the benefits seen for firms engaging in diversification strategies in this study.

<sup>6</sup>Some studies have created definitions of diversification based on changes in concentration related to segment-level data available on Compustat. Villalonga (2003) finds that while Compustat's segment-level data yielded a diversification discount for the firms in the sample, the use of the Business Information Tracking Series establishment-level data lead to a diversification premium. The definition of diversification used in the current study is based on revenue in various lines of business for the target and acquirer. This yields a consistent classification of firms in our study.

<sup>7</sup>The definition of diversification and focus is described in more detail in the data, methodology, and hypotheses development section.

<sup>8</sup>This method has been used in studies related to the insurance industry such as BarNiv and Hathorn (1997); Chamberlain and Tennyson (1998); Cummins, Tennyson, and Weiss (1999); Meador, Madden, and Johnston (1986); and Norgaard and Cray (1970). In the area of banking and thrifts, studies such as Gupta, LeCompte, and Misra (1997); Hannan and Rhoades (1987); and Thompson (1997) have employed this strategy. Examples of studies using samples not based on financial services firms include Amit, Livnat, and Zarowin (1993); Asquith and Kim (1982); Dietrich and Sorensen (1984); and Palepu (1986).

<sup>9</sup>Akhigbe and Madura (2001) and Madura and Picou (1993) use market-based measures to analyze the effects of merger announcements on insurance. They focus on both acquiring firms and target firms. It should be noted that in Akhigbe and Madura (2001), of their sample of 88 firms, only 22 had publicly traded target firms. Owing to a difference in our sample period, the number of firms with publicly traded targets was even smaller.

<sup>10</sup> The closer the Herfindahl index is to one, the more concentrated or focused the firm. For example, if a firm operates in a single line of business, the firm's Herfindahl index is one. If a firm operates equally in two lines of business, the Herfindahl index is 0.5. If that firm acquires an insurer of the same size that operates in two different lines of business, the new Herfindahl index for the combined firm would be 0.25, reflecting the diversification effect of the acquisition. However, if the target firm were the same size, but operated in only one of the acquirer's existing lines, the Herfindahl index would become 0.625, reflecting the increase in focus of the combined firm. It should be noted that a relatively small change in the Herfindahl index can still represent a significant change in the operations of the company, as illustrated in the previous example.

<sup>11</sup> Changes in Herfindahl indices have been used in prior literature to define diversification and focus. Desai and Jain (1999) utilized the change in a firm's Herfindahl index based on segment data to classify spin-offs as focus-increasing or non-focus-increasing. John and Ofek (1995) also used a change in a Herfindahl index measure based on segment-level data in their analysis of asset sales.

<sup>12</sup> Robustness tests were conducted to test the sensitivity of the results to small changes in the Herfindahl index, as well as to compare the definition used in this study to the traditional industry-based definition of diversification and focus. These results are discussed in the robustness tests section of the paper. Additionally, tests were conducted to examine the impact of omitting acquirers that were not property-liability insurers. This created a sample of 71 diversification acquisitions and 36 focus acquisitions. The results of these tests are discussed in the robustness tests section of the paper.

<sup>13</sup> The inverse Mill's ratio or lambda is computed on the basis of the results of the probit model in the first stage. In essence, the lambda variable controls for systematic difference between the two groups or treatments that might bias the interpretations of the impact of group membership on the individual observation or firm. In this case, it controls for the possibility that systematic differences in diversification and focus targets might bias the perceived effect of the diversification or focus aspect of the acquisition on the changes in the target firm. Further discussion of the methodology can be found in Greene (1993). As a robustness test, an instrumental variables approach also is utilized. Greene (1998) and Barnow, Cain, and Goldberger (1981) suggest that the treatment effects and instrumental variables approach are alternative methods of estimating the model. A discussion of these results is included in the robustness tests section.

<sup>14</sup> Underwriting leverage is inversely related to the insurer's ability to write additional business (Chamberlain and Tennyson, 1998).

<sup>15</sup> The measures of efficiency used are based on accounting data. Studies in the insurance and banking area such as Chamberlain and Tennyson (1998), BarNiv and Hathorn (1997), Hannan and Rhoades (1987), Norgaard and Crary (1970), and Meador, Madden, and Johnston (1986) have used similar measures to characterize managerial performance, efficiency, and operations of firms. These measures provide a preliminary indication of the efficiency of the firms.

<sup>16</sup> As described above, these 14 types of business are based on a grouping of 26 lines of business written by insurers. The lines of business written are grouped according to similar characteristics in managerial discretion and underwriting risk. This is done in an effort to prevent bias in the measure due to the effects of lines of business that are rarely significant parts of an insurer's book of business.

<sup>17</sup> Examples of fundamental shocks or industry-wide forces include events such as major regulatory changes, large losses, and significant financial innovation.

<sup>18</sup> Similar measures of taxes have been utilized by Petroni and Wahlen (1995), Petroni (1992), and Scholes, Wilson, and Wolfson (1990).

<sup>19</sup> A similar proxy was used in Chamberlain and Tennyson (1998).

<sup>20</sup> More common measures of growth opportunities typically use market-based data (e.g., Gaver and Gaver, 1993; Smith and Watts, 1992; Baber, Janakiraman, and Kang, 1996). Because of the large number of mutual and closely-held stock insurers in the industry, an accounting-

based measure is needed in this study. Baber, Janakiraman, and Kang (1996) suggest the use of a measure based on past growth. The variable utilized is based on the change in net premiums written as used in Colquitt, Sommer, and Godwin (1999).

<sup>21</sup> Robustness testing based on aggregated financial data for multiple target firms acquired in a single acquisition yielded statistically similar results.

<sup>22</sup> Observations removed include situations in which a target's financial data are not available for the four-year period surrounding the acquisition. Additionally, observations are removed if the total assets of the acquirer cannot be determined, as is the case with non-publicly traded acquirers operating outside the insurance industry. Several outliers were removed on the basis of influence diagnostics.

<sup>23</sup> It should be noted that this is based on the total assets of the individual target rather than on the total assets of the potential group of firms targeted in a single acquisition.

<sup>24</sup> Construction of alternative specifications of the percentage change in capitalization and operations variables was based on the change from two years prior to the transaction to the year after the acquisition. The results related to the diversification and focus variable remained unchanged.

<sup>25</sup> In an OLS specification of the equations, based on the change in performance and capitalization of the target firms surrounding the acquisitions, there is a statistically significant and negative relationship between diversification and change in liquidity and the change in the expense ratio according to this definition of diversification and focus. The statistically significant relationship is not found in the treatment effects or instrumental variables specification of the models.

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