

**EVOLUTION OF MUTUAL INSURANCE COMPANIES: BALANCING
TRADITION WITH MODERN CHALLENGES**

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ABSTRACT

Mutual insurance companies, which are owned by their policyholders rather than shareholders, have demonstrated remarkable resilience and longevity, making them some of the industry's strongest and most enduring entities. However, with rapid technological advancements, challenging market conditions, unprecedented catastrophic losses, and an ever-evolving and complex regulatory landscape, mutuals face the pressing question of adapting and ensuring their continued relevance. This research was conducted during a remarkable time for the industry to explore strategies that address these multifaceted challenges while preserving mutuals' unique value proposition rooted in policyholder ownership and community focus.

This dissertation involved examining the mutual holding company (MHC) structure and its potential to enable insurers to adapt to changing market dynamics while maintaining the core values of mutuality. An MHC is a hybrid organizational structure that allows a mutual insurer to preserve policyholder ownership while gaining access to greater financial and competitive flexibility. The insurer's adoption of a mutual holding structure approach provides a pathway for mutual companies to innovate, raise capital, and expand operations while maintaining the foundational ethos of serving policyholder interests.

A quantitative approach, focusing on data analysis of financial performance, surplus management, and underwriting outcomes, was utilized in this research to evaluate the strategic and operational impacts of adopting a mutual holding structure. By examining key financial metrics, such as surplus-to-assets ratios, underwriting gains, premium growth, and operating ratios, the aim of the study was to uncover patterns and

trends that indicate this structure's economic viability and competitive advantage. The analysis situates these findings within significant periods marked by economic volatility, technological advancements, and regulatory shifts, providing a data-driven assessment of how mutuals, can leverage innovative structures while maintaining financial stability and policyholder value. This study is highly relevant for all the constituents in the mutual insurance community. It offers practical and strategic insights into sustainable pathways for mutual insurance organizations. The findings could equip these stakeholders with a deeper understanding of the motivations behind structural transitions and the potential outcomes of adopting a mutual holding company model, supporting informed decision-making in an evolving industry landscape.

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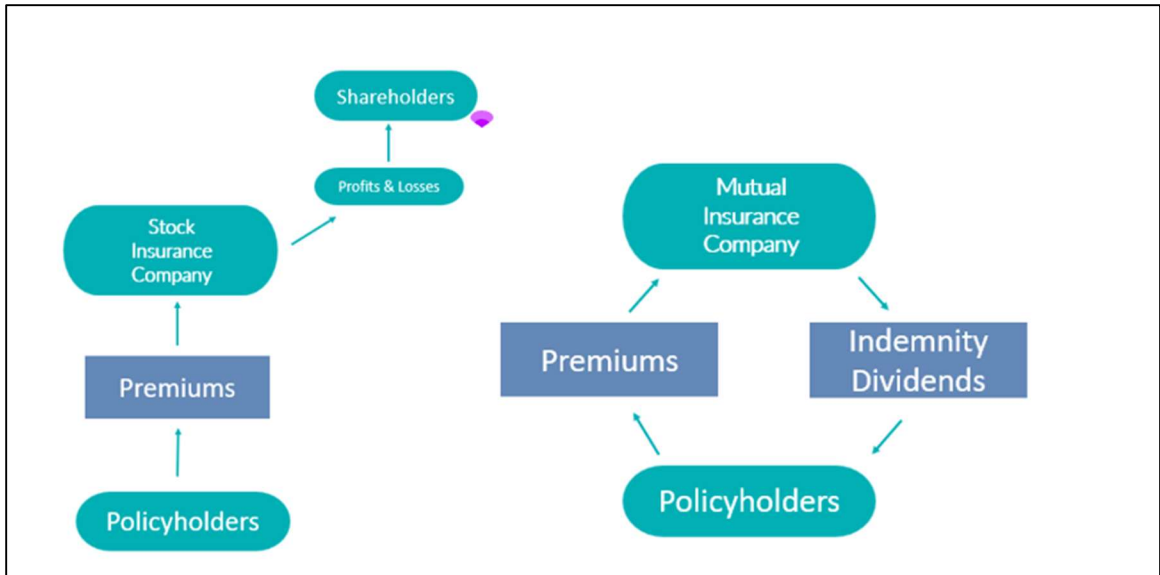
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CHAPTER 1

INTRODUCTION

The word “insurance” often prompts a less-than-enthusiastic reaction, yet it plays a vital role in the daily lives of individuals across the United States. From health and auto policies to life and accident coverage, insurance serves as a key tool for managing personal and financial risk. Though it may not be well-loved, its presence is deeply embedded in the routines and responsibilities of modern life. The significance of insurance lies in its role as a financial safeguard, mitigating the impact of significant events in the lives of individuals and businesses. Although insurance is a fundamental part of daily life, many policyholders may not give much thought to the organizational structure of the companies from which they purchase their policies. Insurance companies are generally organized in one of two ways: as stock companies or mutual companies. Although both types of entities provide policies to the insureds, their ownership structures and operational options differ significantly, shaping their strategies and priorities. Figure 1 is an illustration of the differences between stock and mutual company structure’s ownership.



(A) Stock Insurance Company

(B) Mutual Insurance Company

Figure 1. Stock Structure Versus Mutual Structure.

Note. A comparison of mutual and stock insurance company structures.

Although both stock and mutual insurance companies are corporations under state law, they differ significantly in ownership structures and opportunities for growth, capital, and expansion. Additionally, they also show operational, governance, product offerings, and strategy differences.

Ownership Structure

Stockholders are the owners in a stock company (see Figure 1A). Policyholders in this structure do not have ownership unless they also hold company stock. They contribute to the stock company by purchasing insurance and paying premiums, but their relationship is strictly contractual—they are indemnified for covered claims as per their policies. Profits and losses in a stock company flow to the shareholders, reflecting their financial stake in its performance. Ownership is determined by the proportion of the

company's shares an individual (or entity) owns, representing a share of the firm's total assets. A stock company can also generally choose the type of stock it issues, influencing ownership and voting rights. Common stock, the most widely issued type of stock, typically grants voting rights to shareholders. Votes are usually proportional to the number of shares owned, giving more significant shareholders greater control over company decisions. Holders of common stock also have a residual claim on the company's assets, meaning they are paid after creditors and preferred shareholders in the event of liquidation (Damodaran, 2012). However, common stock is only one example, and the flexibility to issue different types of stock enables stock companies to tailor their capital-raising strategies to their specific needs, balancing control considerations, investor preference, and governance structure.

Under a mutual model, a mutual company is distinct because the policyholders are the organization's owners. As shown in Figure 1(B), mutual carriers rely on premiums from insurance contracts as their primary source of capital and growth, given their inability to access equity capital through the capital markets. As the organization's owners, policyholders share in its profits through dividends or premium refunds. In the event of losses, these dividends may be reduced, and premiums adjusted upward to account for anticipated higher loss expectations. There are no separate stockholders under this structure. Mutual policyholders' ownership rights begin upon policy issuance and end on termination (Cummins et al., 1997). The policyholders contribute capital through premium payments, can make claims on the company's residual value, and bear the associated risk of insolvency. The difference between a mutual structure and a stock company is that insolvency risk for a mutual policy owner is a loss of coverage or a loss

of a claim payment if, for example, a house burns down, and the company does not have enough money to pay its claims. In contrast, an insurer's insolvency to an owner of a stock company is the lost value of any investment. Mutual policyholders also control the company's governance and elect a board of directors to act as company managers. Policyholder votes are generally based on the number of policies one holds, so it is one vote per policy. Once this board is elected, it then appoints managers to oversee the operational aspects of the organization, with the expectation that it will be managed for the benefit of the policyholders (Mayers & Smith, 1984).

Mutual insurance companies, such as stock companies, have options within their structural framework to increase surplus, expand operations, or acquire other mutual or stock organizations. However, these opportunities are significantly more constrained and subject to stricter regulatory and operational limitations, making the processes more complex and less flexible than stock companies. Mutuals are extremely limited in how they can increase their surplus outside of positive net earnings and investment income. An important exception is a surplus note, which is a unique financial instrument insurance companies use to raise capital. These notes are considered subordinated debt and are classified as surplus rather than liabilities on the insurer's balance sheet, helping bolster the company's surplus for regulatory purposes (National Association of Insurance Commissioners [NAIC], 2023b). The market for surplus notes is relatively limited compared to other debt instruments. They are typically issued in private placements or to a narrow range of institutional investors familiar with the insurance industry. These investors often require higher yields due to the subordinated nature of the notes, as surplus notes are repaid only after all policyholder obligations and other liabilities have

been met (Cummins & Weiss, 2010). This limited market can pose challenges for insurers in terms of accessibility and pricing.

The issuance and repayment of surplus notes involve a complex and heavily regulated process. In most jurisdictions, insurers must obtain prior approval from state insurance regulators before issuing surplus notes, ensuring the transaction aligns with statutory requirements and does not jeopardize the company's financial stability (NAIC, 2023a). Repayment is similarly cumbersome, as principal and interest payments require regulatory approval to ensure the company maintains sufficient surplus to meet policyholder obligations. This process can delay or restrict payments, making surplus notes less flexible than traditional debt instruments.

Insurers must also adhere to restrictions on using funds raised via surplus notes, typically requiring them to be used to support the company's overall financial health. Although surplus notes help bolster an insurer's surplus, there are limits to their utility. Regulatory guidelines often impose caps on the proportion of surplus notes relative to total surplus to prevent over-reliance on this type of capital. Additionally, the subordinated nature of surplus notes means that they do not offer the same level of protection for policyholders as other forms of capital, which can influence regulatory and investor perceptions (Lynch et al., 2024)

Acquisitions involving mutual insurers typically occur in one of two ways: by acquiring a stock company or by affiliating with another mutual. Unlike stock companies, mutuals cannot outright acquire another mutual due to structural and regulatory constraints. Instead, they often pursue affiliations, which provide a strategic partnership or resource-sharing arrangement without the full integration of a merger. This approach

allows mutuals to collaborate while maintaining independent legal entities and preserving mutual ownership. Although affiliations can unlock operational efficiencies, market expansion, and financial stability opportunities, they come with considerable complexity and limitations. Affiliations require mutual companies to pool resources, share expertise, or align business strategies, often through joint governance agreements or group memberships. These arrangements preserve the mutual model while enabling cooperation. However, the process is heavily regulated. Insurance regulators in the respective states must review and approve the affiliation to ensure it complies with statutory requirements, protects policyholders, and safeguards the mutual status of both entities. This regulatory oversight can be a time-consuming and burdensome process. Moreover, because mutual affiliations do not result in full integration, the entities must operate as distinct organizations, which can hinder the realization of potential synergies. Governance complexities and the need for ongoing coordination between the entities also present long-term challenges. (Mayer Brown, 2021).

When a mutual chooses to acquire a stock carrier, it can do so by holding the acquired company as an investment. Although this approach avoids some of the structural hurdles associated with affiliating with another mutual, it introduces its set of limitations. First, funding the acquisition often requires significant financial resources. If the mutual does not have sufficient cash reserves, it may need to rely on external financing options, such as bank loans or surplus notes. Bank loans are typically limited by a percentage of the mutual's surplus, which can restrict the acquisition size. Similarly, despite providing an alternative funding source, surplus notes come with many constraints, as outlined earlier.

Another significant limitation is the issue of asset concentration, which occurs when one singular asset makes up an outsized portion of the carrier's assets. Regulators may impose guidelines on the concentration of assets in regulated carriers to protect policyholders and ensure the financial stability of the acquiring mutual (PwC 2024). These limits can restrict the size of the acquisition, mainly if the acquired company represents a substantial proportion of the mutual's overall portfolio. This constraint not only impacts the scale of potential acquisitions, but also limits the flexibility of mutuals to leverage their investments fully. Though acquisitions and affiliations offer mutual insurers a pathway to growth and diversification, they are fraught with operational, financial, and regulatory hurdles. Mutuals must carefully evaluate these challenges to ensure that any acquisition or affiliation aligns with their long-term strategic goals and regulatory obligations.

Operational Differences

Mayers and Smith (1986) provided a comprehensive analysis of how ownership structures—namely stock and mutual companies—fundamentally influence operational dynamics in the insurance industry. In their work, they explored the effects of these ownership models on managerial roles, risk-bearing responsibilities, policyholder involvement, and strategic approaches. Grounded in foundational economic theories, insights into transaction costs, and Jensen and Meckling's (1976) agency conflict framework, their study underscored the distinct contracting costs and agency challenges faced by stock and mutual insurers. By emphasizing key areas, such as governance structures, risk-sharing mechanisms, and policyholder participation, Mayers and Smith

constructed a theoretical framework for understanding how structural differences shape company operations and strategic behaviors.

A core focus of Mayers and Smith's (1986) research was the divergence in managerial dynamics between stock and mutual companies, particularly the agency conflicts arising from the separation of ownership and management. The structural distinctions between mutual and stock insurance companies can be further examined through their implications for operations, governance, pricing strategies, and product complexity. Mutual insurance companies prioritize delivering value to policyholders, focusing on lower premiums, enhanced benefits, and long-term financial stability. This conservative operational approach aligns with their risk-averse nature, with earnings often reinvested for the collective benefit of policyholders (Mayers & Smith, 1986). In contrast, stock insurers prioritize maximizing shareholder returns, often pursuing aggressive growth strategies and cost-cutting measures to enhance profitability. Their higher risk tolerance and access to capital markets facilitate bold initiatives, such as entering new markets or developing complex products (Jensen & Meckling, 1976). Decision-making processes also reflect these operational philosophies. A mutual company's focus on policyholder interests may result in slower innovation and cautious strategic planning. Conversely, stock insurers operate under market scrutiny, driving quicker decisions and innovation to maintain competitiveness (Mayers & Smith, 1988).

Governance Differences

The ownership structure of an insurer significantly influences its governance framework. In mutual companies, policyholders collectively own the organization and elect board members, theoretically aligning managerial objectives with policyholder

interests. However, in practice, the diffuse nature of ownership results in low voter participation and limited direct policyholder influence over strategic decisions (Mayers & Smith, 1986). Without the external discipline of the stock market, mutual insurers depend on governmental oversight and internal governance frameworks to ensure accountability.

In contrast, stock insurers operate under market-driven governance, where shareholders exert influence through voting rights and financial performance expectations. This structure fosters a more centralized and assertive governance model, focused on maximizing shareholder value. Board composition further reflects this distinction—mutual boards often include policyholder representatives and prioritize financial stability and service quality (Hansmann, 1985). It is common for board members to be local agents, or for their bylaws to require board members to also be a policyholder. Alternatively, stock insurer boards are typically composed of financial experts who emphasize profitability and investor returns.

State insurance regulators also play a crucial role in governance by enforcing solvency requirements, investment restrictions, and corporate governance standards to protect policyholders. However, without the market-driven pressures in stock insurers, mutual insurers may experience slower decision-making and less aggressive managerial oversight as regulators tend to be more reactionary—only interjecting themselves when a company is in distress (Fama & Jensen, 1983). Unlike institutional investors in stock companies—who have direct financial stakes and leverage—policyholders in mutuals lack similar incentives to actively engage in governance, often resulting in a passive oversight dynamic (Hansmann, 1985). Additionally, mutual insurers do not operate

within a takeover market, a key mechanism for enforcing accountability in stock insurers (Mayers & Smith, 1994).

In stock companies, underperformance can lead to shareholder activism or hostile takeovers, driving leadership changes and operational restructuring. In contrast, mutual insurers rely on regulatory intervention rather than investor pressure to enforce leadership accountability, reducing external motivation for performance optimization. Although stock insurers are also subject to regulatory oversight, they operate under the additional discipline of market forces, whereas mutual insurers depend more heavily on regulators to ensure financial stability and governance accountability. As a result, although mutual governance structures prioritize long-term stability and policyholder benefits, they may lack the efficiency and responsiveness of stock insurer governance models (Mayers & Smith, 1988).

Compensation structures within mutual insurers also reinforce their conservative approach to management. Without stock-based incentives, executives in mutual insurance companies typically receive fixed salaries and bonuses tied to long-term financial stability rather than short-term profitability. This compensation model discourages excessive risk-taking and fosters financial prudence but may also lead to managerial complacency or inefficiencies, as there is no direct pressure to maximize short-term returns. Unlike stock insurers, where executives are often incentivized through performance-based compensation linked to earnings growth, return on equity, and stock performance, mutual insurers focus on policyholder surplus preservation rather than maximizing investor returns.

Product Complexity and Innovation

Product offerings reflect the operational and governance priorities of mutual and stock insurers. Mutual companies tend to offer simpler, standardized products, such as auto and property insurance, which benefit from historical data and predictable risks. This aligns with their conservative risk appetite and focuses on minimizing managerial discretion (Mayers & Smith, 1986). Stock insurers, driven by the need for higher returns, develop diverse and complex products to capture niche markets. These offerings often require advanced expertise and greater risk tolerance, reflecting their willingness to innovate and adapt to market demands (Cummins & Doherty, 2006). The slower adoption of innovative products by mutual companies stems from their focus on stability and administrative efficiency. In contrast, stock insurers prioritize rapid innovation to maintain a competitive edge, meeting shareholder expectations and capturing emerging opportunities (Powell, 2017). This dichotomy underscores the strategic divergence between the two structures, with mutuals prioritizing policyholder value and stock insurers emphasizing profitability.

Pricing Strategy Differences

Pricing strategy also differ between mutual carriers and stock carriers considering their goals for pricing, profit margin, and risk. Mutuals generally prioritize equitable and stable pricing, which specifically benefit the policyholder base. Stockholder's, whose focus is shareholder returns, utilizes more dynamic pricing that seeks to maximize profit and their competitive positioning. This translates to differing economic performance between a mutual and a stock company.

The National Association of Mutual Insurance Companies (NAMIC), 2024 Mutual Factor Report included a comprehensive comparison of the financial and operational metrics between mutual and stock insurers, highlighting the distinct priorities and performance outcomes of these two models. Mutual insurers consistently focus on policyholder benefits and long-term stability, whereas stock insurers prioritize profitability and market growth. The combined ratio is a critical metric for evaluating underwriting profitability in the insurance industry. Although typically expressed as a percentage or ratio, it can be visualized as a dollar to clarify its implications. For every dollar an insurer earns in premiums, portions are allocated to various expenses. A significant share is used to pay claims for covered losses, whereas additional amounts are spent on loss adjustment expenses related to evaluating and settling claims. Further expenses include commissions to agents and brokers and operational costs necessary to run the business. Insurers aim to spend less than a dollar for every dollar earned in premiums. For example, a combined ratio of 95% indicates that the insurer spends 95 cents on claims and expenses for every dollar earned, leaving 5 cents as underwriting profit. Conversely, a ratio above 100% means the insurer is spending more than it earns, resulting in an underwriting loss.

Mutual insurers reported an average combined ratio of 105.3% between 2019 and 2023, including 109.9% in 2023. In contrast, stock insurers maintained significantly lower combined ratios, averaging 97.0% over the same period, with a ratio of 96.1% in 2023. Alldredge et al.'s (2024) report also highlighted the divergence in loss ratios, which measure the proportion of claims paid relative to premiums earned. Mutual insurers had an average loss ratio of 78.6% over 5 years, compared to 63.7% for stock insurers

(Alldredge et al., 2024). Additionally, mutuals reported higher expense ratios, averaging 26.6% compared to 26.0% for stock insurers. Regarding growth, stock insurers demonstrated higher average annual growth in net written premiums, achieving a rate of 6.5% between 2018 and 2022, compared to 5.3% for mutual insurers. Stock insurers outperformed mutuals in investment income, with a 5-year average investment income ratio of 6.2%, compared to 4.3% for mutuals. This disparity indicates a higher appetite for risk and a focus on maximizing returns in stock insurers' investment strategies (Alldredge et al., 2024).

The metrics presented in Alldredge et al.'s (2024) report illustrate the contrasting approaches of mutual and stock insurers. Mutual insurers prioritize policyholder benefits, long-term stability, and equitable claims management, which leads to higher combined and loss ratios. In contrast, stock insurers focus on profitability, market growth, and shareholder value, achieving lower combined ratios, faster growth, and higher investment returns. These differences reflect the foundational philosophies of each model, with mutuals emphasizing community and policyholder well-being and stocks focusing on financial performance and market competitiveness (Alldredge et al., 2024). The difference raises the question of whether there is a viable "middle ground" in the organizational design of insurance companies—a structure that balances the flexibility and decisiveness of a stock company with the policyholder alignment and long-term focus of a mutual company. Such a hybrid model would ideally empower management with the agility to respond to market opportunities and make strategic decisions while ensuring that these decisions are guided by the overarching goal of delivering sustained value to policyholders that aligns more closely with the market.

CHAPTER 2

MOTIVATION FOR RESEARCH

At first glance, it might seem counterintuitive for a company to choose or sustain a mutual structure rather than transitioning to or operating as a stock company. Stock companies, with their ability to access capital markets, pursue aggressive growth strategies, and reward shareholders, may appear to offer clear advantages in flexibility and financial potential. However, to fully appreciate the value and relevance of mutual insurance companies, it is essential to understand the origins and purpose behind their creation and the assets they command today.

History of Mutuals

Mutual insurance companies were established with a singular purpose: to benefit their policyholders by addressing specific community needs and providing a mechanism for collective protection. Historically, mutuals have been deeply rooted in the communities they serve, often targeting specific demographics or regions and fostering a sense of solidarity amongst members. This community-driven ethos is a defining characteristic of mutuals, emphasizing their role as protectors of shared interests and contributors to local resilience. The mutual insurance industry dates to the 1700s and includes some of the oldest and most enduring companies in the United States. The first mutual insurance company in the United States, the Philadelphia Contributionship, was founded in 1752 by Benjamin Franklin (The Philadelphia Contributionship, n.d.). Its creation arose from a pressing community need within the small but growing city of Philadelphia, then home to approximately 15,000 residents (The Philadelphia Contributionship, n.d.). Despite taking preventative measures against fires, the city

continued to suffer devastating losses. The residents recognized that by pooling their resources and sharing the risks, they could collectively protect those affected when fires occurred. This innovative approach provided not just financial protection but also a framework for mutual support and community well-being.

Baltimore Equitable Insurance, founded in 1794 in Baltimore, Maryland, is another early example of a mutual insurance company addressing community needs. Similar to the Philadelphia Contributionship, it was established to protect residents from the recurring devastation of fire. The company pioneered perpetual insurance policies, offering indefinite coverage in exchange for a one-time premium, reflecting the mutual insurance ethos of long-term stability and affordability. This innovative approach provided a sustainable solution to the financial challenges of the late 18th century, emphasizing shared risk and community protection. By pooling resources and distributing risk among members, Baltimore Equitable created a dependable safety net during a time of economic uncertainty. Its perpetual policies offered security and peace of mind, highlighting the mutual model's focus on community responsibility and policyholder interests (Baltimore Equitable Insurance, n.d.). As one of the oldest mutual insurance companies still in operation, Baltimore Equitable stands as a testament to the enduring value of the mutual model, which prioritizes long-term benefits for policyholders over short-term profits.

The above examples are not unique to these two companies as many other mutuals exist and were founded on the same principals and history. These stories illustrate how mutual insurers have historically fostered resilience, trust, and collective protection within their communities. Mutuals have created a foothold due to age, but

some mutuals have also obtained massive economies of scale in the industry. Most notable is State Farm. State Farm Insurance, founded in 1922 by retired farmer George J. Mecherle in Bloomington, Illinois, began as a mutual automobile insurance company for farmers. The mutual insurance model was central to Mecherle's vision, where policyholders were also the owners, sharing in both the profits and risks of the company. This structure allowed State Farm to offer lower premiums to rural drivers, who were statistically safer than their urban counterparts. State Farm quickly expanded beyond its rural roots. By 1928, the company had broadened its offerings to include life insurance, and in 1935, it entered the homeowners' insurance market. This diversification strategy was instrumental in State Farm's rapid growth. Throughout the mid-20th century, State Farm expanded its services, adding health insurance, banking, and mutual funds to its portfolio. The mutual ownership structure provided stability and a strong alignment of interests between State Farm and its policyholders, which supported its growth. By the 1940s, State Farm had established itself as a significant player in the insurance industry, becoming the largest auto insurer in the United States by 1942, a title it has retained for decades. The mutual structure, where profits were reinvested into the company or returned to policyholders, allowed State Farm to build a loyal customer base and invest in extensive agent networks nationwide (Gibson, 2022).

In the subsequent decades, State Farm continued to grow, focusing on innovation, and adapting to changes in the market. The company embraced technology, developing one of the first insurance apps and an online presence, which helped maintain its competitive edge. Today, State Farm is the largest property and casualty insurance provider in the United States, a position it has held for many years. As of 2023, State

Farm had over 58,000 employees and more than 19,000 agents. The company services about 83 million policies and accounts, including auto, fire, life, health, commercial insurance, and financial services. State Farm's extensive network of agents and its strong financial position—boasting assets exceeding \$300 billion (about \$920 per person in the United States)—underscores its scale and influence in the insurance industry (Gibson, 2022).

The median age of mutual insurance carriers is an impressive 120 years, reflecting their longevity and resilience in an ever-changing industry. Though mutuals continue to evolve and expand, they remain deeply rooted in their foundational principles, focusing on specific markets and excelling in their chosen niches. These niches often include agriculture, church ministries, perpetual policies, and military personnel—areas that are frequently overlooked by larger insurers due to their perceived risk exposure or limited profitability in the eyes of shareholders. Mutuals have a distinct advantage in their deep expertise and long-standing commitment to their core business lines. Decades, and often centuries, of experience have allowed them to refine their approach, building trust and delivering consistent value to their policyholders.

Mutuals in Modern Times

Stock companies and mutual companies have coexisted for a long time, each commanding a significant portion of market share. Mutuals accounted for 26.2% of the global market share and held 19.1% of the non-life insurance space in 2021 (ICMIF, 2024). From 2007 to 2021, the mutual sector experienced premium growth of 46.3%, outpacing the overall market growth of 36.8% (ICFM, 2024). These companies manage over 1 trillion dollars in premiums and 10 trillion dollars in assets, serve over 1 billion

policyholders worldwide, and employ over 1 million people. Mutual companies in the United States hold 40.8% of the market share and rank globally among the top 10 insurance markets (ICFM, 2024).

Mutual insurance companies are navigating significant challenges from multiple fronts. These include competition from new and emerging market entrants, the increasing frequency and severity of catastrophic events, the impact of social inflation on claims costs, and the strain of outdated technology systems. Additionally, mutuals face talent shortages and a wave of retirements, all while contending with ongoing regulatory pressures that add complexity to their operations, none of which is limited to mutual carriers. As discussed, past mutuals have offered relatively simple products that did not require extensive differentiation or sophisticated management technology. This is consistent with the Mayers and Smith (1986) analysis that showed the mutual product portfolio requires little managerial discretion. However, the emergence of technologically disruptive insurance companies, such as Lemonade, Hippo, and Ladder, challenges the status quo.

The rise of InsureTech-driven disruptors, primarily structured as stock insurance carriers, is reshaping the insurance industry by leveraging advanced technologies and artificial intelligence (AI) to deliver customer-centric solutions. These disruptors capitalize on rapidly evolving customer expectations, emphasizing speed, convenience, and personalized offerings. This evolution poses significant challenges to the traditional mutual insurance model, which is rooted in long-term stability and policyholder benefits. InsureTech companies are meeting the modern consumer's demand for seamless digital experiences by deploying AI-driven underwriting, claims automation, and predictive

analytics. Tools such as machine learning algorithms allow these companies to analyze vast datasets, tailoring products to individual risk profiles and offering dynamic pricing models. Such innovation has set a high standard for convenience and customization, forcing traditional mutuals to adapt or risk losing market share (Catlin & Lorenz, 2017).

The property and casualty (P&C) insurance industry faced significant financial challenges in 2022, impacting both mutual and stock insurers (Hartwig, 2023). These challenges were characterized by substantial underwriting losses and a decline in investment income, which together exerted pressure on insurers' operating performance and policyholder surplus. In 2022, the P&C industry reported an underwriting loss of \$35.6 billion, a sharp reversal from the \$5.1 billion gain recorded in 2021. This shift was driven by increased catastrophe losses and rising claims severities. Concurrently, the industry's net investment income declined by \$3.5 billion, dropping from \$62.2 billion in 2021 to \$58.7 billion in 2022. This reduction reflected the broader challenges of navigating volatile financial markets and historically low fixed-income returns (Hartwig, 2023). These factors collectively contributed to a \$95.5 billion decline in policyholder surplus, marking a 7.8% decrease from the past year. This decline affects insurers' capacity to underwrite new policies and limits their ability to invest in innovation (Hartwig, 2023).

For mutual insurers, these challenges are compounded by structural limitations. Unlike stock insurers, which can access capital markets to fund technological investments and help manage operational expenses, mutual insurers rely on policyholder surplus and policyholder contributions through premium. This structural difference limits their ability to invest in advanced technologies, such as relevant policy admin platforms, experienced

talent or other tools increasingly critical for maintaining competitive advantage and addressing shifting customer expectations.

As customer demands evolve toward more convenient and personalized insurance solutions, mutual insurers face pressure to modernize their operations to remain relevant (McKinsey, 2019). These developments underscore the necessity for mutual insurers to innovate and adapt in an environment increasingly shaped by financial volatility and technological disruption. By addressing structural and operational limitations, mutual insurers can position themselves to compete effectively while preserving their commitment to policyholder value.

Demutualization and Mutualization

Although stock companies and mutual companies have coexisted and thrived in parallel, these companies can transition from one structure to another through mutualization or demutualization. Stock companies can undergo mutualization by following the appropriate legal procedures in their state of domicile. During this process, stockholders, policyholders, and board members must collectively reach an agreement to convert, and the stock is held in trust throughout the transition. Once the plan is approved and all key points are agreed upon and sanctioned by the state commissioner, the company converts from a stock company to a mutual company owned by the policyholders (Mayers & Smith, 1984). However, mutualization is not a process that occurs frequently in the current environment. Mutualized entities have become rare. For example, the World Federation of Exchanges reported that from 1999 to 2013, mutual exchanges decreased from 40% to 15%, whereas demutualized exchanges increased from 10% to 62% (Abukari & Otchere, 2019).

On the other hand, mutual companies can opt for demutualization, a more commonly observed process as demonstrated above. Demutualization is complex, time-consuming, and an expensive proposition for mutuals. The requirements for demutualization vary among states. Some states allow a simple majority vote, others impose significant restrictions and hurdles, and some outright prohibit it. Generally, the process involves drafting a plan submitted to the state regulator through a Domestic Change of Control filing commonly known as a “Form A” filing. After analysis, the regulator holds a hearing, and if it concurs with the filing, the demutualization is approved. Subsequently, the approved information is provided to policyholders, outlining what they will receive in exchange for relinquishing their ownership rights. If the required number of policyholders agrees to the terms, as mandated by state law or the company’s bylaws, the company is free to convert (McNamara & Rhee, 1992). This process alone generally takes a minimum of 12 months but can take much longer, depending on the state and the complexity of the final structure.

During the demutualization process, the company typically takes one of two paths. The first is full demutualization, in which the company becomes a publicly traded entity, offering shares to the public. The second is a sponsored demutualization, where the process is the same, but the ownership is transferred to one or a few individuals or entities. In most cases, this is done when another company buys out the mutual, and then it can either be kept as an independently run subsidiary or merged into a larger organization. In either case, there is a clear separation of legal liability between the shareholders and policyholders, and the company ceases to be a mutual entity.

Industry View of Demutualization

There has been substantial criticism of mutual carriers that opt to fully demutualize, primarily due to the impact on policyholders who lose their ownership stake and potential financial benefits (Mayers & Smith, 1984). Globally, the phenomenon of demutualization has exhibited varying trends over the years, influenced by regional market dynamics and regulatory frameworks. The motivations driving mutuals to pursue demutualization, as well as the challenges they face, often evolve with economic conditions and industry changes. However, what experiences even greater volatility is the perception of demutualization itself by industry experts and policyholders. This process raises pertinent questions: Why do mutuals place such importance on retaining their mutuality? Why do associations, policyholders, and society at large care deeply about the fate of these organizations? The answers lie in the foundational purpose of mutual companies and the wealth accumulated in these organizations. Unlike stock companies, mutuals are designed not for the financial gain of a select group of investors but to serve the interests of their policyholders and communities (Viswanathan & Cummins, 2003). This distinct mission fosters a unique alignment of values that many argue is worth preserving in an increasingly profit-driven industry.

Guided by the principle of serving policyholders and communities, mutual insurance companies have accumulated assets worth trillions of dollars over generations. These assets, collectively owned by past and present policyholders, are entrusted to serve current and future policyholders. The financial model of mutual insurers is rooted in basic economics. Many mutual insurance companies, established over a century ago, have demonstrated consistent profitability, leading to the accumulation of substantial

surpluses. This surplus functions as equity, reserved for paying claims, reinvesting in the business, and issuing dividends to policyholders. Unlike stock companies, where equity is owned by individual shareholders or external investors, the surplus in mutual insurance companies is collectively owned by the policyholders. Due to this dynamic, in the event of demutualization, this surplus is often transferred to the newly formed stock entity and its shareholders as opposed to being disbursed to the policyholders.

The demutualization process requires policyholder approval, and management or external parties typically employ various strategies to secure a favorable vote. These strategies often include offering policyholder's nominal payments as incentives, which generally represent only a small fraction of the company's total surplus. Furthermore, these payments frequently exclude consideration for former policyholders who contributed to the surplus over time. Although such transfers may be economically justifiable under certain circumstances, they often result in a significant windfall for new investors, as the remaining surplus is reallocated to shareholders rather than retained for the benefit of the policyholders (American Academy of Actuaries, 1999; Beckley et al., 1998).

To illustrate, consider a mutual insurance carrier with \$100 million in surplus and 40,000 policyholders. Under its mutual structure, this \$100 million is collectively owned by policyholders and designated for claims, reinvestment, or issue dividends to policyholders. If an external entity offers to acquire the company for \$100 million, the company must first undergo demutualization, requiring policyholder approval. During this process, policyholders might be offered a payout as an incentive to agree. At this stage, a sophisticated actuarial analysis may be undertaken to determine each

policyholder's actual equity in the insurer. Thus, long time holders of large policies will likely get a higher offer than a person who has a minimum coverage policy for 1 month. If it is assumed that this actuarial analysis values the policyholders' equity at \$4 million, this leaves \$96 million of the surplus unallocated. Following the acquisition, this remaining surplus transfers to the new stockholders. Consequently, the new owners acquire a company valued at \$194 million for \$100 million, benefiting significantly from the surplus originally intended for policyholders.

A real example is also illustrative. The demutualization of Saucon Mutual in 2017 provides a compelling example of the operational challenges and strategic opportunities driving such transitions. After over 180 years of operation, the company faced mounting pressures from its limited infrastructure, restricted access to capital, and an increasingly competitive insurance landscape. These factors ultimately led Saucon Mutual's Board of Directors to approve a conversion to a stock company, aiming to ensure the company's long-term viability while providing compensation to policyholders and aligning its operations with modern industry standards (Saucon Mutual Insurance Company, 2017).

By 2017, Saucon Mutual had not written significant new policies since 2005, signaling stagnation in its underwriting operations and a shrinking policyholder base of fewer than 400 policies (Saucon Mutual Insurance Company, 2017). With just three employees, the company lacked the capacity to scale its business effectively. Its mutual structure further limited access to external capital, despite holding an estimated \$17 million in surplus. Unlike stock companies that can issue shares to fund growth initiatives, Saucon Mutual's mutuality constrained its ability to invest in technological advancements, acquisitions, and infrastructure. Demutualization was seen as a solution,

allowing the company to modernize its governance, streamline decision-making, and align with contemporary industry practices (Saucon Mutual Insurance Company, 2017). The Board also framed demutualization to reward policyholders, offering them two options: cash compensation calculated based on a specific formula or the ability to purchase shares in the newly formed holding company, Saucon Holdings. Another key driver was the desire to preserve the company's independence by raising capital and strengthening its operational framework to withstand external merger or acquisition pressures (Saucon Mutual Insurance Company, 2017).

The demutualization raised \$3,250,000 through the sale of shares in Saucon Holding. Of this, \$1,425,000 was used to purchase all shares of the newly converted Saucon Insurance Company. Despite the stated goals providing optionality for policyholders to continue to own a piece of it, the process concentrated ownership significantly. Post-conversion, 92.92% of Saucon Insurance Company, via Saucon Holding, was owned by two individuals. This translated into an economic shift whereby these individuals, for an investment of \$3.25 million, acquired control of approximately \$16.3 million in surplus, achieving a return on investment (ROI) exceeding 400% on day one (Saucon Mutual Insurance Company, 2017). Although the stated intention was to grow the company, an analysis of the SNL database reveals that as of 2023, Saucon has not re-entered the insurance underwriting market. Instead, it has focused on asset management, growing its asset base from the initial surplus to \$20.7 million by 2023.

The potential shift of wealth that occurs during demutualization is a critical concern for those within the mutual insurance space. Although \$16 million in surplus, as seen in a smaller mutual carrier such as Saucon Mutual, may appear modest in the

broader context of the industry, it highlights a larger issue affecting mutual insurers (Saucon Mutual Insurance Company, 2017). The conversation around demutualization is not solely about individual cases but about protecting the core principles of mutuality, ensuring policyholders retain the value they collectively built. Table 1 includes a summary of the average surplus of all mutual carriers as of 2023.

Table 1

Average Surplus and Count of Mutual Carriers (Year-End 2023)

Surplus Size (in millions USD)	Total Average Surplus (in millions USD)	Mutual Carrier Count
< than \$25	\$3,951	470
\$25.0-\$50.0	\$4,206	119
\$50.1-\$100.0	\$7,339	103
\$100.1-\$250	\$18,452	114
\$250-\$500	\$24,027	69
Greater than \$500	\$750,841	133

Note. Adapted from S&P Global Market Intelligence (2023).

From this analysis, it is evident that a significant proportion of mutual carriers—58%—fall within the \$50 million or less surplus band. Their prevalence highlights the importance of protecting smaller mutual carriers, which, despite their size, play a vital role in the mutual insurance ecosystem by serving local communities and providing stable, policyholder focused insurance options. The concentration of smaller mutual insurers in lower surplus bands underscores their unique challenges. Limited access to capital and operational constraints can create pressures that make demutualization appear appealing. However, the industry must carefully consider the long-term implications of such transitions. Protecting these carriers is essential to preserving mutuality’s

foundational values, including policyholder ownership, community orientation, and reinvestment of surplus for member benefit. By supporting these companies, the mutual insurance industry can sustain its mission of prioritizing policyholders over shareholders, ensuring the continued availability of policyholder-focused insurance solutions. State mutual associations and national organizations, such as the NAMIC, are at the forefront of this effort. These associations work tirelessly to advocate for policies and practices that safeguard the mutual model, ensuring its viability in a competitive insurance marketplace.

NAMIC is a leading advocate for the property-casualty mutual sector and has championed these principles since its founding in 1895, when a group of executives recognized the value of collaboration to address industry challenges (National Association of Mutual Insurance Companies [NAMIC], n.d.). The subsequent inaugural organizational meeting took place in Chicago the following year, marking the establishment of what was initially known as the National Association of Co-Operative Mutual Insurance Companies. Over the next 120 years, NAMIC has evolved into a dominant force within the mutual space, focusing on advocacy and education to assist mutuals in adapting and competing in an ever-changing environment.

Presently, NAMIC boasts over 1,500 member companies, collectively writing \$391 billion in premiums and representing 68% of the homeowners' insurance market, 56% of the automobile insurance market, and 31% of the business insurance market in North America (National Association of Mutual Insurance Companies [NAMIC], n.d.). One of their guiding principles is advocating for legislation that "preserves the membership rights of mutual insurance company policyholders and safeguards surplus

accumulated over time by past policyholders for the benefit of present and future policyholders” (National Association of Mutual Insurance Companies [NAMIC], n.d.). Part of this includes continued advocacies that create optionality to mutuals that do not include demutualization. Neil Alldredge was quoted in the article as saying, “Ultimately, our view is that while demutualization is a legitimate option, it ought to be the last restructuring option (a) company considers” (p. 46).

Concerns about demutualization extend beyond industry associations to policyholders and society, who often view the process with skepticism. A recent attempt by a long-established mutual insurance company in Europe to demutualize and be acquired by a private equity firm faced significant resistance. Although the proposal highlighted the need to raise capital to address operational challenges, many policyholders opposed the transfer of the company’s surplus, built over nearly 2 centuries, to a private equity entity. Critics argued that such a move prioritized short-term financial gains over the long-term interests of policyholders and the broader mission of mutuality. Ultimately, despite the board’s justification for the need for additional funds, policyholders rejected the plan, underscoring the importance of preserving mutual ownership and its associated values (Cannochi, 2021). An important element that this highlights is that this situation is not unique to U.S.-based property and casualty carriers, which our research focuses on.

The Mutual Holding Company Structure – An ‘In-Between’

The mutual holding company (MHC) structure offers an “in-between” solution for mutual insurance companies seeking to adopt characteristics and operational flexibility akin to stock companies while preserving policyholder ownership and protecting their

assets. This framework addresses the complex challenge of balancing the benefits of stock company dynamics with the foundational principles of mutual ownership. The development of the NAIC's Model MHC law reflects an innovative approach to maintaining policyholder interests while enabling strategic growth opportunities. Despite its relatively recent introduction, the MHC has become a pivotal mechanism in the evolution of mutual insurance companies (National Association of Mutual Insurance Companies [NAMIC], 2024). The inaugural MHC statute was enacted in Iowa in 1995, specifically designed to facilitate the reorganization of mutual savings associations (Harris et al., 1998). This statutory framework is particularly noteworthy for its innovative capacity to amalgamate elements characteristic of stock corporations and mutual organizations. Harris et al. (1998) highlighted that this hybrid structure offers a unique blend that appeals to organizations seeking the advantages of both governance models. Understanding how this structure works is paramount to understanding the fundamental differences that allow the organization to look like a stock company but still retain their mutual ownership structure. This is outlined in Figure 2.

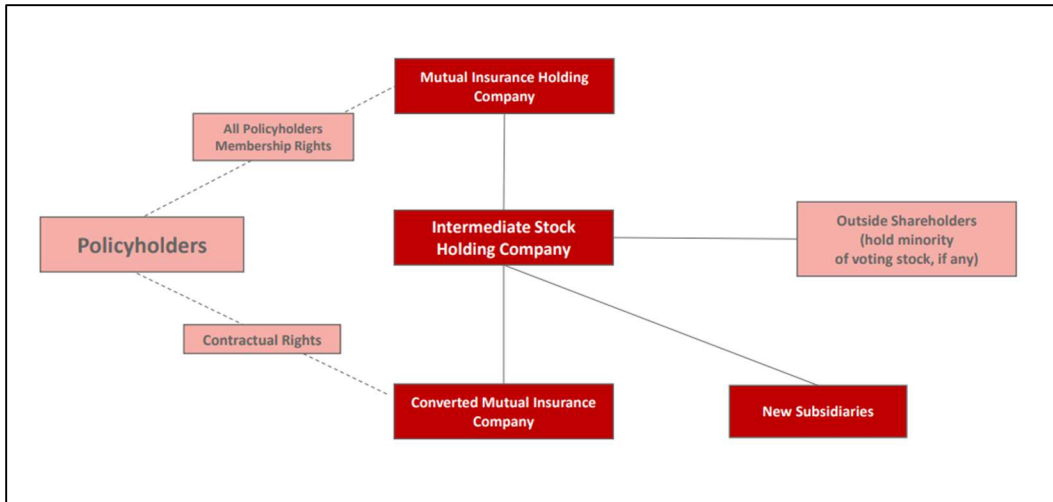


Figure 2. Mutual Holding Company Conversion & Structure

Note. Adapted from Kincross (2023).

As illustrated in Figure 2, the dark red boxes in the middle shows how the structure is transformed into a tripartite organization comprising the mutual holding company (serving as the ultimate controlling parent), a downstream stock holding company, and the mutual insurance company. This restructuring involves a pivotal redistribution of rights shown in the light red boxes: membership rights are decoupled from policyholder rights. Specifically, membership rights are allocated to the ultimate controlling parent, whereas policyholder rights are retained within the insurance company and linked directly to the policies issued. The intermediary stock company holds the organization’s shares, which, upon conversion, issues all shares to the MHC. This strategic maneuver ensures that policyholders maintain ownership over the mutual insurance company, thereby preserving their mutual status. Consequently, an individual who possesses a policy with the mutual insurance company automatically acquires

membership rights in the mutual holding company that serves as the ultimate controlling parent.

This innovative structure enhances organizational flexibility, particularly in capital mobilization, as the MHC is empowered to sell shares in the intermediate stock holding company. To safeguard its ownership and mutuality, in most instances, the MHC must retain only 51% voting control in the stock company, regardless of the proportion of economic value held. Furthermore, as Harris et al. (1998) documented, this arrangement not only supports the primary insurance operations, but also facilitates the acquisition of other entities, both regulated (such as other insurance companies) and nonregulated (such as a property management company or a service/consulting company). Additionally, it allows the establishment of independent revenue-generating enterprises, thereby enhancing the value delivered to policyholders. This multifaceted capability exemplifies the MHC's utility in adapting traditional mutual insurance models to the dynamic demands of modern financial and corporate landscapes.

It is important to note that not all states have adopted a mutual holding company law, even if they have laws governing full demutualization. State laws may perceive voting control and economic interest as distinct and separate, and the statutes dictate these percentages a company must adhere to retain their mutuality. Table 2 illustrates the status of mutual holding company laws by state. A significant portion of states permits 'vote only' laws. 'Vote-only' laws require the company to hold no less than 51% of voting control. However, it does not limit economic value. This means that a holding company can sell up to 99% of its economic value but still be considered a mutual if the policyholders retain voting control (although this theory has not been tested). Other states

permit either a ‘*vote and value*’ or a ‘*no vote or value*’. A ‘*vote and value*’ statute requires both the voting control and the economic interest to not fall below the 51% threshold. Finally, a ‘*no vote*’ or ‘*no value*’ statute is silent. This means that there are no defined guidelines for carriers regarding how much vote or value needs to be retained to maintain mutuality and may be situational and up to the regulators. Indiana is an outlier, permitting a mutual holding company to form if the company has the power to cast at least 51% of the votes, is entitled to reserve 51% of all dividends declared and receives 51% of all net proceeds upon any dissolution. Several other states do not permit mutual holding companies. It is important to recognize that each state establishes its own regulatory framework for mutual insurance company reorganizations, often with specific procedures or limitations. For instance, New York State has enacted legislation permitting MCH conversions; however, this option is currently limited to life insurers. Mutual property and casualty insurers in New York are not authorized to reorganize through the MHC structure.

Table 2

Mutual Holding Law by State

Vote Only			
Arizona	Arkansas	California	Connecticut
Delaware	Florida	Georgia	Idaho
Illinois	Indiana	Iowa	Kansas
Kentucky	Louisiana	Maine	Massachusetts
Michigan	Minnesota	Mississippi	Missouri
Nebraska	Nevada	New York	North Carolina
North Dakota	Ohio	Rhode Island	South Carolina
Vermont	Virginia	Wisconsin	District of Columbia

Table 2. (Continued)

		Vote and Value	
Maryland	Oregon	New Hampshire	
		No Vote or Value	
Pennsylvania			
Texas			
		No MHC Statute	
Arkansas	Alabama	Colorado	Hawaii
Montana	New Jersey	New Mexico	Oklahoma
South Dakota	Tennessee	Utah	West Virginia
Washington	Wyoming		
		Other	
Indiana			

Note. Adapted from Stevens and Lee (2024).

The adoption of MHC structures has increased significantly in recent years, with 36 mutual insurers transitioning to this model between 2019 and 2023—a notable rise compared to historical patterns. This surge underscores a shift in strategic priorities within the mutual insurance sector. This research involved examining the economic drivers behind these conversions, including the motivations that propel companies toward this structure. Additionally, it involves evaluating whether adopting the MHC model enhances these companies’ competitive positioning in today’s rapidly evolving marketplace.

Literature Review of Prior Empirical Studies

Limited research exists on insurers transitioning specifically to MHC structures, though many studies have been conducted on full demutualization. This study built on established theories and patterns from past research on why mutuals demutualize and applied these concepts to the MHC structure. The objective was to determine whether the same theoretical frameworks and underlying triggers observed in full demutualization also apply to MHC conversions.

Demutualization is based on several theoretical frameworks, including agency theory, the access to capital hypothesis, and the efficiency hypothesis. Agency theory, as discussed by Mayers and Smith (1986) and explored earlier in this paper, emphasizes the unique governance structure of mutual companies, where policyholders serve as both owners and customers. This dual role inherently limits managerial discretion, often resulting in conservative decision-making, lower risk-taking, and a focus on straightforward product offerings that align with policyholder interests. Although this structure supports stability and aligns with the mutual ethos of prioritizing policyholders, it can also constrain the company's ability to innovate or pursue growth opportunities. Demutualization, by transitioning ownership to shareholders, introduces a governance model that increases managerial discretion and risk-taking, potentially enabling the company to expand product lines and pursue more aggressive growth strategies through expansion or acquisition. This shift reflects a trade-off between the stability and customer-centric focus of mutuals and the increased flexibility and access to capital that come with a demutualized structure.

A second rationale for conversion, as articulated by Mayers and Smith (1986, 1994), concerns access to capital. This hypothesis suggests that mutual companies may convert to stock companies to gain better access to capital markets. This transition allows the company to raise capital more easily through equity offerings, which can be used to fund growth, improve operational efficiency, or manage risk more effectively. A third hypothesis is the efficiency hypothesis. This hypothesis complements the second hypothesis, suggesting that demutualization can improve operational performance by

introducing market discipline and better aligning management incentives with profitability (Mayers & Smith, 1986).

In addition to Mayers and Smith (1986), Jensen and Meckling (2019), and other researchers have examined demutualization. Spiller's (1971) groundbreaking study was one of the first to quantitatively assess the impact of demutualization on insurance companies, specifically those in New York between 1952 and 1966. Focusing on performance metrics, such as asset growth and income, Spiller found that firms converting from mutual to stock form displayed significantly stronger performance regarding net written premiums and total asset accumulation after demutualization. These findings suggested that shifting to a stock company structure could unlock latent efficiencies and drive economic gains, likely due to more aggressive growth strategies and enhanced capital management practices enabled by access to broader capital markets (Spiller, 1971).

Mayers and Smith (1994) followed up on the themes of structural efficiency in their comprehensive study of transitions from stock to mutual ownership within the life insurance industry. They analyzed various operational and financial indicators, including premium income stability, product mix diversity, lapse rates, investment return, and managerial turnover. Their findings indicated that transitions to mutual ownership often enhanced operational efficiencies without compromising financial performance. Their research supported the efficiency hypothesis, suggesting that mutual structures in the life industry could effectively align managerial incentives with policyholder interests, leading to sustained operational performance (Mayers & Smith, 1986).

McNamara and Rhee (1992) expanded on the existing literature using time-series data to explore how demutualization affected product and financial variables over a 10-year window centered on the demutualization event. They observed significant capital and surplus growth, particularly 3 years before and after demutualization, which aligned with the efficiency hypothesis. They also noted modest declines in expense ratios post-demutualization, suggesting cost management efficiencies gained through the restructuring.

Cagle et al. (1996) undertook a longitudinal study of 27 companies that demutualized between 1968 and 1991, analyzing their financial and business performance before and after the transition. They found that post-demutualization, these companies generally exhibited higher net worth than the industry average, implying efficiency gains. Their findings reinforced that demutualization could benefit insurance companies aiming to capitalize on growth opportunities and enhance shareholder value through improved financial management.

Building on their earlier work, Mayers and Smith (1994) examined the ownership structure across lines of property-casualty insurance. They further explored how demutualization and other ownership changes impacted operational efficiency and access to capital. Their findings supported the access to capital theory, emphasizing that demutualization allows firms tap into broader capital markets to support growth and improve financial performance (Mayers & Smith, 1994).

Viswanathan and Cummins (2003) focused on property-liability insurers, using logit models to predict factors influencing demutualization. Their findings corroborated the access to capital hypothesis, showing that firms with lower financial robustness—

such as lower surplus-to-assets ratios and higher dependencies on agent balances—were more likely to demutualize. Their research also indicated that demutualization was often associated with increased premium growth, suggesting that companies might demutualize in anticipation of growth opportunities that require more flexible capital structures (Viswanathan & Cummins, 2003).

Erhemjamts and Leverty (2010) conducted one of the rare studies that examined the reasons behind a mutual's decision to fully convert to stock form compared to adopting an MHC structure. They discovered that mutuals opting for full conversion were typically larger and exhibited distinct financial characteristics, such as lower surplus-to-assets ratios and higher reinsurance costs. These firms often pursued conversion to access capital as a strategic move to facilitate growth and diversification, highlighting how the traditional mutual form could sometimes constrain ambitious strategies (Erhemjamts & Leverty, 2010).

The current body of research does not apply these concepts specifically to the alternative mutual holding company structure. Therefore, in these studies, our research aimed to harness these past performance metrics to assess the likelihood of mutual carriers transitioning to mutual holding companies, given underlying factors. By examining financial data, such as surplus trends, premium growth, and operational ratios, the study sought to predict what factors influence a company to convert compared to its peers who maintain a mutual structure. This exploration seeks to add a building block to past research and extend the comprehension of the strategic, financial, and operational implications of such significant organizational transformations in the insurance industry, providing valuable insights for practitioners and policymakers and the options available.

CHAPTER 3

QUANTITATIVE ANALYSIS USING PROBIT AND DIFFERENCE IN DIFFERENCE MODELING

The aim of this study was to examine the economic performance of U.S. insurance organizations, focusing on those that transitioned to an MHC structure. By comparing the financial metrics of companies that adopted the MHC structure with those that retained their original mutual form, the study sought to identify the key financial factors influencing the decision to transition. Additionally, the study sought to evaluate the post conversion economic performance of MHC adopters to determine whether they outperform mutual companies. The following two hypotheses were proposed in this study to examine pre- and post-formation:

Hypothesis 1 (H1): *Poor economic performance is an indicator for mutuals to change to a mutual holding company*

To test H1, a probit model, a statistical technique commonly used to model binary outcomes was used. In this scenario, the decision to convert was treated as a dichotomous dependent variable influenced by multiple independent variables. This method allowed the examination of how various financial attributes, such as capital levels, growth rates, asset management efficiency, and risk profiles, correlate with the likelihood of a mutual insurer transitioning to an MHC.

Hypothesis 2 (H2): *Changing to a mutual holding company structure causes a positive change in economic performance.*

For H2, a difference-in-difference (DiD) modeling approach was used. A DiD model is a statistical technique primarily used in econometrics and quantitative social

sciences to estimate causal relationships. This method mimics an experimental research design using observational study data, assessing the differential effect of a treatment by comparing changes in outcomes over time between a treatment group and a control group. The DiD model is particularly valuable in policy evaluation and other applied research fields where randomized control trials (RCTs) are not feasible. The DiD approach compares the pre-treatment and posttreatment outcomes for the treatment and control groups. The critical assumption is that, in the absence of treatment, the outcome difference between these groups would remain constant over time, known as the parallel trends assumption. The treatment effect is then estimated as the difference in the average outcome change between the treatment and control groups. Mathematically, the DiD estimator can be expressed as follows:

$$\text{DiD} = (\bar{Y}_{T1} - \bar{Y}_{T0}) - (\bar{Y}_{C1} - \bar{Y}_{C0})$$

Where:

- \bar{Y}_{T1} and \bar{Y}_{T0} are the average outcomes for the treatment group after and before the treatment, respectively.
- \bar{Y}_{C1} and \bar{Y}_{C0} are the average outcomes for the control group after and before the treatment, respectively.

Difference-in-Differences Models and Causal Inference

The DiD models are powerful tools for causal inference in observational studies. They leverage natural experiments where random assignment is not possible, allowing us to estimate the causal impact of treatments or interventions by comparing changes in outcomes over time between treated and untreated groups. DiD inherently controls for

any time-invariant confounding variables that might otherwise bias the results by comparing changes over time rather than levels. This is particularly advantageous in observational studies where randomization is not possible. Various extensions, such as incorporating covariates, matching methods, and instrumental variables, enhance the flexibility of DiD models. These extensions improve the robustness of the estimates and allow more nuanced analyses that account for potential biases and violations of the parallel trend's assumption.

DiD models are also extensively used in policy evaluation due to their ability to control unobserved heterogeneity and confounding variables. For instance, Card and Krueger' (1994) study on the impact of minimum wage increases on employment employed a DiD approach. By comparing employment changes in fast-food restaurants in New Jersey and Pennsylvania before and after the policy change, they isolated the effect of the minimum wage increase from other factors influencing employment (Angrist & Pischke, 2009; Card & Krueger, 1994). Additionally, Angrist and Pischke (2009) provided a comprehensive overview of DiD models for program evaluation where they emphasized the importance of addressing potential biases and ensuring the reliability of causal inferences. They discussed methods to strengthen the assumption of parallel trends and deal with unobserved heterogeneity, making DiD a versatile tool for evaluating various programs and interventions (Angrist & Pischke, 2009). In this study, a DiD model was considered beneficial due to the small sample size and variability in the timing of mutuals that elected to convert to a mutual holding company.

Sample Selection and Population Analysis

Considering the relatively new concept of MHCs in the insurance industry, the aim of this study was to identify all companies that switched from mutual to MHCs. Data were collected from the S&P Global Market Intelligence database covering 1995 to 2023, focusing on United States domiciled property and casualty insurance companies. In the dataset, various financial factors (detailed further in this paper), including surplus; premium growth; changes in surplus notes; solvency levels, such as the Risk-Based Capital's Authorized Control Level (ACL); the operational ratio; and dividends paid to policyholders were analyzed. These parameters were selected to closely align with those used in past empirical studies, ensuring consistency in measurement and comparability with existing research in the field.

Over the past 28 years, we identified 85 mutual companies that transitioned to an MHC structure. From this group, the focus was refined to identify the lead company within each group. Lead companies were defined as those with the largest asset base, based on the assumption that in scenarios where multiple mutuals were under the same management and board of directors, all entities would likely follow the lead of the most substantial carrier. The analysis also included a year-by-year breakdown of conversions, as shown in Table 3, to illustrate the trend of mutual companies transitioning to MHCs over time. Notably, there was a significant slowdown in conversions between 2002 and 2017. However, the adoption rate has increased substantially in recent years, as evidenced by the data available up to the time of this study. Although the underlying reasons for the lull in conversions were not examined in this study, it presents an opportunity for future researchers to explore the factors contributing to this trend.

Table 3*Mutual Holding Company Conversions 1995–2023*

Year	Number of Conversions
2001	3
2002	13
2003	1
2007	2
2009	1
2010	2
2011	5
2015	2
2017	19
2019	1
2020	7
2021	17
2022	2
2023	10

Probit Regression Analysis for Mutual Holding Company Conversions

To test H1, a probit regression analysis was used to estimate the likelihood that mutual insurance companies choose to convert to an MHC. In this analysis, a value of 1 was assigned to companies that converted to MHC status in a given year, whereas a value of 0 was assigned to companies that did not convert within the study's sample. The dataset for H1 included all mutual insurance companies.

Table 4 includes a detailed list of mutual insurance companies that underwent conversion and were assigned a value of 1 in the analysis. This tabular representation provides a clear identification of converting companies, enabling a systematic investigation of the relationship between various economic factors and the probability of transitioning to MHC status. This method ensures clarity and rigor in examining the determinants of conversion decisions within the mutual insurance industry.

Table 4*Mutual Carrier Conversions 1995–2023*

Company	Company
FCCI Insurance Company	Rockingham Insurance Company
Retailers Casualty Insurance Company	Builders Mutual Insurance Company
CUMIS Insurance Society, Inc.	MDAdvantage Insurance Company of NJ
BusinessFirst Insurance Company	West Virginia Mutual Insurance Company
Direct Auto Insurance Company	United Ohio Insurance Company
Frankenmuth Insurance Company	Harford Mutual Insurance Company
IMT Insurance Company	OrthoForum Insurance Company
Jewelers Mutual Insurance Company	Millers Capital Insurance Company
Mutual of Enumclaw Insurance Company	Patrons Mutual Insurance Company of CT
GuideOne Insurance Company	West Bend Mutual Insurance Company
Merced P&C Company	NCMIC Insurance Company
MMG Insurance Company	Westminster American Insurance Company
ClearPath Insurance Company	Tuscarora Wayne Insurance Company
Church Mutual Insurance Company	United Heritage P&C Company
Amer Family Mutual Insurance Company	Beacon Insurance Company
SECURA Insurance Company	Liberty Mutual Insurance Company
Amerisure Mutual Insurance Company	Ohio Casualty Insurance Company
Safeco Insurance Company of America	State Automobile Mutual Insurance Company
Lightning Rod Mutual Insurance Company	Sublimity Insurance Company
American Family Connect P&C Company	LM P&C Insurance Company
Agraria Insurance Company	Nodak Insurance Company
Triple-S Propiedad Inc.	MAG Mutual Insurance Company
American Compensation Insurance Company	

To assess this model accurately, it was assumed that the current levels of many performance variables may be important in the years before conversion. Therefore, pre- and post-conversion data were reorganized. If year $t = 0$ was year of conversion, we examined the variables in the year $t-1$, $t-2$, and $t-3$. Additionally, we considered the likelihood that particular factors that occur before a company converts are essential to conversion. Insurers need significant and ongoing developments before they respond to changes. Additionally, the transition to a MHC structure, although faster than full demutualization, still requires the consent of regulators and policyholders, which takes time. This regulatory approval process inevitably prolongs the timeline from when a conversion decision is made to when it is implemented. It was hypothesized that those companies with poor economic performance were more likely to convert to a mutual holding company. Table 5 includes the descriptive statistics of the variables used in the probit model, removing all carriers with zero total assets.

Table 5

Descriptive Statistics of Mutual Holding Company Insurers and Mutual Insurers

	Mutual Holding Company Insurers ($N = 53$)	Mutual Insurers ($N = 7798$)	Overall ($N = 7851$)
Surplus to Asset Ratio			
Mean (SD)	0.421 (0.137)	0.487 (0.168)	.487 (.168)
Median [Min, Max]	.420 [.137, .756]	.470 [.00938, 1.00]	.470 [.00938, 1.00]
Lead Growth			
Mean (SD)	7.14 (34.8)	6.92 (46.2)	6.93 (46.2)
Median [Min, Max]	3.70 [-47.3, 239]	3.53 [-100, 1950]	3.53 [-100, 1950]
Agent Balance to Direct Premiums Written			
Mean (SD)	11.0 (13.1)	44.4 (2950)	44.1 (2940)

Table 5. (Continued)

	Mutual Holding Company Insurers (<i>N</i> = 53)	Mutual Insurers (<i>N</i> = 7798)	Overall (<i>N</i> = 7851)
Median [Min, Max] Surplus Notes to Surplus	6.62 [0, 63.7]	3.23 [-43.0, 260000]	3.23 [-43.0, 260000]
Mean (SD)	.0271 (.0735)	.0579 (.420)	.0577 (.418)
Median [Min, Max] Surplus Notes to Assets	0 [0, .285]	0 [0, 23.6]	0 [0, 23.6]
Mean (SD)	.00907 (.0244)	.0174 (.0690)	.0174 (.0688)
Median [Min, Max] Percent Long Tail	0 [0, .117]	0 [0, 1.12]	0 [0, 1.12]
Mean (SD)	49.0 (31.5)	40.6 (38.6)	40.6 (38.5)
Median [Min, Max] Underwriti ng Gains	42.6 [0, 100]	32.0 [-71.1, 494]	32.1 [-71.1, 494]
Mean (SD)	.206 (.179)	.321 (.590)	.321 (.588)
Median [Min, Max] Cash From Operations to Assets	.181 [-.0595, .786]	.255 [-.514, 29.5]	.254 [-.514, 29.5]
Mean (SD)	3.67 (5.58)	3.05 (10.2)	3.05 (10.2)
Median [Min, Max] Reserves to Equity	2.80 [-11.5, 19.8]	3.49 [-584, 81.9]	3.48 [-584, 81.9]
Mean (SD)	97.0 (88.1)	75.1 (140)	75.3 (140)
Median [Min, Max] Risk Based Capital Ratio	78.0 [10.2, 481]	50.0 [-1.08, 5650]	50.3 [-1.08, 5650]

Table 5. (Continued)

	Mutual Holding Company Insurers (<i>N</i> = 53)	Mutual Insurers (<i>N</i> = 7798)	Overall (<i>N</i> = 7851)
Mean (SD)	892 (441)	1190 (1470)	1190 (1470)
Median [Min, Max]	830 [221, 2110]	907 [-75.4, 61500]	907 [-75.4, 61500]
Operating Ratio			
Mean (SD)	94.1 (14.6)	92.4 (39.2)	92.4 (39.1)
Median [Min, Max]	94.3 [58.4, 158]	92.7 [-448, 1550]	92.7 [-448, 1550]
Combine d Ratio			
Mean (SD)	103 (14.2)	104 (39.3)	104 (39.2)
Median [Min, Max]	104 [80.6, 180]	101 [-392, 1470]	101 [-392, 1470]
Direct Premiums Written Growth			
Mean (SD)	2.39 (14.0)	6.53 (36.3)	6.50 (36.2)
Median [Min, Max]	2.32 [-39.2, 32.0]	3.64 [-99.6, 1280]	3.64 [-99.6, 1280]
Expense Ratio			
Mean (SD)	33.2 (6.49)	35.1 (28.9)	35.1 (28.8)
Median [Min, Max]	33.0 [17.7, 48.5]	32.4 [-441, 954]	32.4 [-441, 954]
Log of Total Assets			
Mean (SD)	13.0 (1.91)	11.5 (2.07)	11.5 (2.08)

Median [Min, Max]	13.4 [8.82, 16.8]	11.4 [5.89, 19.2]	11.4 [5.89, 19.2]
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Several key operating and balance sheet metrics are critical to evaluating an insurance carrier’s profitability and sustainability. These metrics provide insights into the insurer’s financial health and operational efficiency, guiding strategic decisions and highlighting areas that may require attention.

Surplus to Assets: This ratio calculates the insurer’s surplus (or net worth) by its total assets. A higher surplus-to-assets ratio reflects a stronger financial position, demonstrating that the insurer has a substantial financial cushion to absorb potential losses and meet its obligations. This resilience is particularly important for carriers, as it ensures their ability to handle unexpected claims or adverse market conditions without jeopardizing operations or policyholder commitments.

Lead Growth: Lead growth refers to the expansion of the lead company within an organizational structure, typically measured by the growth of its premium base. Premium growth is a critical metric for an insurance company, as it directly impacts long-term sustainability and competitiveness. This analysis focuses on the overall premium growth within the sample, providing insights into the performance and scalability of the lead companies in their respective structures.

Agent’s Balance to Direct Written Premium: This ratio compares the balances owed by *agents* to the insurer against the direct written premiums. It provides insight into the effectiveness of the insurer’s credit management and the liquidity risks associated with agent receivables. A lower ratio is generally favorable, indicating that the company effectively collects premiums from its agents.

Surplus Notes to Surplus Ratio: This ratio measures how surplus notes finance an insurer's surplus. The ratio provides a view of the insurer's capital structure, with a higher ratio suggesting a greater reliance on surplus notes, which may indicate a more leveraged position.

Surplus Notes to Assets: This ratio reflects the proportion of the company's assets financed through surplus notes. Surplus notes are a form of subordinated debt that counts toward the insurer's capital under regulatory standards but is borrowing. A lower ratio indicates less reliance on debt financing, which can be a positive sign of financial stability.

Percent of Long-Tail Premiums: This factor assesses the share of long-tail business, such as liability or workers' compensation, in a company's portfolio. Long-tail lines involve claims that take years to settle, requiring higher reserves and introducing greater risk. Mutual insurers traditionally focus on short-tail lines, such as auto or homeowners' insurance, which align with their preference for stability and predictable losses. A shift toward long-tail premiums may indicate diversification and increased exposure to reserving challenges and volatility.

Underwriting Gains: Underwriting gains are a fundamental measure of an insurer's profitability from its core business activities. This metric is calculated as the net earned premium minus the net loss and adjusting expenses incurred, and further subtracting underwriting expenses. The resulting underwriting income reflects the company's ability to price risk accurately and manage claims efficiently. Positive underwriting gains indicate that the premiums collected are enough to cover losses and expenses, contributing to the insurer's overall profitability.

Cash from Operating Ratio: This ratio evaluates the cash generated from the insurer's core operating activities relative to its other financial obligations. Strong cash flow from operations is essential for meeting claims and other liabilities, ensuring the insurer can operate smoothly.

Reserves to Equity Percentage: This ratio compares the insurer's reserves to its equity (surplus). It provides insight into the company's ability to cover its liabilities with its equity base. A higher reserve-to-equity ratio suggests that the insurer has substantial reserves relative to its equity, indicating conservative financial management and a strong capacity to meet future claims.

Risk Based Capital (RBC) Percentage: This ratio serves as a critical metric for assessing the financial health and stability of insurance companies. Designed to measure whether an insurer holds sufficient capital to support its unique risk profile, the RBC ratio is central to ensuring the long-term viability of these companies and safeguarding policyholders. This metric is calculated by dividing an insurer's total adjusted capital (TAC) by its authorized control level risk-based capital (ACL RBC), then multiplying by 100 to express it as a percentage:

Operating Ratio: This is a key performance metric for insurance carriers, providing insights into their overall profitability by measuring the combined impact of underwriting performance and investment income. Unlike the combined ratio (CR), which focuses solely on underwriting activities, the operating ratio (OR) incorporates the effect of investment income, offering a more comprehensive view of an insurer's financial health. It is calculated by taking the company's combined ratio and adding its net investment income ratio.

Combined Ratio: The combined ratio is a crucial indicator of an insurance company's operational efficiency and profitability. It is the sum of the loss ratio, loss adjusting ratio, and expense ratio. The combined ratio is expressed as a percentage, with a ratio below 100% indicating that the company is earning more in premiums than it is paying out in claims and expenses, which is a sign of profitability. A combined ratio above 100% suggests that the company is paying out more than it is earning, which could signal potential pricing or expense management issues.

Direct Premium Growth: Direct written premium growth measures the year-over-year increase in the total premiums written directly by the insurer before adjustments for reinsurance. This metric reflects the insurer's ability to expand its business through new and renewal policy sales. This is calculated by taking the past year direct written premium, less the current year's and dividing by the past years.

Expense Ratio: The expense ratio measures the efficiency of an insurance company's operations by comparing its operating expenses to its net written premiums. It is calculated by dividing the company's total expenses by net written premiums. A lower expense ratio indicates that the insurer is managing its costs effectively relative to the premiums it writes, which is crucial for maintaining profitability. A higher expense ratio, on the other hand, may indicate inefficiencies or higher-than-expected operating costs.

Log of Total Assets: Assets are critically important to insurance carriers because they provide the financial foundation necessary to fulfill policyholder obligations, maintain regulatory compliance, and support overall business operations. The log of total assets is used as a measure of firm size and it is normalized to induce normality in the variable. The following are the results of the probit model:

Table 6*Probit Regression of the Determinants of Mutual Conversions to Mutual Holding**Insurance Companies*

Variable Name	(1) Year of Conversion	(2) Year Prior to Conversion	(3) Two years Prior to Conversion
Intercept	-6.53 (312.600)	-6.381 (310.200)	-4.641 (315.800)
Surplus Assets	-1.779 (0.806)	-1.463 (0.727)	-3.382 (1.108)
Lead Growth	-0.001 (0.002)	-0.004 (0.004)	0.0002 (0.002)
Agent Balance to DPW	-0.002 (0.003)	-0.0004 (0.001)	-0.0006 (0.003)
Surplus Notes to Surplus	-0.06 (1.211)	-1.333 (1.066)	-0.786 (1.444)
Surplus Notes to Assets	-1.967 (4.087)	4.495 (2.224)	3.136 (3.165)
Percent Long Tail	-0.00136 (0.002)	0.0001 (0.002)	0.0008 (0.002)
Underwriting Gains	-0.734 (0.460)	-0.577 (0.424)	-1.571 (0.550)
Cash from Ops Assets	0.016 (0.011)	0.001 (0.004)	0.016 (0.014)
Reserves to Equity	-0.0007 (0.001)	-0.0001 (0.001)	-0.0068 (0.003)
ACL Risk-Based Capital Ratio %	-0.00001 (0.000)	0.000006 (0.000)	0.0000004 (0.000)
Operating Ratio Percent	0.006 (0.008)	-0.001 (0.005)	-0.001 (0.005)
Direct Premiums Written Growth %	-0.013 (0.005)	-0.015 (0.005)	-0.005 (0.006)
Expense Ratio %	0.007 (0.005)	0.004 (0.005)	-0.0005 (0.006)
Combined Ratio %	-0.001	-0.005	0.001

Table 6. (Continued)

Variable Name	(1) Year of Conversion	(2) Year Prior to Conversion	(3) Two years Prior to Conversion
	(0.008)	(0.006)	(0.006)
Log Total Assets	0.114	0.095	0.063
	(0.036)	(0.036)	(0.039)
Fixed Effects	Year	Year	Year
Observations	7,850	7,850	7,850
Log Likelihood	-250.1003	-235.039	-197.0333
Akaike Inf. Crit.	582.2	552.08	476.07

*** $p > 0.01$, ** $P > .05$, * $p > .10$

Note. Regression of the Determinants of Mutual Conversions to Mutual Holding Insurance Companies using data from the Year of Conversion ($t = 0$) (Column (1)), the Year Prior to Conversion ($t-1$) (Column (2)), and Two years Prior to Conversion ($t-2$) (Column (3)). * $p < .1$; ** $p < .05$; *** $p < .01$. Standard errors are in parenthesis.

In Column (1), which examines the relationship between performance variables measured in the same year as the conversion, the analysis reveals a statistically significant association between the surplus-to-assets ratio and the likelihood of conversion. Specifically, the coefficient of -1.779 suggests that a higher surplus-to-assets ratio is associated with a lower probability of conversion. Surplus reflects the insurer's available resources to meet future obligations; thus, a higher surplus relative to assets indicates a stronger financial position. This negative relationship persists in Column (2), which considers financial performance one year prior to conversion, and becomes even more statistically significant in Column (3), which evaluates performance two years prior. The consistency and increasing significance of this relationship across time provide evidence that insurers with greater financial strength are less inclined to convert to a MHC structure. These findings support the interpretation that stronger capital adequacy reduces the strategic need for restructuring to enhance financial flexibility.

For the year of conversion (Column (1)) the analysis reveals a statistically significant association between direct premiums written (DPW) growth and the likelihood of conversion. Specifically, the coefficient of -0.013 suggests that lower growth in direct premiums written is associated with a higher probability of pursuing a conversion. DPW growth reflects the percentage change in an insurer's premium volume, serving as a proxy for business expansion and market momentum. Slower premium growth may indicate reduced competitiveness or emerging financial pressure. This negative relationship becomes even more pronounced in Column (2), which considers growth one year prior to conversion, where the coefficient of -0.015 is statistically significant at the 1% level. However, in Column (3), which evaluates growth two years prior, the coefficient decreases to -0.005 and is no longer statistically significant. This pattern suggests that insurers facing slower premium growth in the period immediately preceding conversion may be more inclined to restructure through an MHC conversion. These findings support the interpretation that diminished growth opportunities can motivate mutual insurers to seek greater strategic flexibility or access to capital, particularly when short-term performance trends raise concerns about future competitiveness.

The log of total assets emerges as a consistently strong and statistically significant predictor of structural transitions across all examined time periods, as presented in Columns (1) and (2). In the year of conversion, the positive coefficient of 0.114 indicates that larger insurers—measured by total assets—are more likely to initiate structural transitions. This relationship remains statistically significant one year prior to conversion, with a slightly reduced coefficient of 0.095 , suggesting a modest decline in the effect

over time. These findings imply that larger insurers are more inclined to pursue conversion to a mutual holding company structure, potentially due to their greater organizational complexity, broader strategic ambitions, or increased exposure to capital market pressures that make alternative structures more attractive or feasible.

In Column (2), the ratio of surplus notes to total assets exhibits a statistically significant positive relationship with the likelihood of conversion, with a coefficient of 4.495 and a p-value below the 0.05 threshold. This result suggests that insurers with higher levels of surplus notes are more likely to undergo structural conversion. Surplus notes, which are subordinated debt instruments counted toward regulatory capital, may indicate a pre-existing reliance on alternative forms of capital financing. The positive association implies that insurers leveraging surplus notes may view conversion to a mutual holding company structure as a strategic mechanism to further strengthen or expand their capital base, potentially through enhanced financial flexibility or improved access to external funding sources.

In Column (3), the variable representing underwriting gains exhibits a negative and statistically significant relationship with the likelihood of conversion, with a coefficient of -1.571 significant at the 5% level. This specification reflects performance two years prior to the conversion event. Underwriting gains measure the profitability of an insurer's core insurance operations, exclusive of investment income, and thus serve as a key indicator of operational efficiency. The significant negative association suggests that insurers with weaker underwriting performance are more likely to pursue conversion to a MHC structure. While the coefficients in Columns (1) and (2) are also negative, they do not reach statistical significance; nonetheless, the consistent directionality across all

time periods reinforces the interpretation that underwriting profitability may influence strategic restructuring decisions. These findings align with theoretical expectations that persistent operational underperformance can act as a motivating factor for insurers to adopt alternative organizational forms in search of improved financial flexibility and long-term viability.

Finally, Column (3) highlights the reserves-to-equity ratio as being statistically significant, with a coefficient of $-.068$. This finding suggests that insurers with higher reserves relative to equity, which indicates a conservative approach to managing liabilities, are less likely to convert to an MHC.

Summary Conclusion of Probit Model

The results of the probit model provide empirical support for the theoretical expectation that financial condition plays a central role in mutual insurers' decisions to convert to a MHC structure. Consistent with the access-to-capital hypothesis (Mayers & Smith, 1994), firms with stronger balance sheets and strong underwriting performance are less likely to pursue conversion. Indicators such as surplus-to-assets ratios, underwriting gains, and premium growth trends suggest that financially healthy insurers are more inclined to retain the traditional mutual form, likely due to reduced reliance on external capital and less need for structural reorganization (Erhemjants & Phillips, 2012).

Conversely, the model indicates that insurers are exhibiting signs of operational strain or strategic stagnation—such as slower premium growth, elevated expense ratios, and increased reliance on surplus notes—are more likely to convert. These findings support the interpretation that conversion may serve to enhance financial flexibility and reposition the firm amid performance challenges. Firm size, as proxied by total assets,

also emerges as a significant factor, suggesting that larger insurers may be more willing and better equipped to undertake the complex and resource-intensive process of structural transformation (McNamara & Rhee, 1992). Taken together, the evidence supports a strategic interpretation of conversion, in which both internal financial pressures and organizational capacity influence the timing and likelihood of adopting the MHC form.

Dynamic Difference in Difference Model Analysis

For H2, we employed a difference-in-difference model, specifically a dynamic difference-in-difference model, which allowed the analysis of multiple years before and after the treatment. This model enables a comparison of mutual companies that transitioned to a mutual holding company structure with the broader population of mutual companies that did not. By including the entire mutual insurance population as the comparison group, we assessed the performance of companies that converted (the treatment group) against those that remained mutuals, spanning 5 years before treatment (t-5) to 5 years after treatment (t+5). The following section includes a presentation of the results from the dynamic difference-in-difference models across several financial performance variables.

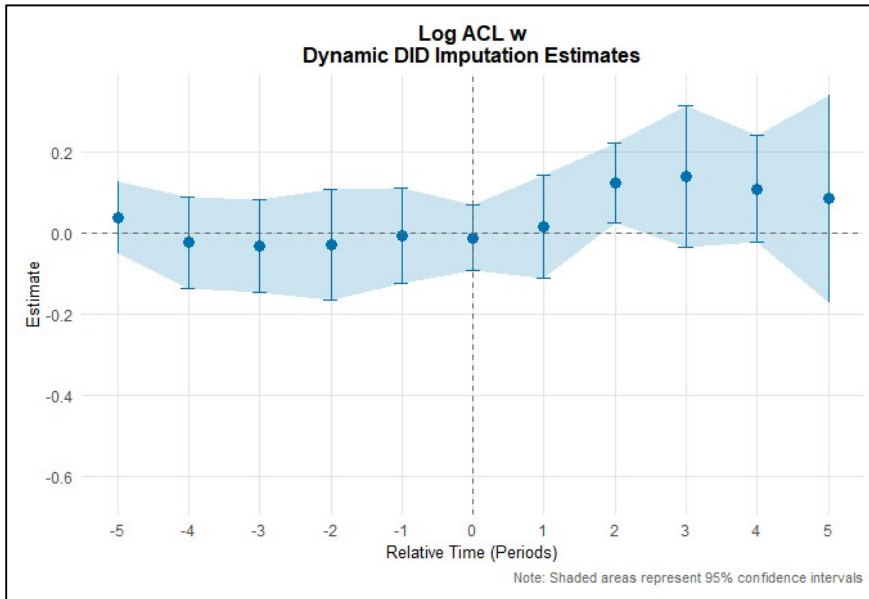
The DiD model is applied to several financial performance metrics to evaluate the impact of conversion. These metrics include the Log of the Authorized Control Level (see Figure 3), Operating Ratio (see Figure 4), Log of the Surplus-to-Assets Ratio (see Figure 5), Reserve-to-Equity Ratio (see Figure 6), Combined Ratio (see Figure 7), Underwriting Income (see Figure 8), Net Written Premium Growth (see Figure 9), Policyholder Surplus (see Figure 10), Expense Ratio (see Figure 11), and Premium Growth (see Figure 12).

Each of these variables was hypothesized to reflect key aspects of financial performance, offering insight into the effects of conversion on insurers.

Before the treatment period, the assumption was that the coefficients would remain near zero and relatively flat in the model, which would indicate parallel trends between treated and untreated groups. This alignment would suggest that the groups behaved similarly before the treatment, providing a solid baseline for comparison. After the conversion, the expectation is that the performance metrics may diverge, revealing the causal effects of the structural change. The posttreatment period could exhibit several patterns. Positive coefficients over the 5 years following conversion would imply a beneficial impact on financial performance, suggesting that the conversion enhanced operational or financial outcomes. Conversely, negative coefficients would indicate a detrimental effect, signaling challenges or inefficiencies introduced by the transition. Alternatively, random, or nonsignificant coefficients would suggest no measurable impact, indicating that the conversion had little to no effect on the selected financial metrics. The DiD model provided a framework for examining the dynamic impacts of conversion on an insurer's financial performance, allowing a comprehensive assessment of changes over time.

Figure 3

Log of Authorized Control Level DID



The authorized control level (ACL) ratio is a metric used to evaluate an insurance company’s capital adequacy, indicating its capacity to absorb losses and maintain solvency under various financial conditions. The ACL was logged to ensure the data removes outliers that could otherwise skew the data, such as an extremely high RBC ratio. As Figure 3 illustrates, during the pre-treatment period (from relative time from -5 to 0), the estimates remain close to zero, with confidence intervals containing the zero threshold. This suggests that the parallel trends assumption was satisfied, indicating that, before treatment, both the treated and untreated companies exhibited similar trends in capital adequacy.

Period 0 marks the introduction of the treatment, with estimates remaining close to zero at this stage. This suggests that any measurable effect of the treatment has not yet emerged or is in its early stages, aligning with expectations that immediate changes in the

outcome variable may take time to manifest in the carrier. In the subsequent posttreatment period, spanning periods 1 to 3, the estimates demonstrate a gradual upward trend, indicating an increasing treatment effect on the log-transformed ACL variable. This pattern points to a positive and potentially cumulative effect of the treatment over time. The upward trajectory of the estimates further suggests that the impact of the treatment may grow as time progresses. However, it is noted in years 4 and 5 that the ACL ratio begins to decline incrementally, signaling that factors are reducing the carrier’s ratio, which may perhaps align with the trend seen in Figure 4.

Figure 4

Dividends to Shareholders – PHC DiD

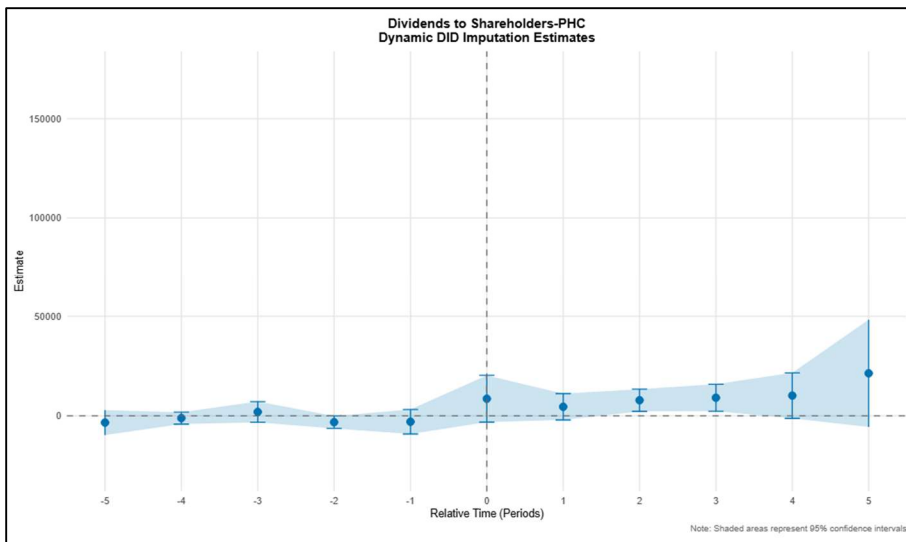


Figure 4 provides evidence supporting the parallel trends assumption in the pre-treatment period, spanning relative periods -5 to -1. During this time, the estimates remain close to zero, and the confidence intervals consistently overlap with zero. This stability suggests that, before the introduction of the treatment, there were no significant

differences in dividends to shareholders of the MHC between the treated and control groups.

Once treatment occurs, it is noted that in the treatment period to year 3, there is only minor movement, suggesting that there is no significant increase in dividends to shareholders in the 3 years post close. However, it is noted that in period 4 and 5, dividends appear to increase, signaling that carriers are paying out dividends to the MHC. The ACL of a carrier, as discussed in the Figure 4, is significantly influenced by the carrier's surplus. In treatment periods 4 to 5, it was noted that the ACL ratio declined, which appears to align with the increase in dividends paid out to the MHC. This could possibly signal that MHC's are moving the surplus from the carrier to the MHC.

Figure 5

Operating Ratio Winsorized DiD

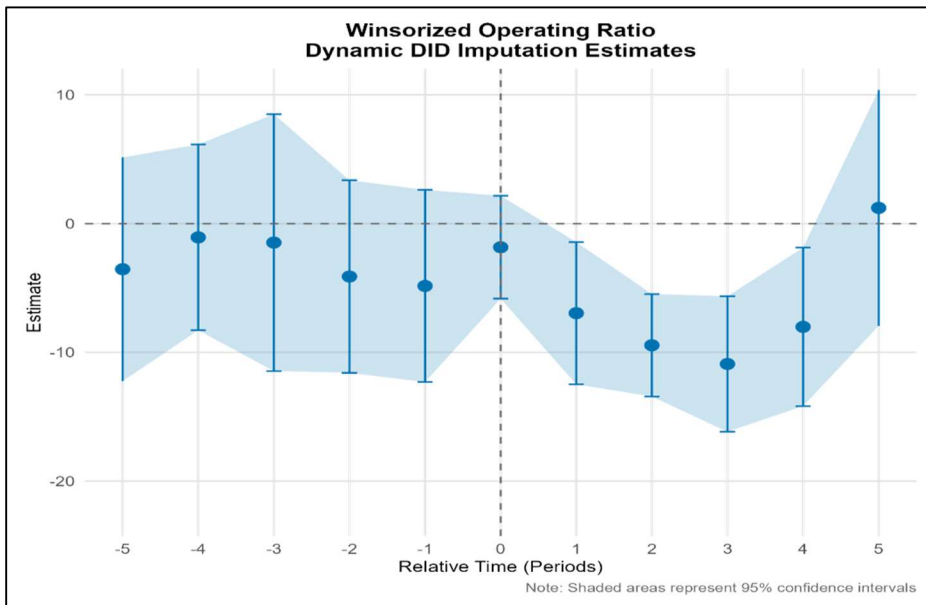


Figure 5 is an illustration of how conversion causes changes in the operating ratio. As mentioned, the operating ratio is critical to a carrier. A lower operating ratio signifies enhanced efficiency and more robust financial performance, reflecting the insurer's ability to manage claims, expenses, and overall operations related to its premium income.

In the pre-treatment period (from relative time -5 to 0), the estimates for the operating ratio displayed variability, with confidence intervals consistently crossing the zero threshold. This observation supports the parallel trends assumption, indicating that, before the treatment, both the treated and untreated companies followed similar trajectories in their operating ratios. Following the treatment, the analysis reveals statistically significant improvements in the operational performance of the insurance companies, as evidenced by consistent reductions in the operating ratio. These reductions begin immediately after the treatment and continue to the fourth posttreatment year. The sustained decrease in the operating ratio posttreatment suggests that the intervention had a lasting positive impact on the operational efficiency and financial performance of the insurance companies under study.

To ensure the relevance of these findings, the data for the operating ratio were winsorized to mitigate the influence of outliers. Winsorizing involves capping extreme values within a dataset to prevent them from disproportionately affecting the results (Cameron & Trivedi, 2005). This adjustment was deemed necessary for the operating ratio because it is particularly sensitive to large, isolated variations caused by operational anomalies or one-time external shocks. For example, a carrier experiencing an unusually high operating ratio due to catastrophic losses or other extraordinary events could skew the results, leading to misleading conclusions about the treatment's effectiveness (Michel-

Kerjan & Morlaye, 2008). This adjustment was not applied to all other metrics because some metrics are generally less prone to extreme values and volatility. These metrics often reflect broader financial trends and are inherently more stable, reducing the need for winsorization (Cummins & Weiss, 2010). By selectively applying winsorization to the operating ratio, it was ensured that the analysis focused on meaningful performance changes while maintaining the integrity of the broader dataset.

Figure 6

Log of Surplus DiD

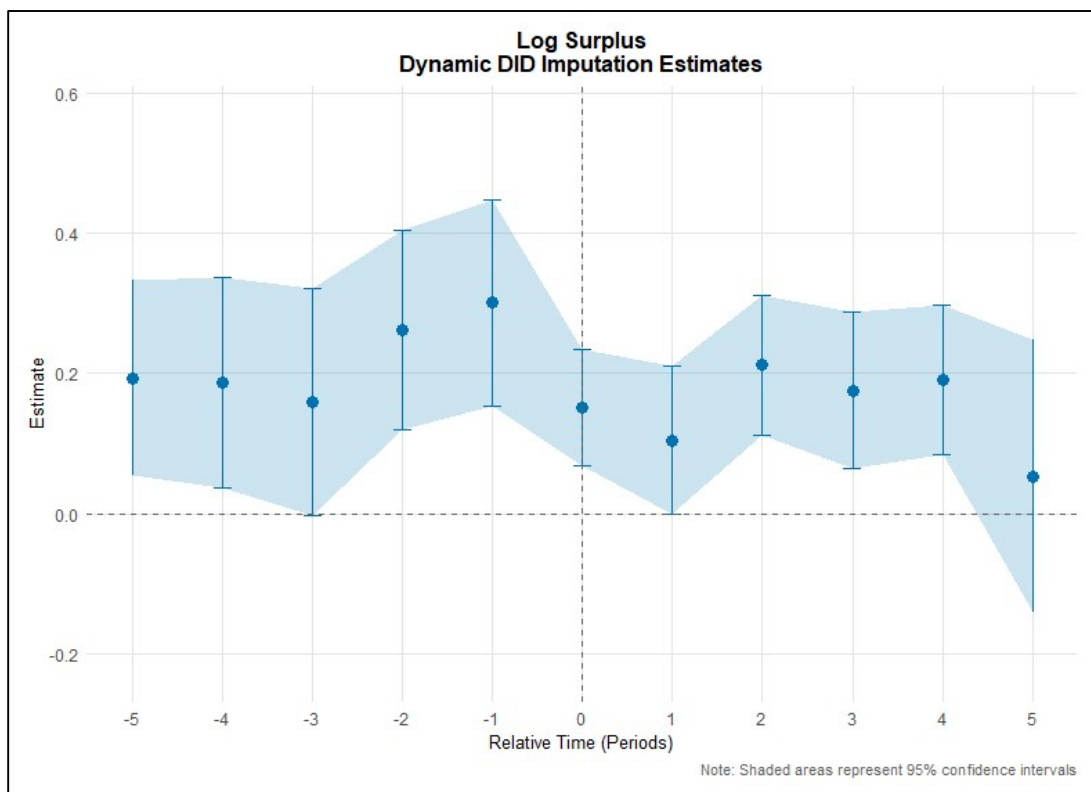


Figure 6 is an illustration of the logs of the surplus-to-assets ratio, a critical measure of an insurer's financial health. This ratio represents the proportion of an

insurer's surplus relative to its total assets, providing a view of its ability to cover unexpected losses or liabilities beyond anticipated obligations. Surplus, which reflects policyholders' equity, serves as a key indicator of an insurer's solvency and overall financial stability. Higher surplus-to-asset ratios signal a stronger capacity to absorb financial shocks and meet policyholder obligations, making this metric essential for understanding an insurer's resilience.

The log transformation of surplus-to-assets was applied to address the wide skewness often present in raw financial data. Logging makes the data appear more normal, allowing for better comparisons across insurers of varying sizes and improving the interpretability of percentage changes. By applying the log transformation, the analysis emphasizes relative changes in the surplus-to-assets ratio rather than absolute differences, providing a clearer understanding of how conversion influences financial stability.

Before treatment, the coefficients for the log of surplus-to-assets are consistently positive and above zero, indicating a stable financial position among insurers. However, the parallel assumption is not likely to hold. However, after treatment, the coefficients remain primarily positive and above zero, suggesting minimal impact on surplus following conversion. Although there may be a slight increase in the surplus-to-asset ratio post-conversion, this effect is almost indistinguishable from the pre-treatment trends. These results indicate that the conversion process had little measurable causal effect on this key financial stability metric.

Figure 7

Reserve to Equity DiD

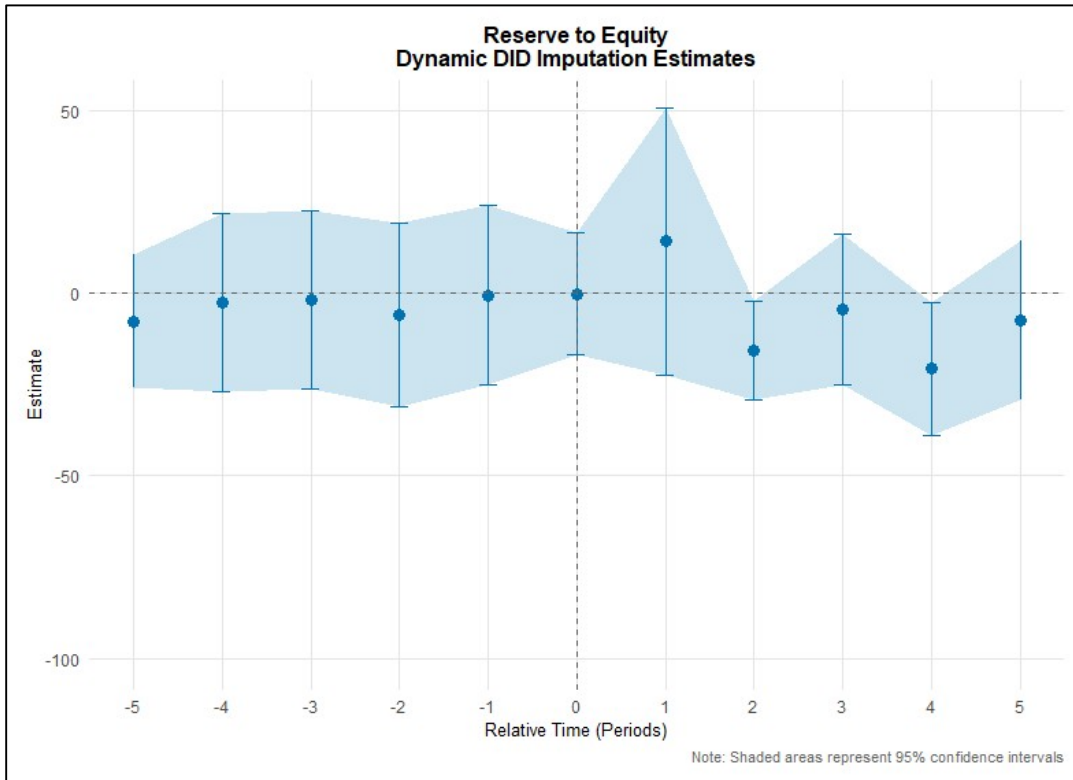


Figure 7 illustrates the analysis of the reserve-to-equity ratio. The coefficients in the pre-treatment period are zero, suggesting the parallel trends assumption is met. Posttreatment, in relative periods 0–1, negative coefficients can be seen. However, it is essential to note that during the periods just before 2–5 years posttreatment, the estimates show a decrease in the reserve-to-equity ratio with confidence intervals that do not cross zero. Thus, there is some evidence that conversion reduces the reserve-to-equity ratio. This ratio reduction can be thought of as a good thing in terms of financial performance, as lower reserves could lead to higher reported profits. Equity increases can also reduce

this ratio, which would be consistent with access to capital, and it could be that the firm has lower future loss expectations and can lower reserves.

Figure 8

Combined Ratio DID

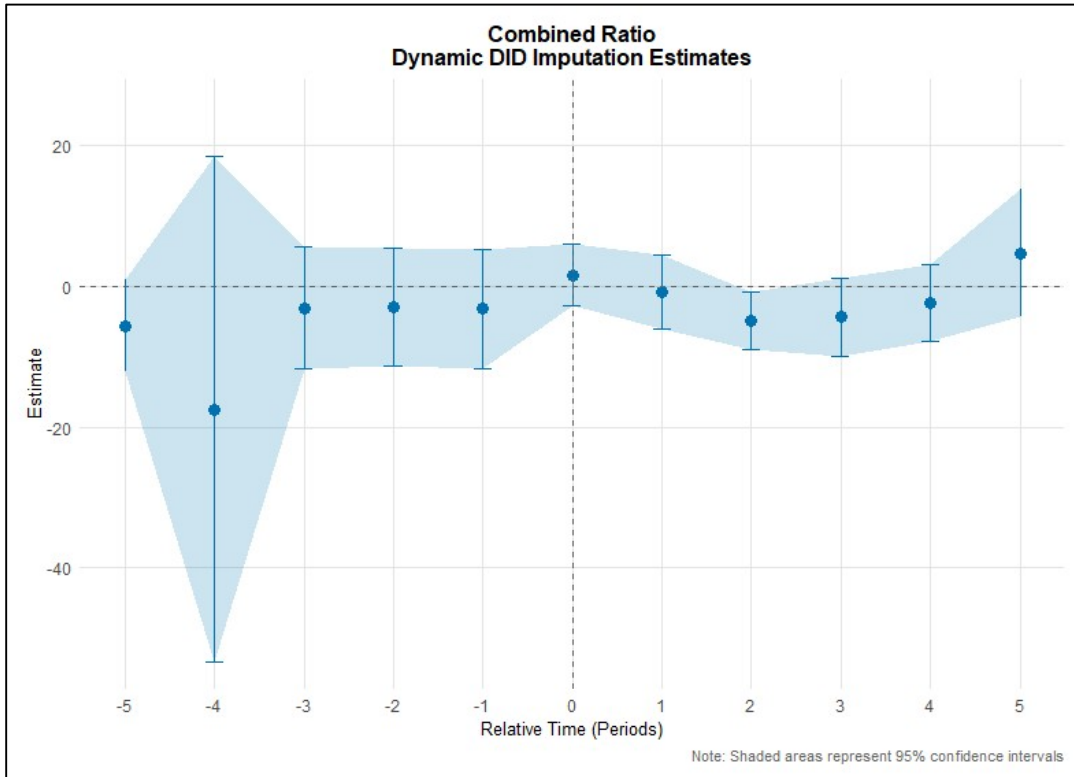


Figure 8 illustrates the analysis results of the combined ratio percentage. The combined ratio results indicate that the treatment did not have a causal effect on the insurer's profitability across the observed periods. Both pre-and posttreatment estimates remained near zero, with confidence intervals consistently crossing the zero line, suggesting that any variations in the combined ratio percentage are likely attributable to normal fluctuations rather than the treatment itself. Notably, the analysis around year 3 shows a slight improvement in the combined ratio percentage, which suggests a potential

positive impact. However, this effect is not statistically significant, indicating that it could be due to random variation. The parallel trends observed in the pre-treatment period further validate the analysis, confirming that the treated and nontreated companies were comparable before the intervention. These findings imply that the treatment did not significantly alter the combined ratio percentage, but it may have had some minor impact on the overall combined.

Figure 9

Underwriting Income as a Share of Net Income DiD

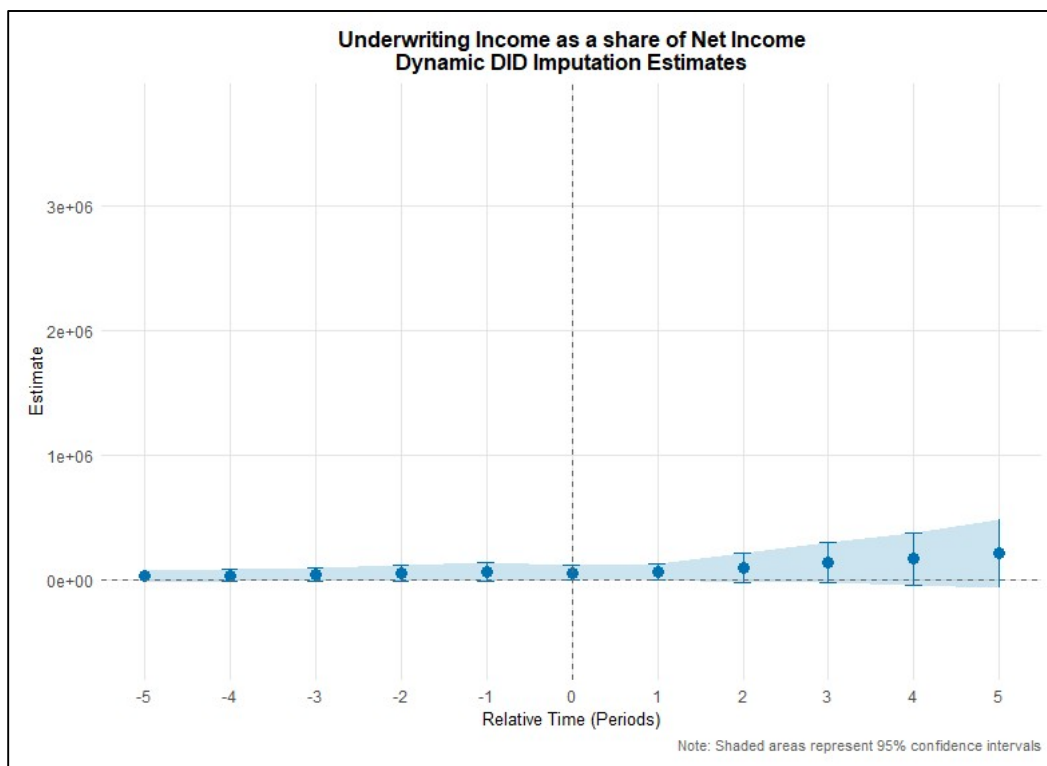


Figure 9 is a depiction of the underwriting income as a share of net income. As illustrated in the figure, the assumption of parallel trends holds in the pre-treatment period between the treated and untreated groups. The increase in the estimates after the

treatment period indicates that the intervention positively affected underwriting income as a share of net income. The effect appears to grow stronger over time, as shown by the gradual increase in estimates from periods 1 to 5. The confidence intervals in the posttreatment period support the claim that the observed effect is not due to random fluctuations, as they mostly stay above zero, indicating significance.

Figure 10

Net Premium Written Growth Percentage

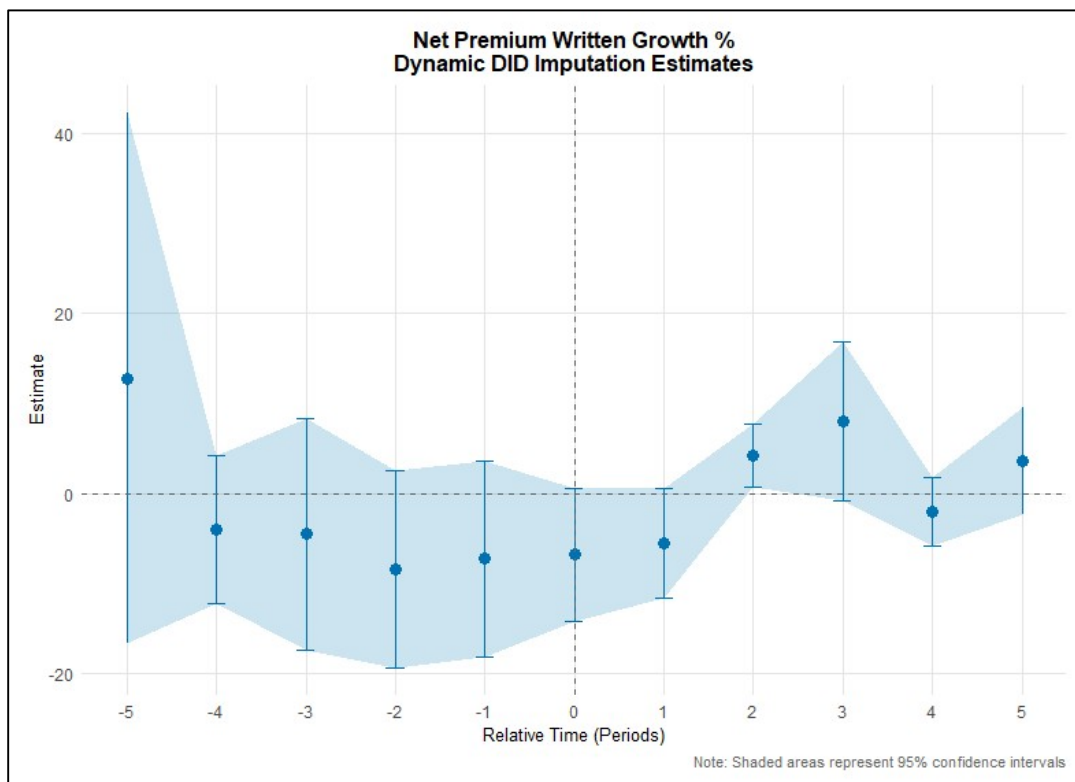


Figure 10 includes the results of the net premium growth analysis. Net Premium Written Growth percentage reveals that the treatment had no statistically significant impact on premium growth in the immediate aftermath of the intervention. Estimates before and shortly after the treatment are close to zero, with confidence intervals crossing

the zero line, indicating that any observed changes in premium growth are likely due to random variation rather than the treatment itself. However, a positive trend emerges around 2 years posttreatment, with estimates showing an increase in Net Premium Written Growth percentage. This trend continues into the 3-year mark, suggesting a possible long-term positive effect. Operationally, the net premium growth emerging 2 to 3 years post conversion makes sense, depending on how that growth is created, whether through reinsurance changes or growth.

Figure 11

Surplus as Regards Policyholders

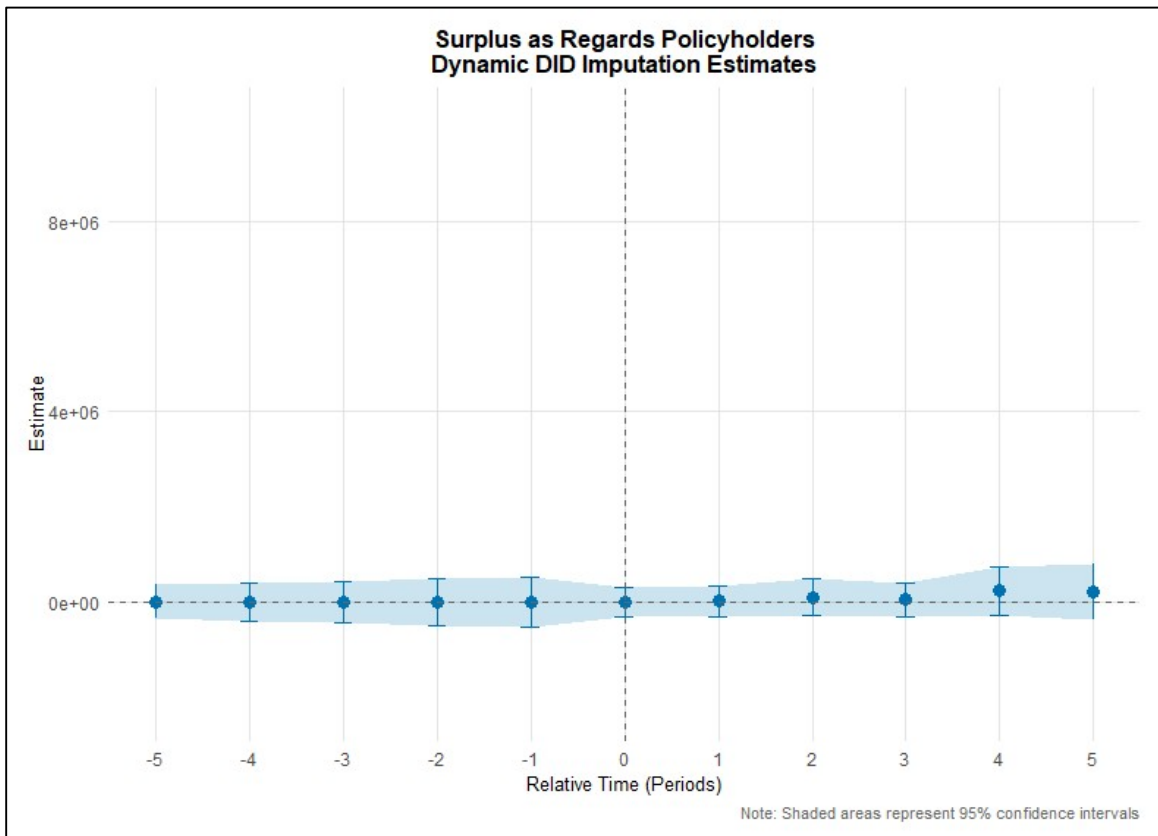


Figure 11 is an illustration of the results by examining policyholder surplus. The analysis of policyholder surplus indicates that the treatment had no statistically significant effect on policyholder surplus throughout the observed periods. Estimates remained near zero, with confidence intervals consistently crossing the zero line, suggesting that any fluctuations in surplus are likely attributable to normal variation rather than the treatment. The parallel trends observed in the pre-treatment period further validate the analysis, confirming that the treated and non-treated groups were comparable before the intervention.

Figure 12

Expense Ratio DiD

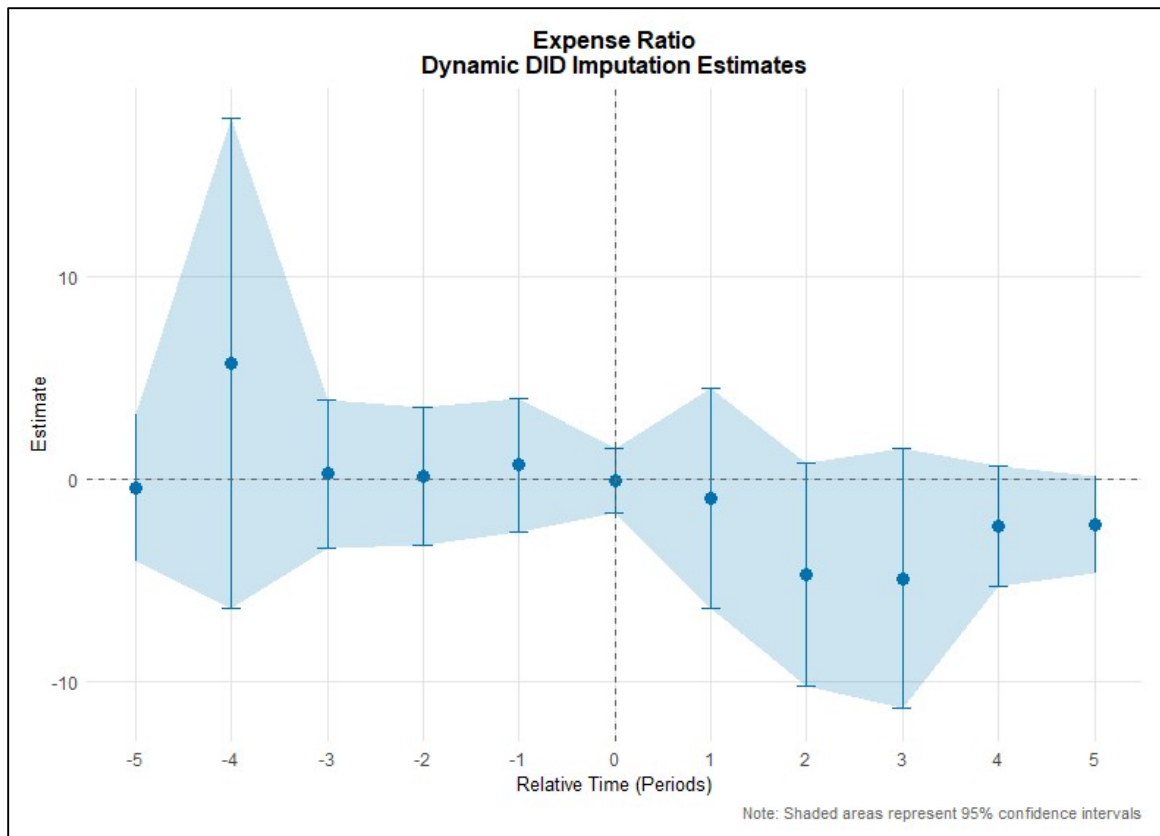
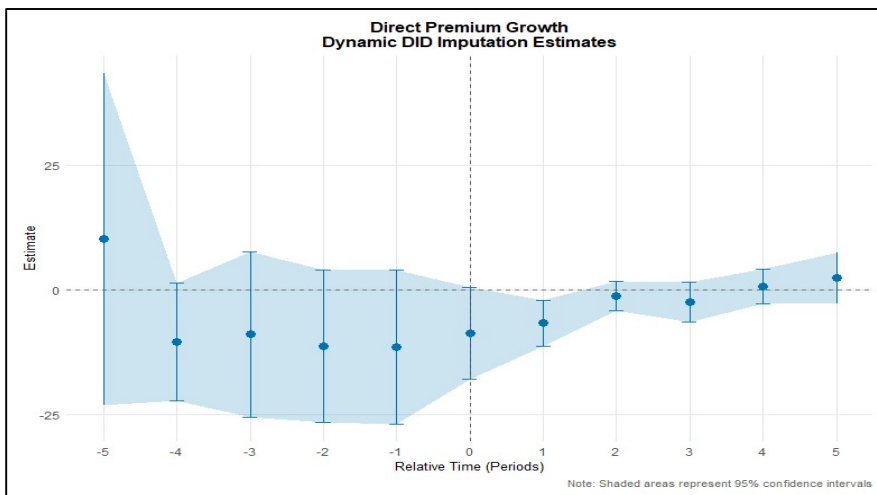


Figure 12 illustrates the results of the expense ratio. The estimates during the pre-treatment period (from -5 to 0) fluctuate around zero, with confidence intervals consistently crossing the zero line. This suggests no significant difference in the expense ratio between the treated and nontreated groups before the treatment. The parallel trends assumption is satisfied, indicating that the two groups were comparable in their expense ratios before the intervention. After the treatment (from 0 to +5), the estimates remain close to zero, with confidence intervals crossing the zero line. Although there is not much movement in year +1, a significant trend down in expense ratio can be seen in years +2–+3 before slightly rising in year 4 and remaining relatively flat in year 5. This could indicate that although converting may not impactfully alter the combined ratio, it can have a positive impact on the expense ratio. This may suggest that carriers are able to withstand higher loss and loss adjusting ratios post conversion due to the overall reduction in their expense ratio.

Figure 13

Direct Premium Growth DiD



Finally, Figure 13 illustrates the analysis of how conversion affects direct premium growth. The DiD analysis of Direct Premium Growth percentage reveals that the treatment did not significantly impact premium growth immediately after the intervention or in the longer term. The first coefficient after the treatment, approximately one-year postintervention, shows a slight positive estimate. However, it starts from a negative baseline and exhibits a positive slope, indicating some initial improvement. Nevertheless, the confidence interval crossing the zero line suggests this increase is not statistically significant, meaning the observed uptick in premium growth could be due to random variation rather than the treatment's effect. Overall, the general trend in the posttreatment period remains near zero, with no substantial or sustained effect on premium growth attributable to the treatment. These findings suggest that the treatment did not meaningfully alter the growth trajectory of direct premiums written, highlighting the need for further investigation or additional strategies to achieve the desired impact on premium growth.

Difference in Difference Conclusions

The DiD analyses revealed varied impacts of structural interventions on insurance companies. The ACL ratio showed improvement posttreatment, particularly in Year 3, suggesting a potential enhancement in capital adequacy. However, the surplus-to-assets ratio and policyholder surplus exhibited minimal changes, indicating that financial stability metrics remained largely unaffected. The operating ratio demonstrated consistent and significant improvement posttreatment, reflecting enhanced operational efficiency and supporting the efficiency hypothesis. Similarly, underwriting income as a share of net income increased significantly over time, indicating stronger financial performance. Net

written premium growth showed a delayed positive effect around Years 2 and 3, suggesting potential long-term benefits. Other metrics, such as the combined ratio, showed no significant changes, indicating the treatment had little influence on underwriting profitability. The expense ratio displayed moderate improvements in the later posttreatment periods, reflecting gradual gains in cost efficiency. Direct premium growth remained largely unchanged, with no substantial or sustained effect attributable to the intervention.

Overall, the analyses suggest that structural interventions had mixed effects. Significant improvements in operational efficiency and underwriting income support the efficiency hypothesis, indicating better use of resources and stronger internal capital generation. However, the limited changes in metrics like the surplus-to-assets ratio and combined ratio point to uneven benefits from the transition. The initial increase and later decline in ACL, along with the rise in dividends shown in Figures 3 and 4, suggest that surplus may be shifting from the mutual insurer to the holding company after conversion—potentially for use in acquisitions, expansion efforts, or other strategic initiatives.

This pattern implies that the decision to form an MHC may be driven by more than just surplus management or immediate capital needs. It may also reflect broader strategic objectives, including the creation of more flexible ownership structures and openness to outside investment. In recent years, private equity has entered this space in more visible ways. One example is The Mutual Group, a platform launched by Bain Capital Insurance following its acquisition of the operational assets of GuideOne Insurance Company. The Mutual Group is designed to offer operational services—such

as underwriting, claims management, policy administration, and reinsurance purchasing—to mutual insurers through a fee-based model. While mutuals maintain their formal legal structure, the arrangement introduces an external financial partner into what has traditionally been a policyholder-owned domain. In return, private equity investors gain access to recurring revenue streams and potential influence over strategic decision-making without requiring full demutualization.

Rather than simply serving as a support structure, this model reflects a growing trend in which MHCs can act as a bridge between mutual insurance and capital markets. While this may offer efficiencies or scale in some cases, it also raises questions about how surplus and control are redistributed across the system. In this light, the MHC structure can serve not only as a regulatory and financial tool, but also as a mechanism for integrating private capital into the mutual insurance landscape in ways that warrant continued attention and scrutiny.

CHAPTER 4

RATIONALES FOR COVERSION: STRUCTURAL TOPIC MODELING

Converting a mutual company into either an MHC or a full demutualization is not something an insurer can do spontaneously. It requires both regulatory approval and a positive policyholder vote. As such, the insurer must explain why it wants to convert and the benefits to the insurer and policyholders. A structural topic modeling (STM) is used to analyze publicly available filings and announcements from the mutual insurance companies that have transitioned to mutual holding structures. The aim of this study was to uncover thematic patterns and strategic motivations within these documents and understand how company boards and management communicate with policyholders, the public, and regulatory bodies to justify their decisions. By applying STM, we aimed to validate whether the rationales provided by these companies aligned with empirical results found in the first study. This helped with the assessment of whether management's communication matches their actions and strategic decisions.

Topic Modeling

Topic modeling is a statistical method used to discover hidden topics within a collection of documents. A topic is a collection of related words within a document. Traditional topic models, such as latent Dirichlet allocation (LDA), analyze word co-occurrences to group words into topics. Although LDA effectively identifies topics, it has limitations in contextual analysis. According to Grimmer and Stewart (2013), "Topic models, such as LDA, operate under the assumption that topics are independent and uniformly distributed across documents, which may overlook contextual influences in thematic analysis" (Grimmer & Stewart, 2013). As a result, the LDA approach cannot

account for differences in documents that might be due to time, different authors, or different regulatory regimes. Having this flexibility is important due to the spread of mutuals that converted over time and by state.

Structural Topic Modeling (STM)

STM encompasses the capabilities of traditional topic models by integrating document-level metadata, allowing us to incorporate external variables into the analysis. This feature provides a more nuanced understanding of how topics manifest and evolve over time and across different contexts. An example of this extra information or metadata that might be used is the date the document was written or the type of document it might be. Roberts et al. (2014) emphasized that “STM’s ability to integrate metadata allows us to observe how topics vary with document-specific characteristics [found in the metadata], enhancing the interpretability of the model.” This makes STM particularly useful for analyzing complex text data, such as financial filings and regulatory documents. Roberts et al. also demonstrated STMs when they analyzed how topics in survey responses varied by demographic factors. This study revealed that although not profound, integrating metadata enriches the understanding of thematic content and helps draw more targeted conclusions.

STMs have been utilized in various fields, including political science and policy analysis, where understanding context and metadata is essential. In their study on analyzing open-ended survey responses, Roberts et al. (2014) showed how STM can identify how topics are influenced by external factors, such as respondent demographics or periods. Similarly, Lee and Lee (2022) applied STM to market research to reveal how community sentiments evolved over time, emphasizing the model’s effectiveness in

handling complex text data and capturing thematic changes. This type of model allows analysts and researchers not only to analyze the documents themselves, but also permits them to overlay variables, such as the year of conversion and the legal firm used to convert.

Methodology

In this study, the STM model was utilized to analyze the sourced documents by breaking them down into topics that comprised related words. The model was then employed to identify patterns in how these words were used throughout the documents. For instance, if words such as “capital constraints,” “growth,” and “expansions” frequently appear together, the STM recognizes this grouping as representing a topic related to financial strategies. The model then groups words commonly occurring together into categories representing distinct ideas or subjects. However, it is up to the reader to determine the name of the topic.

As mentioned above, a unique aspect of an STM is its ability to incorporate metadata about documents, which the LDA models cannot accommodate. In the context of mutual insurance conversions, these metadata include details, such as the time of the filings, the type of disclosure, and state of approval. By incorporating metadata, STM can analyze how topics shift over time or vary by regulatory context and legal representation. This allowed the identification of trends, revealing whether specific issues become prominent over different periods or in particular environments. After the STM analysis, the model provided results that helped identify the most important words for each topic, helping us determine the main themes and focus areas within the documents.

Data Collection

The original dataset comprised over 80 mutuals that had converted into mutual holding companies. Initially, the aim of the second study was to analyze proxy statements, the U.S. Securities and Exchange Commission (SEC) no-action filings, and Form A filings from mutual insurance companies that have undergone conversion to MHC structures. However, during the research process, it became evident that state-specific requirements for such conversions are not uniform. Some states, such as Maryland, do not mandate Form A filings, whereas others have companies that did not submit SEC no-action filings as they were unnecessary. There were other scenarios where the mutual carrier was forced into a conversion or converted to be acquired. Due to this, the initial sample size was smaller than needed for the STM model.

After recognizing these inconsistencies, we expanded the data collection beyond the initially identified regulatory filings. To ensure a more comprehensive analysis, publicly available post-conversion announcements were utilized, which were mostly press releases. These documents are particularly valuable as they provide justifications and strategic narratives from company management for public consumption. As such, if the announcement of the conversion could not be located through public relations (PR) news, press release articles were utilized. If a carrier did not have an announcement, a search for the SEC, proxy statements or Form A's was conducted. If this avenue was unsuccessful, additional data and information was searched through Google searches. The filings and announcements analyzed in this study were sourced from various publicly accessible repositories, including state regulatory databases, PR-News found in Lexis-Nexus, and industry records that compile insurance company filings. Additionally,

supplementary data were obtained directly from mutual insurance companies that have undergone conversion and from the legal firms that facilitated these structural transitions.

Keywords used to identify relevant documents included the *company's name*, *mutual conversion*, *mutual holding company*, and *reorganization*. Knowing the entire population of insurers that converted and the year they converted permitted the narrowing down of the period to search for the appropriate information. The company name was also removed, allowing us to identify the most recently (2024 and 2025) converted insurers. The insurers were not picked up in the original empirical study, which examined data through 2023. As noted in Table 7 below, we were able to find 28 announcements of conversions.

Table 7

Number of Documents From Each Source

Source	Number of Documents
PR News (Lexis Nexis)	21
Form A filings	2
Proxy Statements	1
AM Best Press Release	2
Company's Own Press Release	2

Although there is no concrete evidence explaining why earlier MHC conversions were not as widely advertised as those occurring in the last 5 years, this trend may reflect a broader shift in how the mutual insurance industry perceives MHC structures.

Historically, the mutual insurance industry has maintained a skeptical stance toward MHC conversions, largely due to concerns over policyholder rights, transparency, and the potential for financial misalignment. Schiff (1998) critically examined MHC conversions and underscored how this model dilutes policyholder ownership rights, replacing them

with non-transferable membership interests that disappear upon policy lapse. This restructuring also introduces potential conflicts of interest, as company executives may gain access to stock options and equity participation, shifting the financial incentives away from policyholders and toward management. The historical resistance of the mutual industry to MHC conversions is grounded in these concerns—especially the notion that such conversions blur the distinction between mutual and stock insurers, weakening the foundational principle of policyholder ownership and control.

In recent years, the mutual insurance industry has exhibited a notable shift in its perception of MHC structures. Historically, mutual insurers approached MHC conversions with caution, however, contemporary challenges—such as evolving market dynamics and the necessity for capital flexibility—have prompted a reevaluation of these structures. NAMIC has observed this trend, noting that MHC conversions are now considered viable options by many mutual property/casualty insurers. This shift has created a new learning curve for mutual insurers as they seek to fully understand the benefits and potential drawbacks of the MHC model to make informed decisions about their organizational structures. This shift has opened the space to outside investors, most notably private equity businesses entering the sector. The challenge of mutuals that seek to obtain capital externally must balance merging mutuality with the demands of external investors.

Document Processing

Documents were collected in both PDF and plain text formats. Text files were imported directly, whereas PDFs were processed if needed using the `pdftools` package in R, which extracts text from each page into a character vector (Ooms, 2019). The page-

level text was then combined into a single string of text for each document, resulting in a consistent document structure across file formats. After importing, each document was assigned a unique numerical code, which served as a primary key to merge firm-level metadata from an external spreadsheet. This metadata included company characteristics (e.g., domicile state, legal counsel if found, data of press release, etc.) derived from regulatory filings and industry reports. Merging metadata with the text corpus allowed for contextualize textual analysis results and relate topics to firm-level attributes (Grimmer & Stewart, 2013).

Text Cleaning and Pre-Processing

Before data analysis, each document underwent a series of pre-processing steps using the *quanteda* package (Benoit et al., 2018). These steps are consistent with best practices in computational text analysis and ensured that the resulting corpus reflected meaningful linguistic content rather than extraneous noise (Silge & Robinson, 2017). The steps included standardizing word forms to lower case, removal of punctuation, numbers, symbols, and removal of stop words (such as, “the,” “and,” “of,” etc.) using predefined lists derived from *quanteda*. Additionally, a custom list of words was overlaid to eliminate for the analysis. The custom list included items, such as company names, contact information, geographic references, publication sources, dates, and other terms that were either excessively common or irrelevant to the research question. Such removal is a common practice in domain-specific text analysis to mitigate the overrepresentation of boilerplate content (Wilkerson & Casas, 2017).

Table 8*Table of Descriptive Statistics for the Corpus*

Variable	<i>N</i>	Mean	Min	Max
Document length (words)	29	564.1	117	4452
Number of Sentences	29	44.07	12	299
Company Code	29	16716	10178	42617
Date of Submission	29	2015	1999	2020
Date of Approval	29	2016	1998	2025

Determining the Optimal Number of Topics

A critical methodological decision in topic modeling is the selection of the number of topics (*K*), which balances model complexity with interpretability and fit (Grimmer et al., 2022). To select an appropriate *K* for this study, we employed a diagnostic search process using the `searchK()` function from the Structural Topic Model (STM) package (Roberts et al., 2014). This function fits multiple topic models with varying numbers of topics and evaluates each model using a suite of diagnostic metrics, including:

- **Held-Out Likelihood:** It measures how well each fitted model predicts data that was intentionally held out during training. Higher held-out likelihood indicates better predictive performance (Wallach et al., 2009). Typically, this metric peaks or levels off at the optimal number of topics.
- **Residuals:** This captures the proportion of variation in the data that the model does not explain. Lower residual values indicate a better fit. A sharp decline followed by leveling off is a common pattern indicating the optimal *K*.
- **Semantic Coherence:** This evaluates how often the most probable words within a topic co-occur in the same documents. Higher semantic coherence generally

indicates more interpretable topics (Mimno et al., 2011). Peaks or plateaus in this metric suggest an optimal K.

- **Lower Bound:** This reflects a lower bound on the model’s marginal likelihood. This is related to model fit and convergence, with higher values preferred.

For this study, models were fit across candidate topic numbers ranging from 5 to 15. Based on the combination of these diagnostics —particularly peaks or plateaus in held-out likelihood, semantic coherence, and lower bound, alongside a decline in residuals—we determined that a model with 6 topics provided the optimal balance between fit and interpretability. This decision reflects a trade-off between maximizing model performance and maintaining a manageable and interpretable set of topics, consistent with best practices in applied topic modeling (Roberts et al., 2014).

Structural Topic Model Estimation

The final STM was fit using 6 topics based on the results of the search exercise. Document-level information is incorporated into the modeling process, which allows topic proportions within each document to vary based on the metadata (Roberts et al., 2014). In this case, prevalence was modeled as a function of the date of regulatory approval, along with log-transformed document length and sentence count to account for variation in document size and density. We could not get other regulatory metadata that would vary enough to use. However, we could account for the document’s complexity by examining the overall document length and the number of sentences. The STM was estimated with a fixed random seed to ensure reproducibility.

Estimating Covariate Effects on Topic Prevalence

To understand how firm-level characteristics and document attributes influence the distribution of topics, the estimate effect function was applied, which regresses topic proportions on document-level covariates (Roberts et al., 2014). This analysis allowed the us to quantify how the prevalence of each topic varied systematically over time and across documents of different lengths. Such analyses are essential in regulatory and corporate communication studies, where evolving language use may reflect changing regulatory environments, strategic positioning, or evolving firm strategies, some of which were noted in the analysis.

Topic Interpretation and Content Analysis

Following topic estimation, a multi-step process was undertaken to interpret and label the topics, ensuring that the identified themes aligned with the theoretical constructs and empirical expectations identified in past literature on mutual insurance conversions and surplus management. This process combined keyword analysis, word frequency visualizations, and content diagnostics to develop meaningful labels for each topic (Blei & Lafferty, 2007; Roberts et al., 2014). What is important to note is that the topic is produced by a machine learning algorithm, which may or may not be easily interpretable by a human reader. The actual label for the topic is for the reader's convenience and exposition purposes.

Identifying Thematic Words

To better understand the content of each topic, the findTopic() function was used to search for key terms of theoretical interest within the fitted model. Specifically, we focused on terms identified as salient in the literature review from Chapter 2. The

literature review revealed that carriers convert to stock companies due to constraints on capital, therefore, we searched for terms, such as growth, capital, and surplus—terms that appear frequently in discourse around mutual-to-stock conversions, capitalization strategies, and surplus management (Harrington & Niehaus, 2002; Jeng et al., 2007; Viswanathan & Cummins, 2003). For each term, findTopic() retrieved up to 50 words most closely associated with the same topic, using multiple scoring methods:

- Probability: The overall likelihood of the word appearing within each topic.
- FREX: A hybrid measure balancing word frequency within a topic and word exclusivity to that topic (Roberts et al., 2014). Thus, words with a high FREX score are likely to be topic specific.
- Lift: The ratio of a word's frequency in the topic to its frequency across the entire corpus. A high lift ratio implies that a word's presence over its absence makes the model fit better.
- Score: A weighted combination of these measures.

This step linked the quantitative topic modeling output back to the substantive financial and regulatory themes that motivated the research, ensuring theoretical alignment.

Topic Interpretation

The word clouds for each of the six topics are presented in Figure 14, displaying the top fifty words most strongly associated with each topic. In these visualizations, larger font sizes indicate a higher probability of a word occurring within the topic. Word clouds provide an accessible way to summarize the general content of each topic and assist in forming preliminary interpretations of their thematic focus. To support a more

precise understanding of each topic, Table 9 presents the top terms based on the frequency-exclusivity (FREX) metric. FREX combines a word's frequency within a topic and its exclusivity to that topic relative to others. This helps highlight terms that are both common within a topic and distinctive across the entire model, aiding in clearer topic differentiation and labeling.

Figure 15 presents a bar chart illustrating the relative prevalence of each topic identified through Structural Topic Modeling. This visualization displays the proportion of the corpus dedicated to each topic, highlighting the most dominant themes across the dataset. As shown, Topic 3 is the most prevalent, comprising over 30% of the content, followed by Topic 1 and Topic 4, which also account for significant portions of the text. In contrast, Topics 5, 2, and 6 represent more specialized or less frequently discussed themes. By emphasizing the proportional weight of each topic, this chart helps guide interpretation and prioritization—focusing attention first on those topics that shape the overall discourse most strongly. The topics themselves were initially derived using Perplexity AI, which enabled automated extraction of recurring patterns across the corpus. This process provided a scalable and systematic foundation for the STM model, enhancing the objectivity and comprehensiveness of topic discovery. The topic interpretations based on these results are outlined below.

The first topic focused on insurance company restructuring and policy management, capturing how operational and strategic changes are communicated during conversions. High-frequency words, such as casualty, structure, retailers, policyholders, companies, and conversion indicate the centrality of product coverage, organizational restructuring, and communication with policyholders and agents during the transition.

The FREX words, which emphasize more distinctive content, such as retailers, reorganizes, converts, and coverage, reinforce the importance of how the conversion process is operationalized across distribution channels, product lines, and internal workflows. This topic highlights the practical side of demutualization—how companies reassure stakeholders that coverage will continue seamlessly and that agents will remain actively engaged. These operational concerns are well-documented in the literature on mutual conversions, where continuity of service and clear communication to both policyholders and distribution partners are considered essential to preserving trust during structural transitions (Viswanathan & Cummins, 2003).

The second topic centers on corporate governance and policyholder rights in reorganization, emphasizing the procedural and legal mechanisms that govern mutual-to-stock conversions. High-probability terms, such as group, stock, plan, eligible, reorganization, directors, and meeting clearly reflect the importance of formal governance processes, including policyholder eligibility to vote, board meetings, and director oversight. FREX words, such as restated, eligible, special, tax, articles, and incorporation indicate that this topic also captures the technical legal changes embedded in revised corporate charters and bylaws. This topic reflects the negotiation of governance rights during conversion—a tension between management’s strategic flexibility and policyholders’ historical governance rights, consistent with research emphasizing the unique governance dynamics of mutual companies (Lamm-Tennant & Starks, 1993).

The third topic focuses directly on the conversion process itself and its regulatory approval, emphasizing the role of policyholders and regulators in approving conversions. High-probability words, such as conversion, policyholders, plan, stock, new, structure,

and companies capture the formal procedural focus of this topic. Meanwhile, FREX terms, such as approve, percent, post, and convert highlight the step-by-step process of gaining approval—including policyholder voting thresholds, regulatory sign-off, and post-conversion structural adjustments. This topic exemplifies the procedural formalism required to ensure regulatory compliance and policyholder protection, which has been a central theme in the demutualization literature for decades (Viswanathan & Cummins, 2003). The repeated emphasis on approval thresholds reflects the legally required supermajority votes in many states, underscoring the importance of regulatory legitimacy in the conversion process.

The fourth topic shifts focus to financial ratings and ownership changes, emphasizing the financial market's response to conversion events. High-probability terms, such as financial, stock, ratings, policyholders, plan, conversion, and companies indicate the importance of how these transactions are evaluated by external financial stakeholders. The FREX words—ratings, associate, editor, rating, credit, and financial—further emphasize the interaction between converted companies and rating agencies. This reflects past literature showing that changes in capital structure and ownership directly influence financial strength ratings, which in turn affect market confidence, borrowing costs, and competitive positioning (Harrington & Niehaus, 2002). In the context of conversion, securing favorable ratings is essential not only for market credibility, but also for maintaining policyholder trust, particularly for long-tail lines of insurance where future claim payments depend on continued financial stability.

The fifth topic focuses on corporate governance and regulatory filings in the context of mergers and conversions, reflecting the procedural and documentary

requirements insurers must fulfill when altering their ownership structure. High-probability words, such as insurer, applicant, securities, item, person, voting, and financial point to formal filing processes with regulators and securities agencies. FREX terms, such as applicant, vice-president, chart, and nature indicate that this topic captures the organizational roles and formal documentation submitted during regulatory review. This reinforces the procedural burdens identified in past research, where corporate control transactions—including conversions and mergers—require extensive documentation to comply with state insurance department oversight and federal securities laws (Lee et al., 1997). The presence of senior executive titles among the FREX words further suggests that these filings often include executive certifications and attestations of compliance.

Finally, the sixth topic focuses on the legal and regulatory framework that governs reorganization, highlighting statutory provisions and legal tests applied during conversions. High-probability words, such as stock, reorganization, membership, interests, plan, insurer, and reorganized indicate the legal classification and regulatory framing of conversion events. The FREX terms—chapter, 13a, 33-13a-3, test, and automatically—reveal the importance of specific legal statutes and regulatory interpretations, such as tests for whether policyholder rights constitute securities under federal law. This topic underscores the legal infrastructure that shapes conversions, from state insurance codes to federal securities regulations. As documented in Mayers and Smith (1986), the legal treatment of policyholder rights as either ownership interests or contractual claims has significant implications for regulatory jurisdiction and required disclosures.

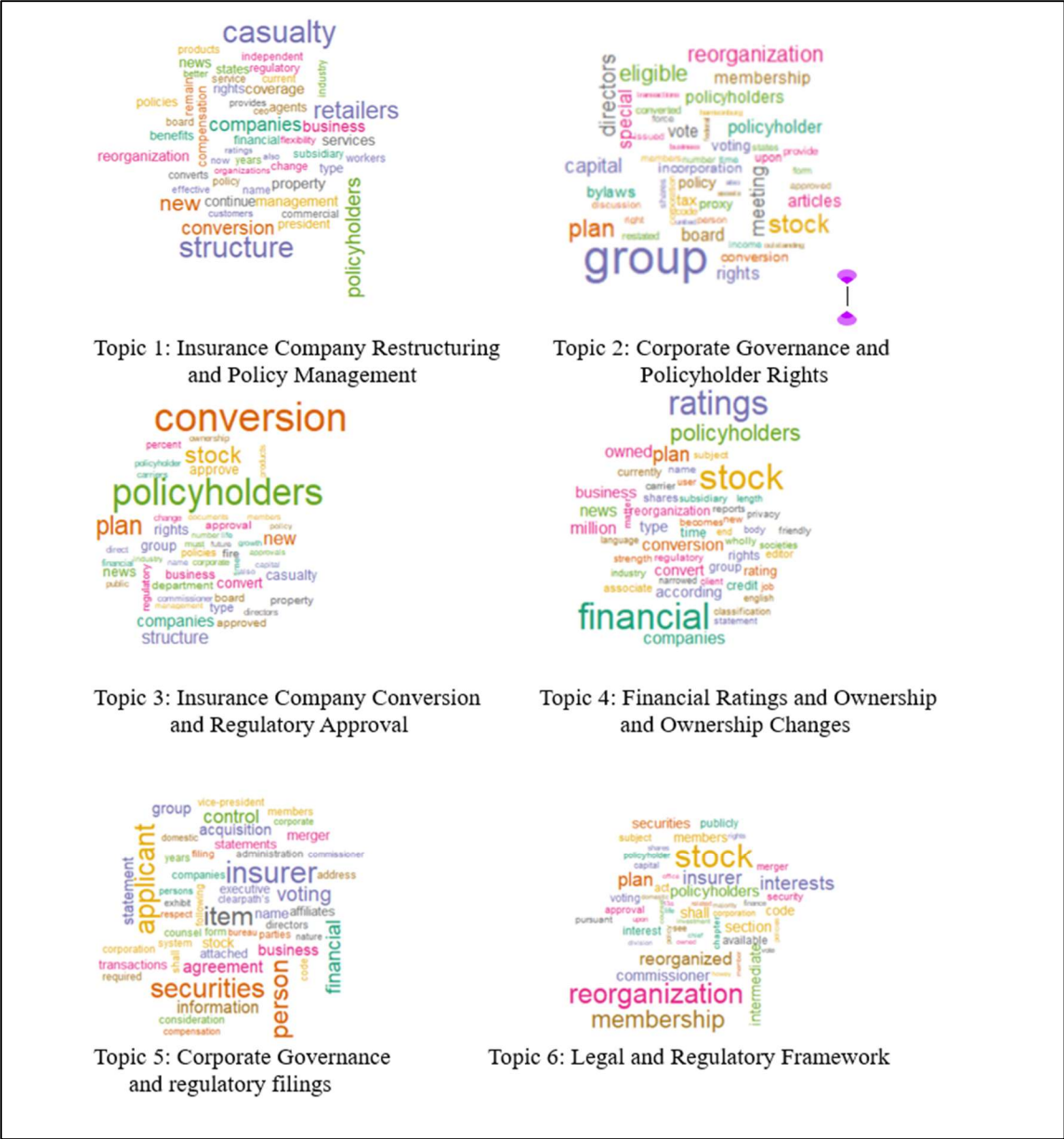


Figure 14. Word Clouds for Each Topic

Table 9*Topics Based on Frequency-Exclusivity (FREX)*

Topic Number	Proposed Topic Name	Top Words
1	Restructuring and Policy Management	Casualty, structure, retailers, new policyholders, companies
2	Corporate Governance and Policyholder Rights	Group, stock, plan, eligible, reorganization, directors, meeting
3	Insurance Company Conversions and Regulatory Approval	Conversion, policyholders, plan, stock, new, structure, companies
4	Financial Ratings and Ownership Changes	Financial, stock, ratings, policyholders plan, conversion, company
5	Corporate Governance and Regulatory Filings	Insurer, applicant, securities item, person, voting, financial
6	Legal and Regulatory Framework	Stock, reorganization, membership interests, plan, insurer, reorganization

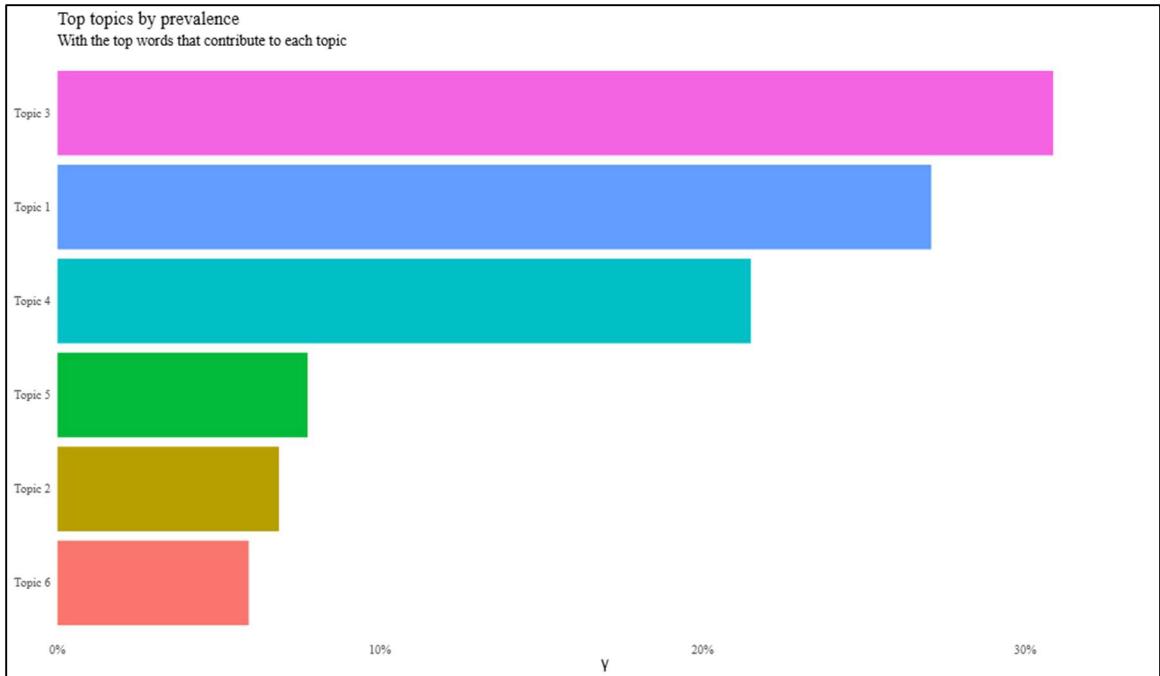


Figure 15. Topics by Prevalence Chart

One of the unique abilities of the STM compared to the LDA model is the ability to utilize metadata to further determine whether any external influences drove topics to be more relevant in certain time periods. As discussed, items, such as the year of conversion, the attorney and the state of the conversion were utilized. What was found was that some correlations with certain topics based on the approval dates of the conversions.

Table 10*Topic 4 Financial Rating and Ownership Changes Regression Analysis*

Variable	Estimate	Standard Error	<i>t</i> value	<i>p</i> value	Significance
(intercept)	3.648	1.060	3.441	0.005	**
2001	-0.796	0.423	-1.880	0.086	.
2003	-0.698	0.504	-1.385	0.193	
2009	-0.292	0.431	-0.679	0.511	
2010	0.382	0.629	0.608	0.555	
2013	-0.886	0.492	-1.800	0.099	.
2015	0.005	0.558	0.010	0.991	
2017	-0.822	0.395	-2.080	0.061	.
2019	-0.553	0.465	-1.189	0.259	
2020	-0.152	0.409	-0.373	0.716	
2021	-0.698	0.419	-1.665	0.124	
2023	-0.997	0.422	-2.358	0.037	*
2024	0.117	0.452	0.260	0.799	
2025	-0.924	0.417	-2.216	0.048	*
Log of Document Length	-0.625	0.349	-1.789	0.101	
Log of Document Sentences	0.214	0.347	0.619	0.548	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Topic 4 focuses on financial ratings and ownership changes, capturing language related to how demutualization may affect insurers' financial standing, the role of ratings agencies, and the transition from policyholder to stockholder ownership. The intercept coefficient (Estimate = 3.65, $p = 0.055$) reflects the baseline prevalence of this topic in documents approved in the year 2000—the earliest approval year in the dataset. This relatively high baseline likely reflects the emphasis placed on financial rationales in early mutual holding company (MHC) conversions, when firms often cited access to capital markets and potential credit rating improvements as key motivations (Viswanathan & Cummins, 2003). In the absence of well-established regulatory guidance or precedent,

early conversions appeared to rely more heavily on financial arguments to frame demutualization as a strategic response to market conditions.

Several year-specific coefficients are negative, indicating that the emphasis on financial ratings and ownership changes declined in some later years, though not all of these effects reach conventional levels of statistical significance. For instance, in 2001 and 2013, the topic appears to have been less prevalent compared to 2000, with marginal p -values of 0.086 and 0.099, respectively. More recent years such as 2023 ($p = 0.037$) and 2025 ($p = 0.048$) show statistically significant declines, suggesting a possible trend away from financial justifications in more recent MHC filings. While these findings should be interpreted with caution, they may reflect a shift in rhetorical emphasis as conversions became more routine and familiar to regulators and policyholders. As the process became institutionalized, firms may have placed greater focus on procedural compliance, growth strategies, and governance—topics less reliant on financial justification.

The regression also included controls for log-transformed document length and sentence count, to account for potential confounding effects related to document complexity. The coefficient for document length (-0.63 , $p = 0.101$) suggests a potential negative relationship between document length and emphasis on financial ratings and ownership changes, though the result falls just short of conventional significance thresholds. One possible interpretation is that longer documents, which often address a broader set of issues, may dilute the relative prominence of financial themes. Conversely, shorter documents—potentially targeted at financial regulators or rating agencies—may focus more explicitly on financial arguments. Sentence count was not significantly

associated with topic prevalence ($p = 0.548$), suggesting that verbosity alone does not meaningfully influence how much attention is given to financial themes.

These findings offer suggestive evidence that the rhetorical framing of demutualization may have evolved over time, with early documents emphasizing financial justification more prominently than later ones. However, given the modest effect sizes and marginal significance levels in several years, these patterns should be viewed as exploratory rather than definitive.

Table 11

Topic 5 Corporate Governance and Regulatory Filings

Variable	Estimate	Standard Error	<i>t</i> value	<i>p</i> value	Significance
(intercept)	0.120	0.678	0.178	0.861	
2001	0.055	0.252	0.220	0.830	
2003	0.069	0.305	0.226	0.825	
2009	0.026	0.251	0.107	0.916	
2010	-0.092	0.397	-0.234	0.819	
2013	0.094	0.299	0.315	0.758	
2015	0.865	0.370	2.338	0.039	*
2017	0.054	0.227	0.112	0.913	
2019	0.042	0.249	0.171	0.867	
2020	0.031	0.233	0.137	0.893	
2021	0.202	0.257	0.789	0.447	
2023	0.137	0.259	0.530	0.606	
2024	-0.034	0.265	-0.129	0.899	
2025	0.010	0.241	0.044	0.965	
Log of Document Length	-0.124	0.229	-0.543	0.598	
Log of Document Sentences	0.179	0.238	0.754	0.466	

Note. * $p < 0.1$; ** $p < .05$; *** $p < .01$

Topic 5 captures language related to corporate governance and regulatory filings within the context of insurance company mergers and conversions. The intercept

coefficient (Estimate = 0.12, $p = 0.86$) represents the baseline prevalence of this topic in documents approved in the year 2000. The lack of statistical significance suggests that governance-related themes were not especially prominent in the earliest conversion filings, at least not in a way that clearly differentiated them from other types of discourse. This stands in contrast to Topic 4 (Financial Ratings and Ownership Changes), which had a more pronounced baseline prevalence, potentially indicating that early conversion documents emphasized financial justifications more heavily than procedural or governance issues.

Across most approval years, the year-specific coefficients for Topic 5 are small and not statistically significant, implying that the prevalence of governance and regulatory filing discussions has generally remained stable over time. A notable exception is the year 2015, which shows a positive and statistically significant coefficient (Estimate = 0.87, $p = 0.039$). This finding suggests that conversion documents from 2015 placed greater emphasis on topics such as board structure, voting procedures, and regulatory transparency, relative to the baseline year. This increase in governance-related content may reflect broader regulatory developments during that period. For example, the NAIC Corporate Governance Annual Disclosure Model Act—adopted in 2014 and implemented by many states starting in 2015—required insurers to provide more detailed reporting on board oversight, risk management, and internal controls (NAIC, 2023b). This regulatory shift coincided with a period of heightened M&A activity and mutual-to-stock conversions, potentially prompting companies to devote more attention to governance frameworks in their conversion communications. Additionally, evolving expectations

from regulators, rating agencies, and investors likely contributed to a greater emphasis on transparency and procedural compliance in corporate transactions.

Outside of 2015, there is little evidence of a clear temporal trend in the prevalence of this topic. This pattern suggests that governance and regulatory concerns have remained consistent, though not necessarily fluctuating, feature of conversion discourse. Unlike financial topics, which appear to have declined in prominence over time, governance-related themes may represent a more enduring component of these documents—reflecting the foundational role of regulatory compliance in corporate restructuring (Jeng et al., 2007).

The regression also included controls for log-transformed document length and sentence count. The coefficient for document length was negative but not statistically significant (Estimate = -0.12, $p = 0.60$), suggesting no meaningful relationship between overall document size and the emphasis on governance issues. Similarly, the coefficient for sentence count was positive but nonsignificant (Estimate = 0.18, $p = 0.47$), indicating that longer or more verbose documents do not systematically place greater emphasis on governance and regulatory filings. These results suggest that attention to governance topics is relatively stable, regardless of document length or complexity.

Table 12*Topic 6 Legal and Regulatory Framework Regression Analysis*

Variable	Estimate	Standard Error	<i>t</i> value	<i>p</i> value	Significance
(intercept)	0.139	0.368	0.378	0.712	
2001	0.221	0.193	1.149	0.275	
2003	0.036	0.148	0.248	0.808	
2009	0.014	0.124	0.120	0.906	
2010	0.947	0.214	4.428	0.001	**
2013	0.066	0.158	0.420	0.682	
2015	-0.022	0.188	-0.121	0.906	
2017	0.053	0.139	0.386	0.707	
2019	0.035	0.130	0.271	0.791	
2020	0.025	0.118	0.214	0.834	
2021	0.007	0.115	0.064	0.950	
2023	0.018	0.117	0.161	0.875	
2024	-0.006	0.133	-0.049	0.961	
2025	0.004	0.122	0.035	0.973	
Log of Document Length	-0.094	0.135	-0.702	0.497	
Log of Document Sentences	0.120	0.143	0.839	0.419	

Note. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Topic 6 captures language related to the legal and regulatory framework governing mutual insurance company conversions, including references to statutory provisions, regulatory approvals, and policyholder rights. The intercept coefficient (Estimate = 0.14, $p = 0.71$) represents the baseline prevalence of this topic in documents from the year 2000. The lack of statistical significance suggests that legal and regulatory content was not particularly emphasized in the earliest filings, but rather formed part of a broader set of concerns. This aligns with prior research noting that early conversion narratives tended to focus more heavily on financial rationales and policyholder communications, with legal material often embedded within discussions of governance or procedural compliance (Viswanathan & Cummins, 2003).

Among the approval years, 2010 stands out as the only year with a statistically significant coefficient (Estimate = 0.95, $p = 0.001$), indicating a marked increase in attention to legal and regulatory issues in that year's conversion filings. This result likely reflects broader changes in the regulatory environment following the 2008 financial crisis. During this period, both financial and insurance regulators heightened their expectations around disclosure, risk oversight, and statutory compliance (Cummins & Weiss, 2010). For mutual insurers pursuing conversion, this translated into more detailed documentation of the legal basis for conversion, clearer articulation of policyholder rights, and increased scrutiny of procedural adherence. The spike in 2010 may also reflect an industry-wide response to regulatory uncertainty, where firms proactively emphasized their compliance with applicable laws to strengthen the credibility and defensibility of their conversion proposals.

Outside of 2010, coefficients for other years are small and statistically nonsignificant, indicating no strong evidence of year-to-year variation in this topic's prevalence. This relative stability may reflect the institutional nature of legal and regulatory frameworks, which establish the formal boundaries within which all conversions must operate (Meyer & Rowan, 1977). Because statutory compliance is a mandatory component of the conversion process, companies may have limited discretion in choosing how much attention to devote to legal matters. Regardless of shifting external conditions, conversion filings are expected to demonstrate adherence to legal requirements, provide adequate disclosure of policyholder rights, and document formal regulatory approvals. Thus, while the salience of legal content may fluctuate modestly in

response to events like the financial crisis, its overall presence remains a constant feature in discussion.

The regression also included controls for log-transformed document length and sentence count. Neither variable showed a statistically significant relationship with the prevalence of legal and regulatory framework content (length: Estimate = -0.09, $p = 0.50$; sentence count: Estimate = 0.12, $p = 0.42$). These results suggest that legal content occupies a relatively fixed portion of conversion filings, regardless of document complexity or verbosity. This supports the interpretation that legal and regulatory disclosures are not strategically expanded or reduced based on document size but instead reflect standard procedural requirements that must be addressed in all filings.

While there is some evidence that timing of the conversion may be related to a topics prevalence, the results are generally weak. This is confirmed by examining different timing periods. For example, we looked at 5 year periods to see if collapsing the years into longer periods made any difference. The results are similar and show little evidence that timing was related to the prevalence of the topics discussion.

Conclusion

The mutual insurance sector has long stood as a pillar of financial stability and policyholder-centric governance, yet it faces increasing pressure to adapt to a rapidly changing industry landscape. This dissertation involved examining the transition of mutual insurers to the MHC structure, assessing whether this conversion is a viable alternative to traditional demutualization while preserving the core values of mutuality. By analyzing financial performance indicators before and after conversion, this study has

provided a data-driven evaluation of the motivations, economic implications, and strategic outcomes associated with this organizational shift.

The findings of this research suggest that the decision to transition to an MHC structure is often influenced by economic performance pressures, regulatory considerations, and strategic positioning within the insurance market. The quantitative analysis indicates that insurers experiencing capital constraints and competitive disadvantages are more likely to pursue conversion. The adoption of an MHC structure allows mutual insurers gain access to capital markets and excess capital within their carrier, while maintaining policyholder ownership at a governance level. This creates a hybrid model that attempts to balance financial flexibility with mutual principles. The DiD methodology employed in this study provides evidence that insurers converting to MHCs experience changes in key financial metrics, such as surplus growth, operating profitability, and policyholder dividends, relative to their purely mutual counterparts. These results contribute to augmenting the body of pre-existing literature examining structural evolution within the insurance industry and highlight the potential benefits and trade-offs associated with mutual insurers seeking increased financial flexibility.

Limitations and Constraints

Although this research includes meaningful contributions to understanding the MHC model within the mutual insurance space, several limitations should be acknowledged. The relatively small sample size of converted insurers limits the ability to generalize findings across the entire industry. Although an econometric technique was utilized to isolate the effects of conversion, other external factors, such as macroeconomic conditions, catastrophic loss events, and evolving consumer expectations

may also influence conversion decisions and financial outcomes that cannot necessarily be quantified. The study primarily involved examining the short- to mid-term financial performance of insurers following their conversion to an MHC structure, excluding more recent conversions to ensure meaningful post-conversion analysis. However, this approach raises questions regarding the long-term sustainability of the MHC model and whether it functions as an intermediate step toward full demutualization or serves as a viable alternative that eliminates the need for complete structural conversion.

Future Research

Future researchers should extend the time horizon of analysis to capture the long-term financial and strategic implications of MHC adoption as more recent conversions age further out from their transition. Additionally, incorporating qualitative methodologies, such as interviews with executives and industry stakeholders, could provide deeper insights into the decision-making processes behind conversion and the governance dynamics that shape post-conversion operations.

Additional opportunities lie in broadening the scope of analysis beyond property and casualty insurers to include life insurers that have adopted the MHC structure both domestically and abroad. Expanding the sample size to encompass both sectors would allow a more comprehensive evaluation of how the MHC model performs across different lines of business. Moreover, this study focused exclusively on comparing MHCs to their mutual counterparts, leaving open the question of how MHCs perform relative to insurers that have undergone full demutualization. A comparative analysis between MHCs and fully demutualized insurers could yield valuable insights into whether the

hybrid structure successfully balances policyholder governance with capital access or merely serves as a transitional phase toward stock company conversion.

Final Thoughts and Contributions

The MHC model represents a significant evolution in the mutual insurance industry, offering insurers a mechanism to balance flexibility with policyholder ownership. Though historically met with skepticism, the increasing adoption of MHC structures highlights their strategic value as a tool for growth, financial stability, and long-term competitiveness in an evolving market. As regulatory pressures, capital demands, and competitive forces continue to shape the insurance landscape, MHCs provide a pathway for mutual insurers to battle these headwinds to protect their historical roots. This model enables greater adaptability, positioning mutual insurers to navigate economic uncertainties while maintaining their core policyholder-centric philosophy and staying true to their ‘why.’ This research provides a powerful tool to educate and arm industry leaders and mutual communities with optionality as they seek to navigate the constantly changing dynamics.

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APPENDIX A: DEFENSE LETTER



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To: Alexis Muench
From: Maureen DeLio, Administrative Coordinator
Date: March 18, 2025

This is to confirm Graduate School receipt of **Alexis Nichol Muench's** announcement of his/her defense scheduled for **3/26/2025**.

The student must upload the dissertation and submit the required documents in the Final Checklist on page 20 of the Dissertation & Thesis Handbook:

<https://grad.temple.edu/resources/dissertation-thesis-handbook>.

In order to avoid a second defense, the Graduate School must have **Alexis Muench's** dissertation no later than:

04/26/2025

Submission by the 30-day date does NOT ensure graduation. There is a deadline that may be sooner than 30 days from this defense, which must be met to be considered for a particular diploma date.

If the committee adjourns the oral examination prior to conclusion, please notify me that same day. Also, be aware that you have to announce a reconvened defense at least ten working days in advance, just as you do an initial defense.

If you have any questions regarding these policies, contact me at extension 1-6578 or by email at maureen.delio@temple.edu. Thank you.