IPO PERFORMANCE UNDER LOW INFORMATION ASYMMETRY AND LOW AGENCY CONFLICTS: THE CASE OF DEMUTUALIZED INSURERS

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Abstract

One of the hypotheses put forth to explain the post-issue underperformance of IPO stocks is that managers take advantage of windows of opportunity by timing the offerings when shares are overvalued. This study investigates the hypothesis by examining the post-IPO performance of insurance firms that went public after going through a process called demutualization, a structural conversion from mutual to stock company. Because the demutualization process is highly regulated, managers of these insurers have little discretion to time the issue. Furthermore, the demutualization process is very transparent so these IPOs should have lower information asymmetry. Empirical results show that, on average, demutualized insurance IPOs do not exhibit poor performance compare to various benchmarks. The results yield indirect support to the notion that managers of other types of IPO firms take advantage of "window of opportunity" which, in turn, leads to poor long-run performance.

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I. Introduction

It is well-documented in the literature that initial public offerings (IPOs) underperform in the long-run. Numerous studies have documented significant declines in market performance (Ibbotson, 1975; Ritter, 1991; Loughran and Ritter, 1995) and operating performance (Jain and Kini, 1994) of IPO stocks. There is also a "hot issue market" phenomenon in which firms in certain industries go public in a particular high-volume period exhibiting worse performance than those making offerings in low-volume years (Ritter, 1984). One explanation is related to the potential agency conflicts when a private firm turns public (Jain and Kini, 1994). Jensen and Meckling (1976) posit that, with reduction in shareholding, managers may no longer act on behalf of all shareholders. For instance, it is hypothesized that, due to agency conflicts, managers will take advantage of outside investors by timing the issues when shares are overvalued (Loughran and Ritter, 1995). Furthermore, managers try to expropriate wealth from outside investors by using IPO proceeds to invest in non-value maximizing activities which, in turn, results in poor operating performance. Moreover, investors tend to overestimate the share prices due to the information asymmetry between managers and investors. In the end, it is concluded that the underperformance of IPO stocks are a results of over-optimism by investors and managers taking advantage of this "window of opportunity" (Ritter, 1991).

It is possible to test the hypothesis that information asymmetry and agency conflicts lead to poor post-IPO performance indirectly by examining a unique group of companies that went public under an environment which has relatively low information asymmetry and lower agency conflicts. Recently, a great deal of attention focuses on

studying mutual insurance companies that convert to stock insurance companies in a process known as demutualization (e.g., McNamara and Rhee, 1992; Viswanathan and Cummins, 2003; Carson, Forster and McNamara, 1998). A mutual insurance company is literally owned by its policyholders, while a stock insurance company is owned by outside investors. For decades, both organizational forms have co-existed in the insurance industry, as each organizational form has its own set of comparative advantages (Fama and Jensen, 1983). However, with the recent wave of demutualizations in the insurance industry, financial economists have become intrigued by the underlying motive that is driving these conversions, and whether or not the motive is justified, as a demutualization is a dramatic, costly, rigid, and time-consuming process. The objective of this study is to identify a set of demutualized (both life and property-casualty) insurance firms that subsequently conduct an initial public offering (IPO) and assesses their long-run performance post-IPO.

There are several reasons that converting mutual insurance firms have relatively lower information asymmetry and lower agency conflicts. First of all, the process of demutualization is quite arduous, time-consuming, and transparent with close monitoring by regulators. The states also require that companies hold public hearings to inform general public and investors. Because of the strict and relatively transparent demutualization process, converting insurance firms that went public may actually exhibit relatively lower information asymmetry compared to IPOs from other industries. In addition, the literature has shown that the mutual structure controls agency conflicts between managers and owners less effectively than does the stock structure. Given that demutualized insurance firms separate the roles of policyholders and owners, demutualized insurance firms should experience lower agency costs related to monitoring. The reason is that outside monitoring (i.e., market discipline) is more effective in controlling managerial discretion than monitoring by policyholders (Mayers and Smith, 1981). Consequently, it is unlikely that managers of demutualized insurance IPOs have incentives to expropriate wealth from outside shareholders (i.e., relatively lower agency conflicts than IPOs from other industries).

Further, the primary reason being cited for demutualization is access to capital Viswanathan and Cummins, 2003). Because mutual insurers can increase capital by selling more policies or use surplus notes, they have limited capital raising capabilities. With increased competition from banks and other financial institutions, finding additional capital has become even more difficult for mutual insurers. Consequently, it can be argued that the initial public offerings by mutual insurers are motivated by a genuine economic reason, not agency-related incentives. If insurance firms genuinely demutualize to gain access to capital, then these insurance IPOs should not underperform in the long-run. This contention is what being empirically tested in the paper. In sum, examining post-issue performance of converting insurance firms should provide insights, ex post, to the motive behind the demutualization and subsequent public offerings and the sources of organizational efficiencies resulting from demutualization. Finally, the findings should also shed light on IPO performance when information asymmetry is relatively low and agency costs are reduced.

The null hypothesis is that demutualized firms' IPOs do *not* underperform other IPOs and the benchmarks in the long-run. The first alternative hypothesis is that, like IPOs from other industries, demutualized insurance IPOs exhibit underperformance in the long-run. The other alternative hypothesis put forth in the insurance literature is that, because demutualization enhances efficiency, demutualized IPOs outperform the benchmarks in the long-run (Lai, McNamara and Yu, 2007; Viswanathan, 2006). In contrast to the findings from previous studies in the insurance literature, the empirical findings from this study do not lead to the rejection of the null hypothesis. It is documented that demutualized insurers that immediately issued IPOs exhibit a normal market performance when compared to an insurance sector benchmark and matched-firm benchmarks. Furthermore, other types of insurance IPOs (e.g., stock insurance firms making public offerings) still exhibit poor post-issue market performance. It is worth mentioning that these results provide indirect support the "window of opportunity" hypothesis for why IPOs underperform in the long-run. This conclusion is supported by the fact that insurance firms that have the ability to time their issues (e.g., stock firms) still exhibit underperformance like that observed among IPOs from other industries. A comparison of post-IPO operating performance between demutualized insurance firms and other insurance firms confirms the stock returns findings. In addition, demutualized insurance IPO firms also show relatively high market-to-book (M/B) ratio, price-to-earnings (P/E) ratio, and earnings per share (EPS). Taken together, the overall findings imply that demutualization decisions and subsequent public offerings are economically motivated and justified ex post. The results suggest that IPOs do not underperform in the long-run when, at the time of the issue, information asymmetry is low and agency costs are reduced.

The rest of the paper begins by describing the literature on post-IPO performance. Next, the benefits and drawbacks of the mutual organizational form and the stock organizational form are summarized. Hypotheses concerning the

post-issue market performance and operating performance of demutualized insurance IPOs are formulated. The next section discusses the sample characteristics and presents the empirical findings. A conclusion is offered at the end.

II. Post-issue performance of IPOs

The reasons for going public involve the trade-offs between the benefits of being publicly traded and the associated costs (Chemmanur and Fulghieri, 1999). Financial economists have proposed several benefits of going public. For the entrepreneurs, they gain from having a more diversified portfolio (Benninga, Helmantel and Sarig, 2005). Furthermore, Holmström and Tirole (1993) and Bolton and von Thadden (1998) contend that increased monitoring by outsiders and increased liquidity could positively affect firm value. Having shares sold publicly also facilitates firm valuation by investors (Benveniste and Spindt, 1989; Dow and Gorton, 1997; Subrahmanyam and Titman, 1999) who, in turn, can use the market price information to make future investment and compensation decisions.

However, there are also numerous costs of going public to the original owners. They have to give up control and increase disclosure of inside information to outsiders which, in turn, can reduce the firm's competitive advantage. More importantly, there is also a cost of separating ownership and control (i.e., the agency cost of equity) (Jensen and Meckling, 1976). The agency cost of equity, along with information asymmetry, potentially leads to a situation in which entrepreneurs attempt to expropriate wealth from new outsider shareholders. This expropriation of wealth can lead to high levels of underpricing at the initial public offering and poor long-run performance. There is empirical evidence that firms time the decisions to go public (Ritter, 1984). Ritter (1991) finds that IPO firms during 1975-1984 exhibit poor market performance against matching firms for three years after initial public offerings. Loughran and Ritter (1995) further document a poor long-run underperformance for a 5-year horizon. Jain and Kini (1994) document a significant decline in operating performance after initial public offerings of firms that went public during 1976-1988. The decline in post-issue investment levels is also documented world-wide by Loughran, Ritter and Rydqvist (1994) and Pagano, Panetta and Zingales (1998). Ritter (1991) concludes that investors are often too optimistic about the potential of young firms and that companies take advantage of these "windows of opportunity." Jain and Kini (1994) contend that poor operating performance is a function of information asymmetry and agency conflicts. For instance, managers try to manipulate accounting numbers prior to public offerings or decide to go public during a period of unusually high performance that cannot be sustained. Consequently, IPOs tend to exhibit poor post-issue operating performance.

In conclusion, the poor post-issue performance of IPOs has been extensively documented by previous research. This phenomenon is attributable to the high degrees of agency conflicts and information asymmetry between the firm's owners/managers and outside investors. In the end, it is conjectured that firms take advantage of the "window of opportunity" by issuing shares when they are, on average, over priced. Although the conjecture is quite plausible, it is fairly difficult to empirically and directly test this conjecture. One approach is to examine long-run performance of a unique group of firms that went public in an environment that has relatively low information asymmetry and agency conflicts. A comparison of long-run performance of this group of firms should yield additional insights on the conjecture. The next section describes a small and unique group of insurance companies that went public after going through a process called demutualization, a conversion from a mutual form of organization to a stock form. Because of the unique characteristics of the demutualization process, these IPOs allow the test of the conjecture on the poor long-run performance of IPOs.

III. Organizational structure of insurance companies

Within the insurance industry, there are two major types of organizational structures, mutual and stock. The stock form is similar to a traditional public corporation structure in that there is a separation of ownership and control. Managers manage day-to-day activities whereas stockholders receive residual claims from operations. Further, shareholders and fixed-claim holders (i.e., policyholders/customers) are usually separate entities in the stock form. In contrast, in the mutual organizational form the policyholders (fixed-claim holders) have ownership rights to the firm which effectively merges the stockholder and customer functions. Combining the customer and owner functions helps alleviate any agency conflicts between shareholders who desire wealth maximization and customers who are relatively risk-averse. However, in the mutual form, the agency cost between managers and policyholders can be significant in the absence of market discipline.

The stock form essentially has different drawbacks and benefits from the mutual form. The stock form potentially creates a conflict between outside investors and policyholders, but it enjoys the benefit of market-based mechanisms that

monitor and control opportunistic managerial behavior. Consequently, both organizational forms should be able to coexist even in a competitive optimizing equilibrium environment. That is, each insurance firm should adopt the organizational form that is optimal given its unique characteristics. For instance, Mayers and Smith (1981, 1988) observe that mutual insurance companies tend to focus on lines that require relatively lower managerial discretion. At the same time, stock insurers tend to specialize in business lines that require more managerial decision-making authority. In other words, the nature of the operation dictates the choice of organizational structure, thereby allowing both forms to co-exist (Mayers and Smith, 1986; Smith, 1986). This co-existing hypothesis also explains the fact that mutual insurers tend to focus on business lines with longer durations. This is because the incentives to take excessive risk are mitigated when owners and fixed-claim holders are the same entity (Mayers and Smith, 1981; Pottier and Sommer, 1997). Cummins, Weiss, and Zi (1999) contend that the choice of production technology also allows mutual and stock insurers to optimize their efficiency. Mutual insurers can also make use of corporate governance mechanisms to alleviate problems between owners and managers. For example, Mayers, Shivdasani, and Smith (1997) find that mutual insurers tend to have a higher proportion of outside directors which, in turn, allow them to effectively control agency conflicts. In the end, each type of organizational form appears to operate in an environment where it holds a comparative advantage (Fama and Jensen, 1983).

The recent wave of conversions, from the mutual form to the stock form, implies that the stock form has become more advantageous for mutual insurers. The primary reason cited for demutualization is access to capital. The explanation is that, by design, mutual insurers have limited capital raising capabilities – additional capital can only come from an increase in their customer base and/or retained earnings. With increased competition and a changing business environment, mutual insurers find it more difficult to raise additional capital to finance their operations and investment. Examining insurance firm conversions during 1981-1999, Viswanathan and Cummins (2003) find that the liquidity constraint and the need to increase managerial discretion drive the demutualization process, consistent with the access to capital hypothesis. In addition, Viswanathan and Cummins (2003) also argue that increased product complexity requires greater managerial control that only the stock form permits. This is consistent with the notion that the owners/customers of mutual insurers may not be able to effectively monitor the action of mutual managers (Mayers and Smith, 1981). Boose (1990) finds that mutual insurers tend to have higher expenses than their stock counterparts. Wells, Cox and Gaver (1995) also find that, consistent with Jensen (1986), mutual insurers have relatively higher levels of free cash flows than stock insurers. Finally, Viswanathan and Cummins (2003) also posit that mutual managers may desire stock-based compensation for their services.

The conversion process is quite lengthy, rigid, and costly, as it involves the board of directors, policyholders, and regulators in a significant manner. Mutual managers also lose flexibility under the new stock organizational form as they now face market monitoring. Therefore, the potential benefits of demutualization must outweigh the conversion costs. Examining the conversions of mutual savings and loans to stock charter, Masulis (1987) finds that, on average, major claimants in the savings and loans conversions gain benefit from the demutualization. Cole and Mehran (1998) examine the performance of demutualized thrift institutions and find that market performance of converting thrifts improves drastically. Several studies have also documented operating performance improvements immediately after demutualization in the insurance industry (Carson, Forster and McNamara, 1998; McNamara and Rhee, 1992). With the recent wave of initial public offerings of insurers, it provides a unique opportunity to examine post-conversion market and operating performance from a different (i.e., market-based) perspective. The next section discusses hypotheses on the long-run performance of initial public offerings for insurers that just went though the demutualization process.

IV. Hypothesis

The null hypothesis is that demutualized insurance firms' IPOs will not exhibit underperformance as documented in IPOs from other industries. The competing hypothesis in this study is that demutualized insurance firms' IPOs will perform as poorly as other IPOs. In other words, managers of demutualized insurers take advantage of information asymmetry and the "window of opportunity" by going public when shares are overpriced which, in turn, results in poor long-run market performance (Ritter, 1991; Loughran and Ritter, 1995). Alternatively, another competing hypothesis is that, because demutualization enhances efficiency, demutualized IPOs should exhibit superior post-issue performance (Lai, McNamara and Yu, 2007; Viswanathan, 2006). In this study, it is contended that there are theoretical reasons to reject the null hypothesis.

First of all, it can be argued that insurance firms that just went through demutualization should have relatively lower information asymmetry than other types of firms that conducted initial public

offerings. The reason is that, because of state regulations, the demutualization process is very time-consuming and transparent (Viswanathan and Cummins, 2003). Initially, the board of directors must approve the initiation of the demutualization plan. Once the approval is obtained, the insurer must provide detailed information to independent accounting and investment advisors who will work with the insurer to draft the reorganization plan. The state regulator will also examine the demutualization plan in detail and actively participate in the process. As a part of the state's requirements, public hearings will also be held to gather comments and opinions from the general public and policyholders. Eventually, a majority approval from the policyholders is required before the insurer can proceed with the conversion. The process, which can take up to two years, is necessary to make sure that policyholders are fairly compensated for relinquishing their ownership rights. Because relevant information has been revealed through out the conversion process, the degrees of information asymmetry for converting mutual insurers IPOs should be alleviated. It should also be noted that most of the demutualized firms are also relatively large and well-established companies (e.g., Prudential, MetLife, and John Hancock) so the degrees of information asymmetry should also be significantly lower than small, high-growth IPOs in other industries.

Secondly, it can be argued that converting insurers should have relatively lower flexibility in timing the public offerings. The reason is that the financial market generally expects public offerings immediately after the reorganization plan is approved regardless of the market conditions. Because firms have little control over the pace of the demutualization process, managers of converting insurers should have relatively lower ability to time the market or to take advantage of any kind of "windows of opportunity". As a result, it is inferred that the demutualization process leads to relatively less opportunity for wealth expropriation by demutualized insurance managers than for managers of IPO firms in other industries.

Thirdly, it can be argued that mutual insurers are going public for a genuine economic reason, not agency-related incentives. Previous studies have put forth access to capital as the main motivation for insurance firms to conduct the conversion. The reason is that mutual insurers convert in order to meet with the changing competitive environment in the insurance industry. For the past two decades, insurance companies have been facing tough competition from banks (Carow, 2001) and other financial institutions (e.g., mutual funds) which can now sell similar products that used to be sold exclusively by insurance companies. Therefore, mutual insurers need to raise additional capital to keep up with intense competition. However, mutual insurers can only raise funds through retained earnings, surplus notes or selling more policies which, in turn, hampers their ability to compete. To maintain their competitiveness, the conversion from mutual to stock form is a sensible course of action for these insurance firms. Because these insurance IPOs are in fact motivated by an economically justified reason, it is more likely that funds raised from IPOs will be used to invest in value-maximizing (positive NPV) projects. Jain and Kini (1994) posit that managers of IPO firms generally have incentive to invest in non-value-maximizing projects which, in turn, leads to poor post-issue operating performance. However, these insurance IPOs should not suffer poor post-issue performance as observed in IPOs from other industries because of their unique circumstances. Furthermore, it is hypothesized that converting life insurers should benefit more from the public offerings as the competition from other financial institutions comes in the areas that life insurance used to dominate (e.g., annuities).

Finally, there are also additional extenuating circumstances that should provide support to the alternative hypothesis. The reason is that insurance firms that convert their organization structure from mutual to stock should experience significant decreases in agency conflicts. Under the mutual form, policyholders have very limited power or incentive to monitor the managers. The reason is that, for any owner/policyholder, taking actions against the management will result in a pro rata gain only for one share/policy. Consequently, policyholder voting for mutual insurance companies has been extremely low at less than one percent (Viswanathan and Cummings, 2003). For managers of stock insurance companies, the level of monitoring is relatively higher than that of mutual insurers because shareholders can gain from their actions. The end result is that managers of mutual insurers do not always act on behalf of the shareholders leading to non-value-maximizing investments or perquisite consumption (Mayers and Smith, 1981). Previous studies have documented that mutual insurers have relatively higher expenses and free cash flows than stock insurers (Boose, 1990; Wells, Cox and Gaver, 1995). In summary, it is concluded that the extent of agency conflict should be reduced when insurers are transitioning from mutual to stock form of organization because outside investors can provide market discipline and monitoring of managerial discretion that policyholder/owners cannot provide effectively (Mayers and Smith, 1981).

Examining insurance IPOs also provides a unique opportunity to test the conjecture put forth in the literature (e.g., Ritter's) indirectly because there is another group of insurance IPOs that were already stock firms before going public. Unlike converting insurance IPOs, these stock insurance

firms have the ability to time the market and take advantage of private information. Furthermore, the information asymmetry between owners/managers and outside investors should be relatively higher for IPOs of stock insurers than that for converting mutual insurance IPOs. The reason is that stock insurers only need to go through the process with their investment bankers without any requirement to disseminate critical information to the public or outside investors. Consequently, it is hypothesized that insurance IPOs that were already stock firms before going public should still suffer from the usual agency conflict and information asymmetry which, in turn, leads to poor post-issue performance.

It should be quite apparent that sample and benchmark selection are critical for the test. To be qualified into the sample, the firms must be positively identified as pure life or property-casualty insurance companies that have just gone through the demutualization process immediately before going public. There are concurrent studies examining a larger sample of demutualized insurers' IPO performance. However, those studies have several limitations with regard to testing the conjecture on IPO underperformance. For example, Viswanathan (2006) primarily examines only the insurance IPOs. She finds that demutualized IPOs tend to underprice more than non-demutualized IPOs and contends that the high underpricing is consistent with the legal liability hypothesis while making no comparison with IPOs from other industries. She also looks at long-run stock market performance and finds that demutualized insurance firms perform better than the CRSP Index, which consists of all NYSE, AMEX and NASDAQ firms. Lai, McNamara, and Yu (2007) also study short-run and long-run stock returns of demutualized IPO firms and show findings consistent with Viswanathan (2006). In the end, both studies conclude that demutualization enhances the wealth of the shareholders. However, both studies only compare long-run performance of insurance IPOs with the market-wide index (NYSE/AMEX/NASDAQ Index) so their results do not take into account the actual performance of insurance stocks, which outperformed the market-wide index during the study periods. From the theoretical perspective, more importantly, demutualized IPO stocks should neither outperform nor underperform the benchmarks as the demutualization process alleviates information asymmetry and agency conflicts in the IPO process. In the end, the results from this study show that, once a proper benchmark is chosen, the positive abnormal performance documented in the insurance literature disappears.

In this study, the main focus is on the long-run performance of IPOs of a strictly defined sample of demutualized insurers. In particular, only life and property & casualty insurance firms are identified from the total sample. Other types of insurance companies (e.g., medical malpractice insurance) are excluded from the sample. The justification is that these companies do not face the same kind of competitive environment as life and property & casualty insurance companies. Therefore, their motivation for demutualization and subsequent public offerings are not as clear as that of life and property & casualty insurance companies. More importantly, only insurance firms that conduct full demutualization are included in the study.[6] The reason is that mutual holding demutualization still does not alleviate the agency conflicts because original mutual policyholders still do not receive voting rights in the new stock companies. Unlike other studies which use market-wide benchmark, more importantly, this study examines the long-run performance of converting insurers in comparison with a more directly comparable set of benchmarks (insurance stocks with SIC Code 6300-6399 and matched IPOs) in order to test the conjecture on the long-run underperformance of IPOs. In addition, post-IPO operating performance, namely operating cash flows, expense ratios, and investment growth for the next three years are examined. By examining post-issue operating results, it can be concluded that the need to access capital is what motivates demutualization and subsequent public offerings.

V. Data and Methods

To construct the samples of life and property & casualty IPO firms, a search was done on the Securities Data Corporation (SDC) database for IPO firms with SIC code 6300-6399. Most importantly, selected firms must be positively confirmed as life and property & casualty insurance firms in *Best's Insurance Reports, Property Casualty* and *Best's Insurance Reports, Life Health*. A search was also done on the moneycentral.hoovers.com for IPO firms that are described as life and property & casualty firms for the period from July 1996 to December 2004. About two-thirds of our firms are found via the

[6] In a full demutualization, the policyholders surrender their ownership rights while receiving compensation in the forms of stocks of the newly created company, cash or policy credits. In mutual holding demutualization, a stock holding company, controlled by a mutual holding company, is created to directly own a newly created stock insurance company. In this case, policyholders do not receive any shares of the new stock company. The conversion process for mutual holding demutualization normally takes 6 to 12 months whereas the full demutualization could take up to 2 years (Viswanathan and Cummins, 2003).

SDC database, while one-third is found on the internet.

There are altogether a total of 46 insurance companies in the sample. The earliest IPO was conducted by Empire Fire and Marine Insurance in 1972, while the latest IPO was done by Specialty Underwriters Alliance Inc. in 2004. Among the sample firms, 17 firms are classified as operating in life insurance business and 29 firms belong to the property & casualty insurance business. The line of business is confirmed by *Best's Insurance Reports* or by moneycentral.hoovers.com and business description for IPO firms from Securities Data Corporation (SDC) database.

Among the sample firms, 10 firms went public immediately after demutualization according to *Best* so their conversion type is classified as "Y" conversion. On the other hand, 36 insurance firms are organized as stock firms since their establishment so they are classified as "N" conversion. The most important aspect of sample selection is that the criteria are either verified by *Best* or if there is no corresponding record of a conversion in *Best*, the firm will be dropped from the sample. In the end, the sample of demutualized firms in this study is smaller than the sample of demutualized firms studied in Lai, McNamara and Yu (2007) and Viswanathan (2006). Table 1 lists all the life and property insurance firms, their line of business, conversion type and the IPO date. Panel A of Table 2 reports the distribution of IPOs over years and the distribution of IPOs by line of business and conversion type. From the yearly distribution, a majority of the initial public offerings occurred during the past 15 years so it appears that the period could be considered a "hot market" years for the insurance industry.

[Insert Table 1 Here]
[Insert Table 2 Here]

Panel B of Table 2 presents the descriptive statistics of IPO firms by line of business and type of conversion. The issue size is calculated by the offer price multiplied by the shares outstanding on the first trading day. The median issue size for the overall IPO sample is \$0.14 million. Life insurance IPO firms have higher median issue size of \$0.78 million than that of property & casualty insurance IPO firms with \$0.08 million. Conversion IPO firms have median issue size of \$1.14 million, while non-conversion IPO firms have smaller issue sizes with a median \$0.11 million. The median offer price for the whole IPO sample is \$13.25 per share. The median offer prices are \$17.00 per share and \$12 per share, respectively, for life insurance and property & casualty insurance IPOs. Conversion IPO firms have a median offer price of \$15.63 per share while non-conversion IPO firms have a median offer price of \$12.50 per share. Initial return is measured as follows:

$$Initial\ \mathrm{Re}turn = \frac{First\ Trading\ Day\ \mathrm{Pr}ice - Offer\ \mathrm{Pr}ice}{Offer\ \mathrm{Pr}ice}$$

The overall median initial return for insurance IPO firms is 5.36%. Life insurance IPO firms have a median initial return of 5.00% and property & casualty insurance IPO firms have a median initial return of 5.73%. The median initial return of conversion IPO firms is 7.12% while the median initial return for non-conversion IPO firms is 4.84%.

To evaluate the long-run performance of insurance IPO firms, the procedure in Ritter (1991) is employed to calculate (1) the cumulative average adjusted returns (CAR), where adjusted returns are computed using several different benchmarks and (2) the 3-year buy and hold returns for both the IPO firm and a set of matching firms. For each IPO firm, the matching firm is selected with the same three-digit industry code as the IPO firm and with the closest market value at the end of the previous year of the IPO firm. Returns are calculated for two intervals: the initial return period (normally 1 day), defined as the offering date to the first closing price listed on the CRSP daily return files, and the aftermarket period. The initial return period is defined to be month 0, and the aftermarket period includes the following 36 months where months are defined as successive 21-trading-day periods relative to the IPO date. Thus, month 1 consists of event days 2-22, month 2 consists of event days 23-43, and so forth. For IPOs in which the initial return period is greater than 1 day, the month 1 period is truncated accordingly, e.g., if the initial return period is 5 days, month 1 consists of event days 6-22. For IPO firms that are de-listed before their 3-year anniversary, the aftermarket period is truncated.

Monthly benchmark-adjusted returns are calculated as the stock's monthly raw return minus the monthly benchmark return for the corresponding 21-trading-day period. The benchmarks used are (1) CRSP value-weighted NYSE-AMEX-NASDAQ index, (2) the CRSP value-weighted insurance industry index (SIC code 6300-6399), and (3) listed firms matched by industry and size. The analysis based on the CRSP value-weighted NYSE-AMEX-NASDAQ index allows for a replication of results in previous insurance studies (Lai, McNamara and Yu, 2007; Viswanathan, 2006). However, it is contended that

the CRSP value-weighted insurance industry index (SIC code 6300-6399) is a more appropriate benchmark and provides a more conclusive comparison. To check for robustness, a group of financial firms matched by firm size is selected as another benchmark. The benchmark-adjusted return for stock i in event month t is defined as:

$$AR_{it} = r_{it} - r_{mt}$$

The average benchmark-adjusted return on a portfolio of n stocks for event month t is the equally-weighted arithmetic average of the benchmark-adjusted returns:

$$AR_t = \frac{1}{n}\sum_{i=1}^{n} AR_{it}$$

The cumulative benchmark-adjusted aftermarket performance from event month q to event month s is the summation of the average benchmark-adjusted returns:

$$CAR_{q,s} = \sum_{t=q}^{s} AR_t$$

As an alternative to cumulative average benchmark-adjusted returns, 3-year holding period returns are also calculated:

$$R_i = \prod_{t=1}^{36}(1 + r_{it}),$$

where r_{it} is the raw return on firm i in event month t. R_i measures the total return from a buy and hold strategy where a stock is purchased at the first closing market price after going public and held until the earlier of (1) its 3-year anniversary, or (2) its delisting. The 3-year total return (Ritter, 1991) and wealth relatives are defined as:

$$WR = \frac{1 + average\ 3-year\ total\ return\ on\ IPOs}{1 + average\ 3-year\ total\ return\ on\ matching\ \ firms}$$

A wealth relative of greater than 1.00 can be interpreted as an IPO firm outperforming a portfolio of matching firms. In contrast, a wealth relative of less than 1.00 indicates that the IPO stock underperformed the benchmark.

To evaluate post issue operating performance of insurance IPO firms, the examination of operating performance measures is similar to that in Jain and Kini (1994). There are three measures of operating performance used in this study. The first measure is operating return (EBIT) on assets, which is operating income (before depreciation and taxes minus depreciation) divided by total assets at the end of the fiscal year (COMPUSTAT data item 13 divided by data item 6). The second operating measure is operating cash flow deflated by total assets at the end of the fiscal year. The ratio equals income before extraordinary items (COMPUSTAT data item 18) plus depreciation (COMPUSTAT data item 14) divided by total assets (COMPUSTAT data item 6). The change in operating performance is calculated as the median change in levels, i.e., the median value of {*operating return*$_i$ *(t) – operating return*$_i$ *(0)}*, where i represents the firm, 0 represents the fiscal year prior of the IPO, and t represents a post-IPO fiscal year-end.

The industry-adjusted change in operating performance is calculated by matching each IPO firm with firms in the same industry based on the three-digit SIC code. Additional operating measure such as increase in investment (COMPUSTAT data item 113), and changes in expense ratio (COMPUSTAT data item 189, which is the selling, general & administrative expenses, divided by data item 12, sales) are also employed in this study. Expense ratio is a widely used measure of organizational efficiency among insurance firms (Boose, 1990; Lai and Limpaphayom, 2003).

Finally, several measures of investor expectations of post-IPO earnings growth and the actual post-issue earnings performance are examined. The results should show whether investors expect continued earnings growth in the post-issue period and if these expectations are fulfilled. Specifically, to study investor expectations of earnings potential, the post-issue M/B and P/E ratios for both insurance IPO firms and their industry counterparts are calculated. The M/B ratio of equity is defined as the ratio of market value of equity to the book value of equity (COMPUSTAT data item 24 × data item 25 divided by data item 60). The P/E is computed as COMPUSTAT data item 24 divided by data item 58. To measure the post-issue earnings performance of insurance IPO firms and their industry counterparts, earnings per share (EPS) (COMPUSTAT data item 58 divided by data item 27) and post-IPO changes are calculated for the next three years. All the changes in these ratios are reported relative to Year 0, the year of IPO. The next section presents and discusses the findings.

VI. Results

Table 3 presents the ARs and CARs of all of the insurance IPO firms in our sample. From Table 3, it can be seen that the insurance IPO firms almost immediately begin to underperform after their IPOs. The mean CAR becomes negative in month 3 and progressively becomes more negative going from month 1 to month 36. The 3-year CAR of -46.6 percent is statistically significant at conventional levels. Subsequently, the insurance

IPOs are separated into subsamples by conversion classification (yes and no). Using the CRSP value-weighted NYSE-AMEX-NASDAQ index, Table 4 reports ARs and CARs of insurance firms that went public after demutualization. Table 5 reports ARs and CARs for other stock insurance firms that also made initial public offerings. From both tables, it is apparent that non-demutualized firms primarily drive the underperformance exhibited in Table 3. The results show that demutualized IPO firms earn a large 56 percent 3-year return on average. Using the market-wide benchmark (Table 4 and Table 5), the results are consistent with the findings of Lai, McNamara and Yu (2007) and Viswanathan (2006) that demutualized IPOs exhibit positive abnormal returns post-issue.

[Insert Table 3 Here]
[Insert Table 4 Here]
[Insert Table 5 Here]

To check for robustness of previous studies, additional analyses are conducted using alternative benchmarks to calculated ARs and CARs. The alternative benchmarks are the CRSP value-weighted insurance industry index (SIC code 6300-6399) and a randomly selected group of listed financial firms matched by firm size. For each insurance IPO, 3 industrial IPOs and 3 financial IPOs are also selected, matching the sample firms with same IPO year and closest first trading day market capitalization. Results for ARs and CARs calculated using the CRSP value-weighted insurance industry index (SIC code 6300-6399) are shown in Table 6 and Table 7.

[Insert Table 6 Here]
[Insert Table 7 Here]

The results with different but appropriate benchmarks are quite striking. The positive long-run returns of conversion IPOs drastically reduce when the benchmark is changed to the insurance index. For example, the long-run market returns in Table 6 are mildly positive and not statistically significant when compared to sector returns (SIC Code 6300-6399). This results still holds when using the matched financial firm returns. This new finding indicates that the positive performance documented by Lai, McNamara and Yu (2007) and Viswanathan (2006) might have been overstated by their choice of the benchmark. In other words, it appears that the insurance sector as a whole was performing well when compared to the market-wide measure. However, the abnormal returns decline drastically when compared to firms in the same sector or to firms matched by financial characteristics. Table 7 also shows that ARs and CARs for non-conversion insurance IPOs are negative and statistically significant than when using the market-wide benchmark. In the end, the notion that the long-run market performance of insurance IPOs that just went through organization conversion is superior to the long-run market performance of non-conversion insurance IPOs no longer holds. In contrast, the empirical results provide support to the hypothesis that conversion insurance IPOs do not exhibit superior or poor long-run market performance when compared with insurance stocks or other financial firms.

The comparisons of results using different benchmarks are graphically shown in Figure 1 and Figure 2. From Figure 1, the long-run performance of insurance IPOs was quite poor when compared to stocks with SIC Code 6300-6399 and matched financial firms. Most interestingly, the insurance IPOs exhibit mostly positive CARs when compared to IPOs from industrial sectors. Splitting the insurance IPO sample by conversion classification reveals a very interesting finding. Figure 2 shows that, compared to the NYSE-AMEX-NASDAQ Index, insurance firms that just went through demutualization process immediately before going public exhibit a superior long-run market performance to other types of insurance IPOs. This finding is consistent with Lai, McNamara and Yu (2007) and Viswanathan (2006). However, the positive abnormal returns drastically reduce when the CRSP value-weighted insurance industry index (SIC code 6300-6399) is used as benchmark. The results using the matched-financial firms also reveal a similar pattern. It is concluded that demutualized insurance IPOs do not exhibit superior or poor performance when compare to insurance or matched-financial stocks. Finally, Figure 3 shows that demutualized life insurers exhibit superior performance when compared to non-conversion life insurers. This finding is consistent with the notion that life insurers benefit the most from demutualization because they are no longer constrain by the ability to raise funds to finance their growths.

[Insert Figure 1 Here]
[Insert Figure 2 Here]
[Insert Figure 3 Here]

Table 8 shows the post-issue performance of IPO firms from a different perspective. Here, the cumulative 3-year raw returns of the insurance IPO firms are compared to the cumulative 3-year raw returns of a set of matching firms. The Wealth Relative measure contrasts the two sets of returns. From the results in Table 8, the performance on insurance IPOs is lower than that of the matching firms but the difference is not large. It is concluded that there is no evidence of superior performance shown by demutualized insurance IPOs. Further, it can be seen that conversion IPOs outperform non-

conversion IPO firms over the 3-year period (0.831 wealth relative versus 0.790 wealth relative).

[Insert Table 8 Here]

Table 9 reports regression results. The main motivation behind these regressions is to see if conversion firms do indeed outperform other insurance firms, while controlling for other factors that explain aftermarket returns. Following Ritter (1991), the dependent variable is the 3-year total raw return. Independent variables include the market-adjusted initial returns, market returns during the 3-year period, the size of the IPO proceeds, a dummy variable equal to 1 for insurance firms, a dummy variable equal to 1 for conversion firms, a dummy variable equal to 1 for non-conversion firms, and interaction terms between dummy variables.

From Table 9, it is observed that initial returns (IR) are negatively related to 3-year returns. This finding is consistent with that of Ritter (1991). If firms "time the market" when issuing their IPOs, where firms issue IPOs when the market overvalues them, then these firms are likely to underperform in the long run. Initially, the coefficients for conversion insurance IPOs are positive and statistically significant. However, the statistical significance of conversion dummy variable disappears when other control variables are included in the models. It should be noted that the coefficients for non-conversion IPOs are negative and statistically significant suggesting that other insurance IPOs underperform in the long-run. The finding that conversion insurance firms do not underperform in the long run suggests that these demutualized insurers did not take advantage of "windows of opportunity" and time the issues when share prices are overvalued. This result provides support for the earlier contention that conversion firms have less latitude to time the market. In fact, conversion firms outperform in the long run, suggesting that they go public for genuine economic-oriented reasons (i.e., to access capital for growth). The life insurance firm dummy is positive and statistically significant, suggesting that demutualized life insurance firms' IPOs do especially well in the long run. This finding provides support to the notion that life insurers benefit more from the demutualization as they are able to obtain sufficient capital to compete with other firms.

[Insert Table 9 here]

Operating performance measures after IPOs for all insurance companies are reported in Table 10. For all insurance IPOs, there is an initial increase in operating performance one year after initial public offerings (EBIT/TA increases), but for the most part operating returns eventually decline two and three years after the IPO (both EBIT and CF are negative). These insurance firms also experience decreases in their capital investments and increases in their expense ratios. Overall, the results show that insurance firms, as a group, exhibit poor operating performance after initial public offerings. Table 11 further shows operating performance by conversion type. Panel A reports on conversion insurance firms and Panel B reports on non-conversion insurance firms. The differences in terms of post-issue operating performance are quite apparent. It appears that non-conversion firms experience significant declines in operating returns and capital investments, and experience increases in expense ratios. For conversion insurance firms, operating performance and expense ratios remain the same post-IPO. These results provide important insights as they confirm the results for aftermarket stock returns. The capital raised by the IPO leads to stable operating cash flows, investments, and expenses, which, in turn, lead to stable market valuations. Moreover, it appears that managers of demutualized insurers are performing better than the managers of other types of insurers. The empirical evidence is consistent with the hypothesis that the agency conflict is relatively lower for conversion insurance companies which, in turn, leads to relatively better post-issue operating performance.

[Insert Table 10 here]
[Insert Table 11 here]

Finally, Table 12 shows market expectation measures. Panel A shows results for all insurance IPOs. Panels B and Panel C show results for conversion insurers and non-conversion insurers, respectively. The patterns are quite distinct. For non-conversion insurers, their M/B ratio, P/E ratio, and EPS decline significantly post-IPO. For conversion insurers, the M/B ratio improves relative to the industry while P/E ratios decline marginally. At the same time, earnings per share measures for conversion insurance IPOs increase drastically. Overall, the results for market expectations suggest that earnings growth of conversion insurers appear to continue after going public and that expectation by investors is sustained. The results also show that expectation of earnings growth for non-conversion insurance companies was not sustained.

[Insert Table 12 here]

Overall, the empirical results show that insurance companies that went public immediately after demutualization do not exhibit underperformance as observed among IPOs from other industries. More importantly, the results of

this study are not consistent with previous insurance studies that use market-wide index as the benchmark. Once the appropriate benchmarks are used, the results show that conversion insurance IPOs generate normal long-run returns or perform as well as listed firms in the insurance sector or other matched financial firms. The results also reveal that insurance companies that were already stock firms before public offerings exhibit poor long-run market performance regardless of the benchmarks selection. A possible explanation for these results is that, due to the demutualization process, conversion insurers have lower information asymmetry than other types of firms that make public offerings. Incidentally, these conversion insurers also have relatively limited ability to time the market compared to other types of IPOs. It is also possible that the extent of agency conflicts is lower for these conversion insurance companies because the monitoring mechanism improves after conversion. Finally, the operating performance measures of these conversion insurers remain stable after initial public offerings.

In the end, the empirical results provide indirect support to the notion put forth by Ritter (1991) that firms take advantage of "windows of opportunity" by issuing shares when they are overpriced and that information asymmetry leads investors to be overly optimistic about future prospect. By examining long-run performance of a group of companies that went public under an environment with relatively lower information asymmetry and relatively lower agency conflicts and documenting no long-run underperformance among this group of IPOs, it is concluded that two major market imperfections, information asymmetry and agency conflicts, explain the underperformance of initial public offerings documented by previous IPO studies.

VII. Conclusions

The main objective of this study is to examine the post-IPO performance of insurance firms that demutualized immediately before going public. Demutualization is a process by which firms undergo a conversion from being a mutual company (where policyholders own the firm) to becoming a stock company (where outside investors own the firm). The demutualization process is lengthy and transparent, so these conversion firms experience low information asymmetry upon becoming a stock firm. In addition, because outside investors are more active owners than policyholders, these conversion firms also experience lower agency costs upon becoming a publicly traded company. Consequently, these firms should experience a reduction in agency conflicts between managers and shareholders. Conversion firms usually cite the need to access capital for their demutualization and subsequent public offering. Because the demutualization process is costly with respect to time and effort, the benefits of becoming a stock company must be significant. Given a low information asymmetry and low agency cost environment post-demutualization and post-IPO, and given that demutualization is a significant transformation, it is predicted that demutualized IPO firms will *not* underperform in the long-run.

A unique sample of demutualized and going-public insurance firms is carefully identified in order to conduct the empirical tests. Previous insurance studies have compared post-IPO performance of demutualized insurance IPOs and find that these insurance IPOs exhibit superior performance when compared with market-wide benchmarks. In contrast, this study documents that demutualized firms do not outperform a series of benchmark firm returns, including insurance stocks and other financial firms. Further, demutualized insurance firms also exhibit stable operating returns after initial public offerings. This latter finding is consistent with the former finding. These results show, ex post, that demutualized firms are justified in their desire to demutualize and to subsequently go public. Perhaps just as important, the results also show indirect support for the "window of opportunity" hypothesis. Because demutualized firms have less latitude to "time the market," they are less likely to be overvalued on the offering day. Regression results confirm the previous findings.

Overall, the empirical findings support the hypothesis that firms that went public in an environment with relatively low information asymmetry and with relatively low agency costs will not suffer from the same poor long-run underperformance that has been documented in other types of IPO firms. In summary, these findings suggest, indirectly, that information asymmetry and agency costs explain the post-issue underperformance that has been documented in the finance literature.

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Table 1. Insurance IPOs included in the sample

This table provides the list of insurance companies that went public immediately after demutualization and the list of control group, consisting of insurance companies that were already stock firms before initial public offerings. A firm is classified as a conversion (Conversion Type = Y), if Best's Insurance Reports mention that the firm underwent demutualization. A firm is defined as a non-conversion (Conversion Type = N), if Best's Insurance Reports indicate that the firm is organized as stock holding firm since established. A firm is also defined as a non-conversion firm if there is no corresponding record of the firm in the Best's Insurance Reports.

Insurer	Insurance Type	Conversion	Date
Prudential Financial Inc	Life	Y	12/13/2001
MetLife Inc	Life	Y	04/05/2000
Sun Life Financial Inc	Life	Y	03/24/2000
John Hancock Financial Service	Life	Y	01/27/2000
StanCorp Financial Group Inc	Life	Y	04/16/1999
MONY Group	Life	Y	11/11/1998
Guarantee Life Companies Inc	Life	Y	12/19/1995
SCPIE Holdings	Property & Casualty	Y	01/30/1997
Philadelphia Consolidated Hold	Property & Casualty	Y	09/16/1993
Equitable Companies Inc	Property & Casualty	Y	07/15/1992
Genworth Financial Inc	Life	N	05/25/2004
Assurant	Life	N	02/05/2004
American Equity Investment Life	Life	N	12/04/2003
Nationwide Financial Services Inc	Life	N	03/06/1997
Bankers Life Holding Corp	Life	N	03/25/1993
Capital American Financial	Life	N	12/18/1992
John Alden Financial Corp	Life	N	09/25/1992
Direct General Corporation	Property & Casualty	N	08/12/2003
Travelers Ppty Casualty Corp	Property & Casualty	N	03/12/2002
MIIX Group Inc	Property & Casualty	N	07/30/1999
American Safty Insurance Hld	Property & Casualty	N	02/13/1998
PAULA Financial	Property & Casualty	N	10/24/1997
Old Lyme Holding	Property & Casualty	N	08/17/1993
TIG Holdings Inc	Property & Casualty	N	04/20/1993
Midland Financial Group Inc	Property & Casualty	N	12/10/1992
Citizens Security Mutual Ins	Property & Casualty	N	12/17/1986
Donegal Group Inc	Property & Casualty	N	10/29/1986
American Capacity Group	Property & Casualty	N	07/17/1986
Acceptance Insurance Hldgs Inc	Property & Casualty	N	07/09/1986
American Reliance Group Inc	Property & Casualty	N	06/11/1986
Aid Corp	Property & Casualty	N	10/30/1985
American Integrity Corp	Property & Casualty	N	01/12/1984
Integrity Financial Group Inc	Property & Casualty	N	08/19/1981
Empire Fire and Marine Ins	Property & Casualty	N	05/31/1972
Prudential Plc	Life	N/A	06/29/2000
FPIC Insurance Group	Life	N/A	08/01/1996
John Adams Life Corp	Life	N/A	09/18/1985
Specialty Underwriters Alliance	Property & Casualty	N/A	11/17/2004
ProCentury Corporation	Property & Casualty	N/A	04/21/2004
Phoenix Companies	Property & Casualty	N/A	06/20/2001
Travelers/Aetna Ppty Casualty	Property & Casualty	N/A	04/22/1996
Insurance Mgmt Solutions Group	Property & Casualty	N/A	02/11/1999
Pan Atlantic Re	Property & Casualty	N/A	02/19/1987
Pioneer Financial Services	Property & Casualty	N/A	10/03/1986
Compu-Plan	Property & Casualty	N/A	05/13/1983
Universal Holding Corp	Property & Casualty	N/A	05/12/1983

Table 2. Summary statistics

This table presents frequency distribution and descriptive statistics for insurance firms that went public immediately after demutualization and controlled groups. Panel A shows frequency distribution by year of issuance. Panel B shows mean and median values for key variables. Standard deviations are reported in parentheses. A firm is classified as conversion (Conversion Type = Y), if Best's Insurance Reports mention that the firm underwent demutualization before initial public offerings whereas a firm is defined as non-conversion (Conversion Type = N), if Best's Insurance Reports indicate that a firm is organized as stock holding firm since establishment. A firm is also defined as non-conversion if there is no corresponding record of the firm in the Best's Insurance Reports.

Panel A: Number of issues per year

Year	Insurance IPOs	Life	Property-Casualty	Conversion	Non-conversion
2004	4	2	2	0	4
2003	2	1	1	0	2
2002	1	0	1	0	1
2001	2	1	1	1	1
2000	4	4	0	3	1
1999	3	1	2	1	2
1998	2	1	1	1	1
1997	3	1	2	1	2
1996	2	1	1	0	2
1995	1	1	0	1	0
1993	4	1	3	1	3
1992	4	2	2	1	3
1987	1	0	1	0	1
1986	6	0	6	0	6
1985	2	1	1	0	2
1984	1	0	1	0	1
1983	2	0	2	0	2
1981	1	0	1	0	1
1972	1	0	1	0	1

Panel B: Descriptive statistics

Variables	Insurance IPOs		Life		Property-Casualty		Conversion		Non-Conversion	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Issue size($m)	1.40	0.14	2.75	0.78	0.61	0.08	3.93	1.14	0.70	0.11
Offer price ($)	14.66	13.25	17.64	17.00	12.91	12.00	16.78	15.63	14.07	12.50
Initial returns (%)	10.34	5.36	13.56	5.00	8.45	5.73	8.49	7.12	10.85	4.84

Table 3. Post Issue Abnormal Returns for All insurance IPOs

This table presents average adjusted returns (AR_t) and cumulative average adjusted returns ($CAR_{1,t}$), in percent, for the 36 months after going public (excluding the initial return). The sample consists of all insurance firms that went public during the study period according to the Best's Insurance Reports. The number of firms trading is smaller than 46 because one firm had a delay of more than one month after going public before being listed. AR_t is calculated as $1/n_t\Sigma(r_{ipo,\,it}-r_{adjusted,\,it})$, where r_{ipo} is the total return on initial public offering firm i in event month t, and $r_{adjusted,\,it}$ is the weighted average returns for stocks with the SIC code 6300-6399 (insurance industry). Alternative adjustments with weighted average returns for matching firms yield qualitatively similar results and, therefore, are not reported. The t-statistics for the average adjusted return are computed for each month as $AR_t \cdot \sqrt{n_t} / sd_t$ where AR_t is the average adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted returns for month t. The t-statistics for the cumulative average adjusted return in month t, are computed as $CAR_{1,t} \cdot \sqrt{n_t} / csd_t$, where csd_t is computed as $csd_t = [t \cdot \text{var} + 2 \cdot (t-1) \cdot \text{cov}]^{1/2}$, where t is the event month, var is the average (over 36 months) cross-sectional variance and cov is the first-order autocovariance of the AR_t series (cov = 0.0002731).

Month of seasoning	Number of firms trading	AR_t (%)	t-statistics	$CAR_{1,\,t}$ (%)	t-statistics
1	45	1.93	0.91	1.93	1.10
2	45	-0.59	-0.44	1.34	0.54
3	44	-2.52	-2.13	-1.17	-0.38
4	44	-0.95	-0.62	-2.12	-0.59
5	44	-0.24	-0.14	-2.37	-0.59
6	44	-0.84	-0.55	-3.20	-0.73
7	45	1.64	0.98	-1.56	-0.33
8	45	-1.73	-0.91	-3.29	-0.65
9	44	-0.63	-0.40	-3.92	-0.73
10	43	-2.76	-1.85	-6.68	-1.16
11	43	-0.21	-0.12	-6.89	-1.14
12	42	-1.80	-1.08	-8.69	-1.36
13	42	1.62	0.80	-7.06	-1.06
14	41	-0.06	-0.03	-7.13	-1.02
15	41	-1.12	-0.76	-8.24	-1.14
16	41	-4.66	-2.08	-12.90	-1.73
17	41	-1.35	-1.25	-14.25	-1.85
18	40	-2.03	-1.35	-16.27	-2.03
19	40	0.83	0.37	-15.44	-1.87
20	40	-0.67	-0.36	-16.11	-1.91
21	40	-2.89	-2.11	-19.01	-2.19
22	40	0.61	0.35	-18.40	-2.07
23	40	-2.67	-1.58	-21.07	-2.32
24	40	-2.04	-1.19	-23.11	-2.50
25	40	-1.58	-1.60	-24.69	-2.61
26	38	-2.49	-1.39	-27.18	-2.75
27	38	-3.57	-2.40	-30.75	-3.05
28	38	-2.15	-1.26	-32.90	-3.20
29	38	-0.04	-0.02	-32.94	-3.15
30	38	-3.74	-3.14	-36.68	-3.45
31	38	-3.35	-1.28	-40.03	-3.71
32	38	-2.50	-1.37	-42.53	-3.88
33	38	-1.37	-0.57	-43.90	-3.94
34	38	-2.44	-0.90	-46.35	-4.10
35	37	-2.54	-1.12	-48.89	-4.20
36	37	2.27	0.80	-46.62	-3.95

Table 4. Abnormal returns for insurance firms that went public after demutualization

This table presents average adjusted returns (AR_t) and cumulative average adjusted returns ($CAR_{1,t}$), in percent, for the 36 months after going public (excluding the initial return). The sample includes only insurance firms that went public immediately after demutualization as reported in the Best's Insurance Reports. AR_t is calculated as $1/n_t\Sigma(r_{ipo,\ it}-r_{adjusted,\ it})$, where r_{ipo} is the total return on initial public offering firm i in event month t, and $r_{adjusted,\ it}$ is the weighted average returns for NYSE-AMEX-NASDAQ. The t-statistics for the average adjusted return are computed for each month as $AR_t \cdot \sqrt{n_t} / sd_t$ where AR_t is the average adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted returns for month t. The t-statistics for the cumulative average adjusted return in month t, are computed as $CAR_{1,t} \cdot \sqrt{n_t} / csd_t$, where csd_t is computed as $csd_t = [t \cdot \text{var} + 2 \cdot (t-1) \cdot \text{cov}]^{1/2}$, where t is the event month, var is the average (over 36 months) cross-sectional variance and cov is the first-order autocovariance of the AR_t series (var=0.008011 and cov=0.000928).

Month of seasoning	Number of firms trading	AR_t %	t-stat	CAR_t %	t-stat
1	10	5.36	1.19	5.36	1.89
2	10	1.48	0.35	6.84	1.62
3	10	-1.98	-0.82	4.87	0.92
4	10	8.00	1.64	12.87	2.10
5	10	3.45	0.70	16.32	2.37
6	10	5.62	1.97	21.94	2.90
7	10	5.47	2.16	27.41	3.34
8	10	9.02	2.84	36.43	4.15
9	10	1.10	0.35	37.53	4.02
10	10	-3.34	-1.28	34.19	3.47
11	10	3.16	0.84	37.35	3.62
12	10	3.02	1.17	40.37	3.74
13	10	3.83	0.88	44.20	3.93
14	10	3.39	2.07	47.59	4.08
15	10	2.37	1.20	49.96	4.13
16	10	-0.05	-0.02	49.91	4.00
17	10	2.30	0.90	52.22	4.05
18	10	-2.51	-2.04	49.71	3.75
19	10	5.07	2.15	54.78	4.02
20	10	1.79	0.79	56.57	4.05
21	10	-3.03	-1.57	53.53	3.74
22	10	2.00	1.05	55.53	3.79
23	10	0.79	0.43	56.32	3.75
24	10	1.13	0.51	57.45	3.75
25	10	3.59	2.38	61.04	3.90
26	10	-2.45	-0.90	58.59	3.67
27	10	-2.23	-0.94	56.37	3.47
28	10	1.69	0.58	58.06	3.50
29	10	-0.36	-0.16	57.70	3.42
30	10	-1.18	-0.87	56.52	3.30
31	10	1.54	0.66	58.06	3.33
32	10	2.29	1.09	60.35	3.41
33	10	0.48	0.23	60.83	3.38
34	10	-3.39	-0.88	57.44	3.14
35	10	-0.77	-0.32	56.66	3.06
36	10	-0.71	-0.38	55.95	2.98

Table 5. Post-issue abnormal returns for other insurance IPOs

This table presents average adjusted returns (AR_t) and cumulative average adjusted returns ($CAR_{1,t}$), in percent, for the 36 months after going public (excluding the initial return). The sample consists of insurance companies that were already stock companies before initial public offerings as reported in the Best Insurance Reports. AR_t is calculated as $1/n_t\Sigma(r_{ipo,\,it}-r_{adjusted,\,it})$, where r_{ipo} is the total return on initial public offering firm i in event month t, and $r_{adjusted,\,it}$ is the weighted average returns for NYSE-AMEX-NASDAQ. The t-statistics for the average adjusted return are computed for each month as $AR_t \cdot \sqrt{n_t} / sd_t$ where AR_t is the average adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted returns for month t. The t-statistics for the cumulative average adjusted return in month t, are computed as $CAR_{1,t} \cdot \sqrt{n_t} / csd_t$, where csd_t is computed as $csd_t = [t \cdot \text{var} + 2 \cdot (t-1) \cdot \text{cov}]^{1/2}$, where t is the event month, var is the average (over 36 months) cross-sectional variance and cov is the first-order autocovariance of the AR_t series (var=0.015704 and cov=0.0003296).

Month of seasoning	Number of firms trading	AR_t %	t-stat	CAR_t %	t-stat
1	35	1.84	0.74	1.84	0.87
2	35	-0.41	-0.26	1.43	0.47
3	34	-0.69	-0.61	0.74	0.20
4	34	-2.17	-1.55	-1.43	-0.33
5	34	-2.02	-1.23	-3.54	-0.71
6	34	-1.48	-0.84	-4.93	-0.92
7	35	0.59	0.26	-4.33	-0.76
8	35	-2.96	-1.21	-7.30	-1.20
9	34	-0.35	-0.19	-7.56	-1.16
10	33	-3.23	-1.72	-10.88	-1.55
11	33	-0.85	-0.47	-11.73	-1.59
12	32	-1.65	-0.72	-13.38	-1.71
13	32	0.98	0.41	-12.40	-1.52
14	31	0.35	0.14	-12.04	-1.40
15	31	-1.07	-0.62	-13.11	-1.48
16	31	-3.86	-1.42	-16.97	-1.85
17	31	-1.45	-1.11	-18.42	-1.95
18	30	-0.90	-0.58	-19.33	-1.95
19	30	0.39	0.14	-18.94	-1.86
20	30	-0.71	-0.33	-19.64	-1.88
21	30	-2.23	-1.25	-21.88	-2.05
22	30	1.60	0.78	-20.27	-1.85
23	30	-3.37	-1.52	-23.64	-2.11
24	30	-1.80	-0.94	-25.44	-2.23
25	30	-1.04	-0.77	-26.48	-2.27
26	28	-0.74	-0.38	-27.22	-2.21
27	28	-3.17	-1.67	-30.39	-2.42
28	28	-3.18	-1.54	-33.57	-2.63
29	28	0.37	0.14	-33.20	-2.55
30	28	-1.27	-0.85	-34.48	-2.61
31	28	-5.24	-1.54	-39.71	-2.95
32	28	-3.64	-1.54	-43.35	-3.17
33	28	0.40	0.12	-42.95	-3.09
34	28	-1.78	-0.51	-44.73	-3.17
35	27	-3.38	-1.19	-48.10	-3.30
36	27	3.68	0.92	-44.42	-3.01

Table 6. Abnormal returns for insurance firms that went public after demutualization

This table presents average adjusted returns (AR_t) and cumulative average adjusted returns ($CAR_{1,t}$), in percent, for the 36 months after going public (excluding the initial return). The sample includes only insurance firms that went public immediately after demutualization as reported in the Best's Insurance Reports. AR_t is calculated as $1/n_t\Sigma(r_{ipo,\ it}-r_{adjusted,\ it})$, where r_{ipo} is the total return on initial public offering firm i in event month t, and $r_{adjusted,\ it}$ is the weighted average returns for stocks of the SIC code 6300-6399 (insurance industry). Alternative adjustments with weighted average returns for matching financial firms yield qualitatively similar results and, therefore, are not reported. The t-statistics for the average adjusted return are computed for each month as $AR_t \cdot \sqrt{n_t} / sd_t$ where AR_t is the average adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted returns for month t. The t-statistics for the cumulative average adjusted return in month t, are computed as $CAR_{1,t} \cdot \sqrt{n_t} / csd_t$, where csd_t is computed as $csd_t = [t \cdot \text{var} + 2 \cdot (t-1) \cdot \text{cov}]^{1/2}$, where t is the event month, var is the average (over 36 months) cross-sectional variance and cov is the first-order autocovariance of the AR_t series (var=0.008011 and cov=0.000928).

Month of seasoning	Number of firms trading	AR_t %	t-stat	CAR_t %	t-stat
1	10	4.37	1.49	4.37	1.54
2	10	-1.03	-0.35	3.34	0.79
3	10	-2.36	-0.76	0.98	0.19
4	10	4.42	0.92	5.40	0.88
5	10	4.30	0.92	9.70	1.41
6	10	2.16	0.84	11.85	1.57
7	10	2.93	1.14	14.78	1.80
8	10	5.83	2.18	20.62	2.35
9	10	-0.97	-0.51	19.65	2.11
10	10	-0.56	-0.30	19.08	1.94
11	10	1.27	0.43	20.36	1.97
12	10	-0.93	-0.44	19.42	1.80
13	10	3.93	1.03	23.35	2.08
14	10	2.79	2.01	26.15	2.24
15	10	2.30	0.87	28.45	2.35
16	10	-0.89	-0.53	27.56	2.21
17	10	-2.38	-1.16	25.18	1.96
18	10	-5.45	-2.56	19.73	1.49
19	10	4.13	1.77	23.86	1.75
20	10	1.97	0.86	25.83	1.85
21	10	-3.15	-1.64	22.68	1.58
22	10	0.51	0.24	23.19	1.58
23	10	-0.51	-0.30	22.69	1.51
24	10	-0.82	-0.56	21.87	1.43
25	10	0.58	0.66	22.45	1.43
26	10	-2.75	-1.18	19.69	1.23
27	10	-5.07	-2.73	14.62	0.90
28	10	0.10	0.04	14.72	0.89
29	10	-0.19	-0.08	14.53	0.86
30	10	-3.77	-1.92	10.76	0.63
31	10	2.81	1.19	13.57	0.78
32	10	3.61	1.60	17.18	0.97
33	10	-0.48	-0.22	16.70	0.93
34	10	-2.61	-0.66	14.09	0.77
35	10	-0.20	-0.07	13.88	0.75
36	10	-0.40	-0.29	13.48	0.72

Table 7. Post-issue abnormal returns for other insurance IPOs

This table presents average adjusted returns (AR_t) and cumulative average adjusted returns ($CAR_{1,t}$), in percent, for the 36 months after going public (excluding the initial return). The sample consists of insurance companies that were already stock companies before initial public offerings as reported in the Best Insurance Reports. AR_t is calculated as $1/n_t\Sigma(r_{ipo,\,it}-r_{adjusted,\,it})$, where r_{ipo} is the total return on initial public offering firm i in event month t, and $r_{adjusted,\,it}$ is the weighted average returns for stocks with the SIC code 6300-6399 (insurance industry). Alternative adjustments with weighted average returns for matching financial firms yield qualitatively similar results and, therefore, are not reported. The t-statistics for the average adjusted return are computed for each month as $AR_t \cdot \sqrt{n_t} / sd_t$ where AR_t is the average adjusted return for month t, n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of the adjusted returns for month t. The t-statistics for the cumulative average adjusted return in month t, are computed as $CAR_{1,t} \cdot \sqrt{n_t} / csd_t$, where csd_t is computed as $csd_t = [t \cdot \text{var} + 2 \cdot (t-1) \cdot \text{cov}]^{1/2}$, where t is the event month, var is the average (over 36 months) cross-sectional variance and cov is the first-order autocovariance of the AR_t series (var=0.015704 and cov=0.0003296).

Month of seasoning	Number of firms trading	AR_t %	t-stat	CAR_t %	t-stat
1	35	1.23	0.47	1.23	0.58
2	35	-0.46	-0.30	0.77	0.26
3	34	-2.56	-2.05	-1.79	-0.47
4	34	-2.53	-1.91	-4.32	-0.99
5	34	-1.58	-0.94	-5.90	-1.21
6	34	-1.72	-0.94	-7.62	-1.42
7	35	1.28	0.63	-6.34	-1.11
8	35	-3.89	-1.76	-10.23	-1.68
9	34	-0.53	-0.27	-10.76	-1.64
10	33	-3.42	-1.85	-14.19	-2.02
11	33	-0.65	-0.33	-14.84	-2.01
12	32	-2.07	-0.98	-16.91	-2.16
13	32	0.90	0.37	-16.01	-1.97
14	31	-0.98	-0.32	-16.99	-1.98
15	31	-2.22	-1.30	-19.21	-2.16
16	31	-5.87	-2.03	-25.08	-2.73
17	31	-1.01	-0.79	-26.10	-2.76
18	30	-0.89	-0.48	-26.98	-2.73
19	30	-0.27	-0.09	-27.25	-2.68
20	30	-1.55	-0.66	-28.80	-2.76
21	30	-2.81	-1.62	-31.61	-2.96
22	30	0.64	0.29	-30.97	-2.83
23	30	-3.39	-1.55	-34.36	-3.07
24	30	-2.45	-1.09	-36.81	-3.22
25	30	-2.30	-1.81	-39.11	-3.35
26	28	-2.40	-1.04	-41.51	-3.37
27	28	-3.03	-1.58	-44.54	-3.55
28	28	-2.95	-1.41	-47.49	-3.72
29	28	0.01	0.00	-47.48	-3.65
30	28	-3.73	-2.53	-51.21	-3.87
31	28	-5.56	-1.64	-56.76	-4.22
32	28	-4.68	-2.12	-61.45	-4.50
33	28	-1.69	-0.53	-63.14	-4.55
34	28	-2.38	-0.69	-65.52	-4.65
35	27	-3.41	-1.16	-68.93	-4.74
36	27	3.26	0.85	-65.67	-4.45

Table 8. Aftermarket performance of Insurance IPOs categorized by types

This table presents average adjusted 3-year cumulative average returns, in percent, for the 36 months after going public (excluding the initial return). The sample consists of insurance companies that were already stock companies before initial public offerings as reported in the Best Insurance Reports. The wealth relative is the ratio of one plus the average IPO 3-year holding period return divided by one plus the mean matching firm 3-year holding period return (excluding initial return).

IPO Type	IPO Average 3-year Total Return (%)	Matching Firm Average 3-year Total Return	Wealth Relative	Sample Size	
				Month 1	Month 36
All insurance IPOs	15.29	43.50	0.803	45	37
Conversion Insurers	74.84	110.28	0.831	10	10
Non-conversion Insurers	-1.25	24.95	0.790	35	27
Life Insurers	58.13	71.69	0.921	17	14
Property-Casualty Insurers	-9.82	26.98	0.710	28	23

Table 9. Ordinary least squares regression results for 3-year total return

This table presents regression results with the 3-year total return as the dependent variable. Return is the raw three year return, measured from the first aftermarket closing price to the earlier of the three-year anniversary or its CRSP delisting date. IR is the market-adjusted initial return, using the CRSP value-weighted index of NYSE-AMEX-NASDAQ stocks as the market index. Proceeds are the offer price multiply by first day trading price. Market is the CRSP value-weighted market return for the same return interval as the dependent variable. Insurance dummy is 1 if it's an insurance sample firm. Conversion dummy is 1 if insurance IPO sample firm underwent demutualization before IPO. Non-conversion dummy is 1 if insurance IPO sample firm is a stock holding firm since establishment. Life dummy is 1 if insurance IPO sample firm is a life insurance firm. Property dummy is 1 if insurance IPO sample firm is a Property & Casualty insurance firm. Standard errors are reported in parentheses. *** and ** denote statistical significance at the 1 and 5 percent levels, respectively.

Summary statistics of variables				
Variables	Mean	Median	Standard Deviation	N
Return	0.040	-0.008	0.714	313
IR	0.164	0.045	0.419	313
Market	0.190	0.062	0.304	313
Proceeds	686,173.79	140,715.50	1,866,088.71	313

Variables	(1)	(2)	(3)	(4)	(5)
Intercept	0.041	0.018	0.031	0.030	0.033
	(0.431)	(0.721)	(0.537)	(0.551)	(0.511)
IR	-0.331***	-0.321***	-0.324***	-0.329***	-0.331***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Market	0.277**	0.284**	0.326**	0.339**	0.322**
	(0.038)	(0.028)	(0.014)	(0.010)	(0.016)
Insurance Dummy	0.006				
	(0.960)				
Conversion Dummy		0.649***	0.628***	0.265	0.483
		(0.003)	(0.005)	(0.326)	(0.229)
Non-Conversion Dummy			-0.178	-0.325**	-0.346**
			(0.157)	(0.020)	(0.016)
Life Dummy				0.518**	0.607**
				(0.021)	(0.018)
Conversion × Life					-0.400
					(0.463)
Adjusted R^2	0.048	0.074	0.077	0.090	0.090
N	313	313	313	313	313

Table 10. Post-issue operating performance of all insurance IPOs

This table presents changes in post-issue operating performance of insurance firms making public offerings during the sample period. EBIT/TA is operating income before depreciation minus depreciation scaled by total asset. CF/TA is income before extraordinary item plus depreciation scaled by total assets. The industry-adjusted change/growth for a given firm is the deviation from the contemporaneous industry median. Year 0 is the fiscal year preceding the year in which the firm goes public. Change of investment is measured from cash flow statement (data113).

Operating performance	Year relative to completion of IPO					
	N	0 to +1	N	0 to +2	N	0 to +3
EBIT/TA						
Median percentage change (%)	19	4.091	17	-5.392	16	-12.730
Industry-adjusted change (%)		14.254		-1.151		-6.261
CF/TA						
Median percentage change (%)	28	-2.029	26	-20.770	25	-44.322
Industry-adjusted change (%)		1.632		-0.506		-22.568
Increase of Investments						
Median percentage change (%)	23	-14.795	22	-17.470	21	-18.113
Industry-adjusted change (%)		-23.917		-32.486		-42.796
Expense Ratio						
Median percentage change (%)	28	-0.062	26	0.040	25	1.903
Industry-adjusted change (%)		-0.756		0.240		2.367

Table 11. Post-issue operating performance of insurance firms by type of conversion

This table presents changes in post-issue operating performance of insurance firms making public offerings during the sample period. A firm is classified as conversion (Conversion Type = Y), if Best's Insurance Reports indicate that the firm underwent demutualization before initial public offerings whereas a firm is defined as non-conversion (Conversion Type = N), if Best's Insurance Reports indicate that a firm is organized as stock holding firm since establishment. EBIT/TA is operating income before depreciation minus depreciation scaled by total asset. CF/TA is income before extraordinary item plus depreciation scaled by total assets. The industry-adjusted change/growth for a given firm is the deviation from the contemporaneous industry median. Year 0 is the fiscal year preceding the year in which the firm goes public. Change of investment is measured from cash flow statement (data113).

Panel A: Conversion insurers

Operating performance	Year relative to completion of IPO					
	N	0 to +1	N	0 to +2	N	0 to +3
EBIT/TA						
Median percentage change (%)	7	-1.811	7	7.276	6	-5.938
Industry-adjusted change (%)		21.844		3.503		13.449
CF/TA						
Median percentage change (%)	10	-14.047	10	0.038	10	-30.120
Industry-adjusted change (%)		4.927		20.281		-13.284
Increase of Investments						
Median percentage change (%)	10	-12.554	10	7.014	10	41.906
Industry-adjusted change (%)		-25.898		-18.432		-31.766
Expense Ratio						
Median percentage change (%)	10	-0.071	10	-1.045	10	-1.090
Industry-adjusted change (%)		-1.716		-3.411		-1.560

Panel B: Non-conversion insurers

Operating performance	Year relative to completion of IPO					
	N	0 to +1	N	0 to +2	N	0 to +3
EBIT/TA						
Median percentage change (%)	12	5.854	10	-36.504	10	-61.818
Industry-adjusted change (%)		10.563		-14.409		-17.420
CF/TA						
Median percentage change (%)	18	-1.582	16	-23.179	15	-57.494
Industry-adjusted change (%)		4.699		0.761		-20.783
Increase of Investments						
Median percentage change (%)	14	-28.603	12	-35.209	11	-30.491
Industry-adjusted change (%)		-23.917		-41.535		-50.316
Expense Ratio						
Median percentage change (%)	18	0.251	16	1.597	15	7.170
Industry-adjusted change (%)		1.144		3.252		10.289

Table 12. Market expectation and earnings performance of insurance IPOs

Panel A shows the median changes for insurance IPOs during 1972-2004. The market-to-book ratio of equity (M/B) is defined as the market value of equity to the book value of equity. The price-to-earnings ratio (P/E) is the ratio between stock prices at fiscal year end to earnings per share. The industry-adjusted change for a given firm is the deviation from the contemporaneous industry median. Year 0 is the first fiscal year after IPO. Panel B reports median changes for conversion insurance firms (Conversion Type = Y), i.e., those that Best's Insurance Reports indicate that the firm underwent demutualization before initial public offerings. Panel C reports median changes for firms that are defined as non-conversion (Conversion Type = N), i.e., those that Best's Insurance Reports indicate that a firm is organized as stock holding firm since establishment.

Panel A: All insurance IPOs

		Year relative to completion of IPO				
Variables	N	0 to +1	N	0 to +2	N	0 to +3
M/B Ratio of Equity						
Median percentage change (%)	28	-12.652	26	-17.528	25	-23.446
Industry-adjusted change (%)		-3.485		-4.559		-6.252
Price-Earnings Ratio (P/E)						
Median percentage change (%)	27	-13.492	25	-22.695	24	-19.009
Industry-adjusted change (%)		10.609		-6.503		-6.483
Earnings Per Share (EPS)						
Median percentage change (%)	27	-6.250	25	-6.464	24	-23.985
Industry-adjusted change (%)		-18.340		-5.066		-35.645

Panel B: Conversion insurers

		Year relative to completion of IPO				
Variables	N	0 to +1	N	0 to +2	N	0 to +3
M/B Ratio of Equity						
Median percentage change (%)	10	-6.939	10	6.248	10	-2.389
Industry-adjusted change (%)		6.526		25.273		9.751
Price-Earnings Ratio (P/E)						
Median percentage change (%)	9	-8.940	9	12.067	9	-21.268
Industry-adjusted change (%)		-4.600		-7.808		-10.049
Earnings Per Share (EPS)						
Median percentage change (%)	9	1.550	9	3.333	9	26.592
Industry-adjusted change (%)		3.664		3.505		18.793

Panel C: Non-conversion insurers

		Year relative to completion of IPO				
Variables	N	0 to +1	N	0 to +2	N	0 to +3
M/B Ratio of Equity						
Median percentage change (%)	18	-25.790	16	-34.572	15	-24.597
Industry-adjusted change (%)		-15.834		-20.794		-15.910
Price-Earnings Ratio (P/E)						
Median percentage change (%)	18	-24.467	16	-29.422	15	-16.750
Industry-adjusted change (%)		10.706		-6.178		-2.943
Earnings Per Share (EPS)						
Median percentage change (%)	18	-10.436	16	-22.930	15	-58.879
Industry-adjusted change (%)		-22.428		-25.080		-55.908

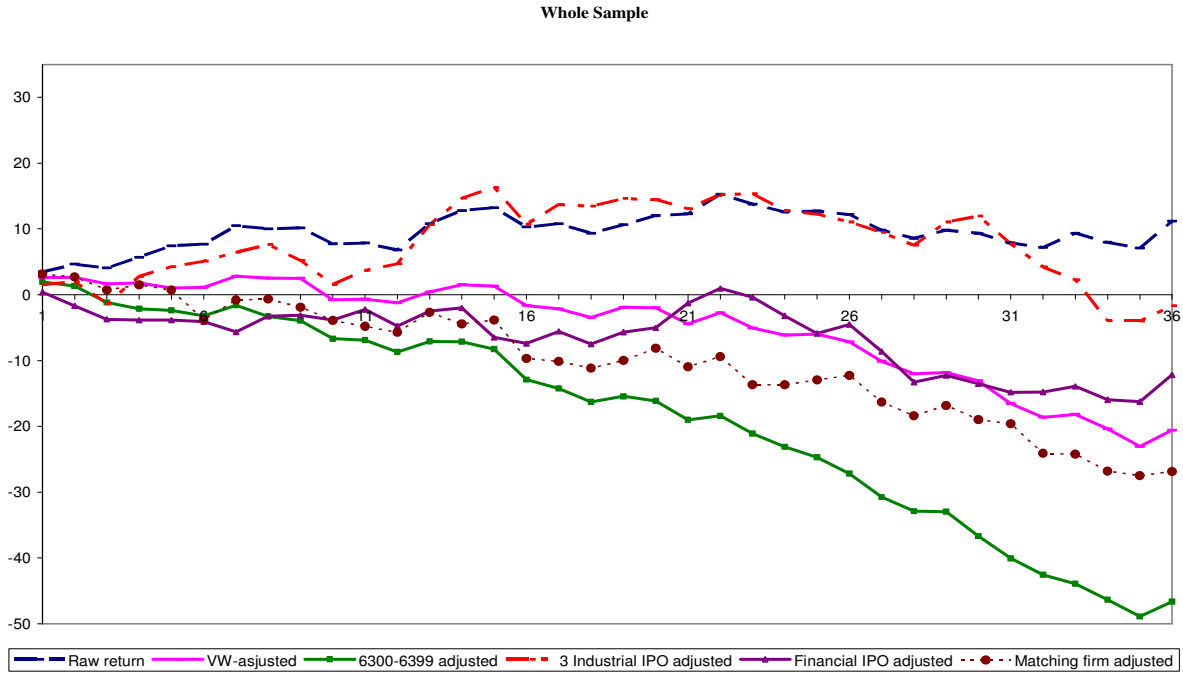
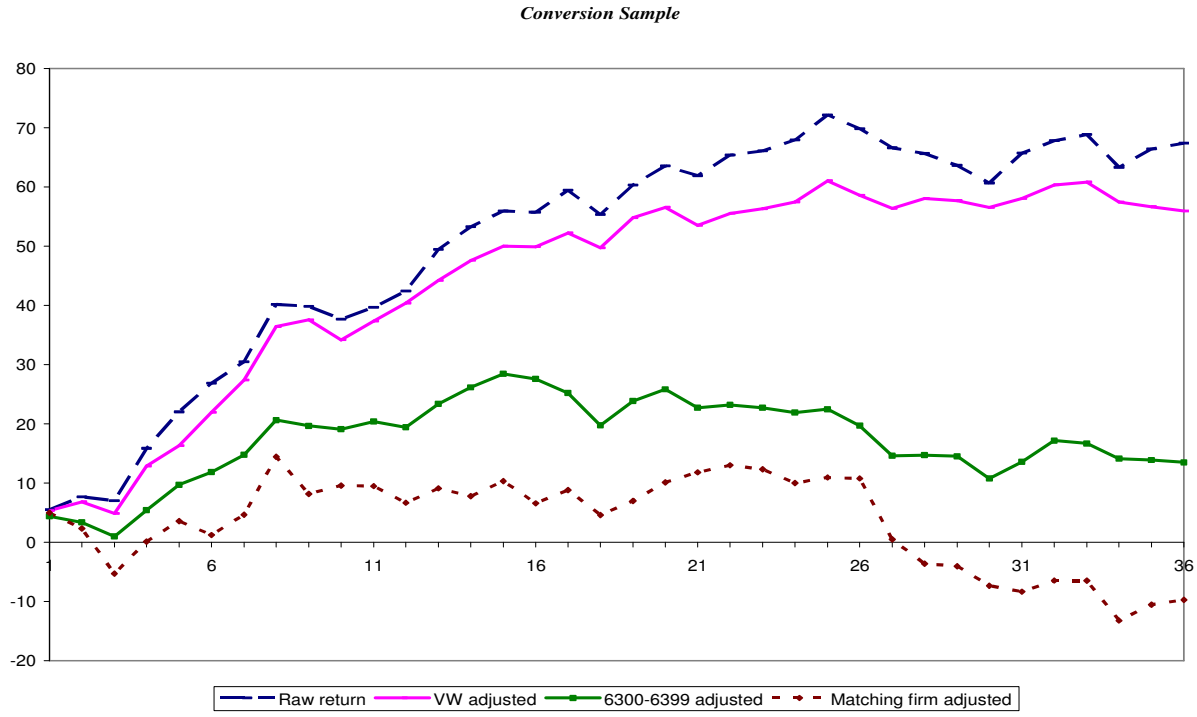


Figure1. Cumulative average adjusted returns for an equally-weighted portfolio of 46 insurance initial public offerings in 1972-2004.

Six CAR series are plotted for the 36 months after the IPO date: 1) no adjustment (raw returns), 2) CRSP value-weighted NYSE-AMEX-NASDAQ index adjustment, (VW-adjusted), 3) CRSP value-weighted SIC code 6300-6399 adjustment (insurance industry), 4) 3-industrial IPO adjustment, 5) 3-financial IPO adjustment, 6) matching firm adjustment. Month 0 is the initial return interval.



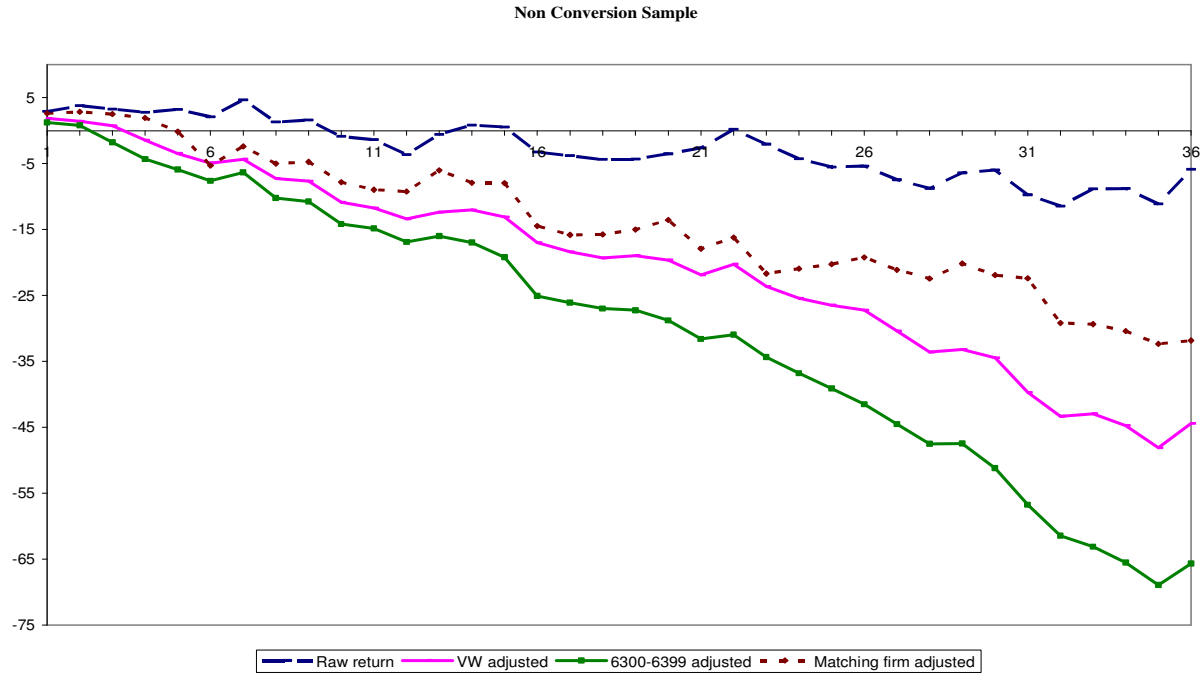


Figure 2. Cumulative adjusted returns (CAR) for insurance IPOs by type of conversion

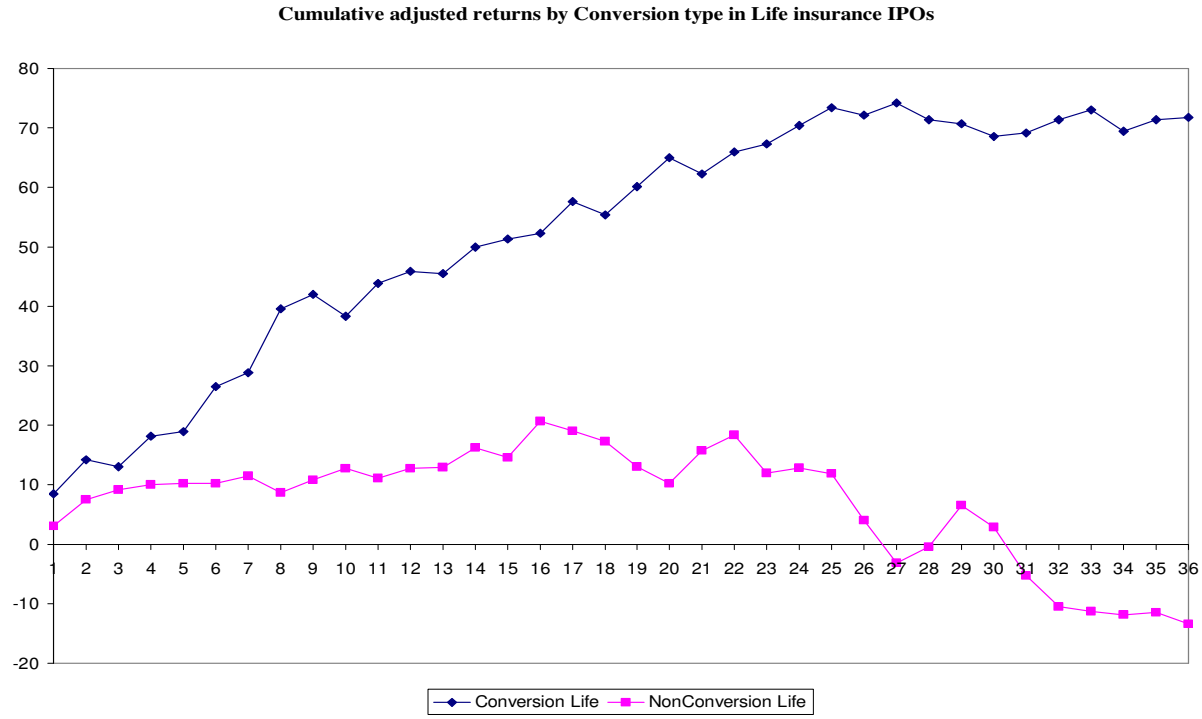


Figure 3. Cumulative adjusted returns (CAR) by types of insurance business