



# The Bermuda Insurance Market

## *An Economic Analysis*

By

*J. David Cummins*

The Wharton School

University of Pennsylvania

and

The Fox School

Temple University

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# **The Bermuda Insurance Market: An Economic Analysis**

## **Executive Summary**

This report provides an economic review and statistical analysis of the Bermuda insurance market. The report begins with a brief history of the Bermuda market to set the stage for the subsequent discussions. The discussion then turns to the Bermuda regulatory and tax systems and their effects on company formation in Bermuda. The advantages of Bermuda as an insurance domicile are then outlined. The statistical analysis provides an overview of the structure of the Bermuda market in terms of the number, type, and size of firms. The role of Bermuda insurers in the global reinsurance market and Bermuda's role as a supplier of U.S. reinsurance are discussed and analyzed. The report also traces the history of new capital issuance and new company formation in the Bermuda market and analyzes the stock price performance of publicly traded Bermuda firms and the stock price response of Bermudian, European, and U.S. firms to the 2004 and 2005 hurricane seasons. The report also provides some information on the economic efficiency of insurers and reinsurers by jurisdiction.

The Bermuda market began in 1947 when C.V. Starr chose Bermuda as the headquarters for his American International Company. Insurance development accelerated during the 1960s with the introduction of an innovative risk financing solution for corporations – the captive insurance company. By 1980, Bermuda was by far the world's leading captive domicile and was primarily known for fulfilling this role. However, beginning in the mid-1980s, Bermuda began to play a broader role in the world's insurance and reinsurance markets. The first important wave of Bermuda non-captive insurance company formations began with the formation of ACE and XL in response to the mid-1980s commercial liability insurance crisis in the United States. The ACE-XL model established a pattern in the development of the Bermuda market that continues to the present day.

Bermuda provides many advantages as an insurance domicile. Bermuda has developed a regulatory system which involves a high degree of cooperation between insurance companies and regulators and also involves lower regulatory burden in comparison with traditional jurisdictions such as the U.S. and the U.K. Because of this cooperative regulatory approach, new companies can be formed in a matter of a few weeks in Bermuda, encountering much less regulatory bureaucracy and red-tape than in other jurisdictions. The regulatory approach does not appear to have come at the cost of higher insolvency risk, as the Bermuda market continues to be populated by companies with superior financial strength and stability. Bermuda also provides a relatively attractive tax environment for insurers, in that it levies no income tax. Because of the regulatory and tax flexibility, Bermuda has become the jurisdiction of choice, especially for reinsurers responding to changing demands for reinsurance from primary jurisdictions such as the U.S.

Bermuda also has numerous other advantages as an insurance domicile. It is politically stable and has a sound monetary system and a high sovereign debt rating. Bermuda also has a highly educated work-force and provides a pleasant place to live and work. The island also benefits from "economies of agglomeration" in insurance and reinsurance not only because of the concentration of captive insurers, non-captive insurers, and reinsurers but also because of the

professional infrastructure that has been developed in Bermuda over the years. Within approximately a one square mile area of Hamilton one finds world class bankers, lawyers, accountants, actuaries, and risk management professionals. Bermuda's proximity to the New York capital markets and the island's close ties with the United Kingdom also provide key advantages to insurers and reinsurers.

Bermuda has become one of the world's top three jurisdictions in the global reinsurance market, along with the U.S. and Europe, and Bermuda's importance in this regard has accelerated during the past few years. Twelve Bermuda reinsurers appear in the list of the top 40 reinsurers worldwide, the largest number from any jurisdiction. Bermuda is the leading non-U.S. supplier of reinsurance to U.S. insurers, providing a critically important source of risk capital for the U.S. market. This report analyzes the leading U.S. insurers in terms of reinsurance ceded to non-U.S. reinsurers. The results show that Bermuda is the number one jurisdiction worldwide for cessions by the top U.S. firms in all twelve lines of business included in the study. Thus, Bermuda has gone far beyond its initial role during the 1980s and early-1990s as a source of risk capital for liability insurance and property catastrophes to provide broad-based coverage in many lines of insurance.

New capital continues to flow into Bermuda on a regular basis, especially in response to large loss events in the U.S. The amount of capital raised in response to the 2005 hurricane season surpassed the previous record amounts obtained following Hurricane Andrew and the September 11, 2001 terrorist attacks. Bermuda continues to be a source of innovation in raising new capital, with new vehicles such as sidecars and collateralized reinsurance structures providing attractive alternatives to public and private equity issuance. The Bermuda market has matured and developed over the years and is now much more efficient and effective at providing new risk capital than at any time in the past. In addition, Bermuda insurers and reinsurers have greatly improved their risk and exposure management techniques as well as their ability to price their products by introducing new quantitative modeling approaches. Thus, the market continues to improve its efficiency and ability to respond to new and emerging risks.

Bermuda firms have funded a substantial proportion of the catastrophe losses to U.S. properties resulting from recent natural and man-made events. Bermuda reinsurers have developed a risk appetite for the "large loss tail" of the catastrophic loss distribution, with the result that Bermuda firms sustained substantial losses from the 2004-2005 hurricane seasons. Thus, Bermuda firms play a critical role in financing losses from U.S. catastrophes, as well as providing coverage for many other types of events worldwide. Bermuda has also expanded to provide reinsurance coverage for the other major jurisdictions worldwide and also provides a domiciliary jurisdiction for firms from Continental Europe, the U.K., Asia, South America, and Africa. Thus, Bermuda has evolved from primarily a domiciliary jurisdiction for captives (pre-1980s), to a reinsurance market primarily for liability insurance and property catastrophe reinsurance (1980s and early 1990s), to a world leader in taking on all types of insurable risks (mid-1990s to the present day).

## 1. Introduction

The Bermuda insurance market came into existence primarily to meet the insurance and reinsurance needs of the United States. The insurance regulatory system in the U.S. is extremely cumbersome and inflexible, being operated by fifty-one separate jurisdictions; and relationships between companies and regulators are often conducted on an adversarial basis. By contrast, Bermuda has developed a regulatory system which involves a high degree of cooperation between insurance companies and regulators and involves lower regulatory burden in comparison with jurisdictions such as the U.S. and the U.K. (Standard & Poor's 2006, p. 59). As a result, forming new insurance companies in Bermuda can be done promptly and with very low administrative costs, again in contrast to traditional jurisdictions such as the U.S. and the U.K. where company formation is bureaucratic, costly, and time consuming.<sup>1</sup> Moreover, Bermuda also has a business-friendly tax regime in that it does not impose an income tax.<sup>2</sup> Bermuda also offers political and monetary stability, a highly educated workforce, and an outstanding infrastructure of intellectual capital in all of the major disciplines required to operate an insurance enterprise. Considering all of these factors, as well as Bermuda's geographical proximity to the U.S., it should not be surprising that Bermuda increasingly tends to be the focal point for the formation of new insurers, the issuance of new risk capital, and innovative solutions to risk financing problems.

The Bermuda market began in 1947 when C.V. Starr chose Bermuda as the headquarters

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<sup>1</sup> There is no evidence that the flexibility of the Bermuda regulatory system provides evidence of lax regulation, as Bermuda companies have developed a reputation for financial stability.

<sup>2</sup> Bermuda's taxation system is "consumption based" meaning that the prices of goods and services available on the Island include import duty taxes. Import duties range from 4 percent to as high as 150 percent depending on the type of good. For example, the duty on passenger cars is 75 percent for the first \$12,000 of value and 150% for the remainder of value. See Bermuda, Ministry of Finance, Customs Department (2007). There are no taxes on profits, dividends or income for companies or individuals, nor are there any capital gains or inheritance taxes. There is a payroll tax of 13.5 percent, of which the employer is entitled to recover up to 4.75 percent of the 13.5 percent tax from each employee. For further information see KPMG (2005) and Standard & Poor's (2002b). For further discussion of tax competition among jurisdictions see Bernauer and Styrsky (2004), who discuss the tax advantages of Bermuda for corporations.

for his American International Company. Insurance development accelerated during the 1960s with the introduction of an innovative risk financing solution for corporations – the captive insurance company. The original captives were single-parent captives, which insured the risks only of their parent corporations, but the captive movement soon branched out to multiple-parent captives; and today there are several types of captives serving various business needs. By 1980, Bermuda was the world’s number one jurisdiction for captive insurance companies.

The next wave of insurer formation in Bermuda, driven by the mid-1980s liability crisis in the U.S., led to the formation of ACE and XL in 1985 and 1986, respectively, to increase the supply of excess liability insurance. Of course, these insurers have since expanded their operations to provide a wide variety of insurance coverage. Another major wave of company formations in Bermuda occurred in late 1992 and early 1993, in response to capacity shortages for property catastrophe reinsurance following Hurricane Andrew. Two additional waves of new companies and capital occurred following the September 11, 2001 terrorist attacks and the devastating hurricane season of 2005. In addition to these “hot” periods, Bermuda insurers also were formed throughout the 1990s and 2000s to meet other coverage needs in the U.S. and elsewhere. Therefore, although several of the major waves of company formations were driven by needs for specific types of coverage, virtually any type of commercial insurance and reinsurance can now be obtained in the Bermuda market.

In each successive wave of company formation, substantially more start-up capital was raised than in the preceding wave. Moreover, existing Bermuda insurers also raised new capital to add to underwriting capacity and strengthen their balance sheets. The Bermuda insurance regulatory system and the proximity to the New York capital markets are important factors facilitating capital formation in Bermuda. Of course, the timing of capital formation is driven by market and exogenous factors such as the insurance underwriting cycle and the incidence of

major catastrophes.

Although the Bermuda company market began by specializing in excess reinsurance for liability and property catastrophe risks, today the product offerings by Bermuda insurers are very broad, and virtually any type of commercial insurance and reinsurance can be obtained in the market. Bermuda companies have been leaders in the development of structured reinsurance solutions such as multiple year, multiple coverage policies and finite risk reinsurance.<sup>3</sup> Bermuda companies now offer financial guarantee reinsurance, workers' compensation reinsurance, medical professional liability insurance, directors and officers liability insurance, employment practices liability reinsurance, and reinsurance for life insurance and annuity products. The Bermuda insurance market can write every facet of healthcare professional liability insurance – physicians, long-term, assisted living, home health care, and hospitals (Sousa, 2005). Bermuda has taken its place as one of the world's three leading reinsurance markets, along with the U.S. and Europe (including the U.K.).

The objective of this report is to provide a review and statistical analysis of the Bermuda insurance market. The report begins with a brief history of the Bermuda market to set the stage for the subsequent discussions. The discussion then turns to the Bermuda regulatory and tax systems and their effects on company formation in Bermuda. The advantages of Bermuda as an insurance domicile are then outlined.

The statistical analysis begins with an overview of the structure of the Bermuda market in terms of the number, type, and size of firms. The role of Bermuda insurers in the global reinsurance market is then discussed. Next, Bermuda's role as a supplier of U.S. reinsurance is discussed, and Bermuda is shown to be the leading non-U.S. jurisdiction in terms of reinsurance supply. The next section traces the history of new capital issuance and new company formation

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<sup>3</sup> For further discussion of structured reinsurance, see Malloy (2005) and Cummins (2005).

in the Bermuda market. The report then turns to an analysis of the stock price performance of publicly traded Bermuda firms and a study of the stock price response of Bermudian, European, and U.S. firms to the 2004 and 2005 hurricane seasons. The penultimate section provides some information on the economic efficiency of insurers and reinsurers by jurisdiction for the principal insurance centers worldwide, and the final section concludes.

## **2. A Brief History of the Bermuda Insurance Market**

The Bermuda insurance market began in 1947 with the establishment of the American International Company by C.V. Starr. The next major development occurred in the 1960s, when captive insurance companies were first established. Captives were originally conceived as insurance companies that provide insurance coverage to non-insurance parent corporations. The original captives were single-parent captives, which insured only the risks of the parent corporation. However, the concept of the captive in today's market is now much broader. While single-parent captives still exist, many captives have branched out to write insurance for unrelated third-party buyers, and multiple-parent and rent-a-captives have been created to meet the needs, respectively, of industry associations and smaller firms for which it is not cost effective to form free-standing captives. One of the earliest multiple-parent captives was Oil Insurance Ltd. (OIL), which was formed by petroleum companies in 1971 in response to difficulties they faced in the property insurance market. The concept of captive insurance companies, founded in Bermuda, has become highly successful, and more than 5,000 captives presently exist worldwide. Bermuda was for many years the leading jurisdiction for the operation of captive insurance companies. However, as shown below, due to reduced regulatory restrictions, the United States is now the world's leading country in terms of the number of captives, with Bermuda ranking second.

An important regulatory milestone was the passage of the Insurance Act of 1978. The

objective of the act was to create a regulatory framework for the Bermuda insurance industry. The Act created the Insurance Advisory Committee (IAC), which provides a mechanism for regulators to obtain advice from the industry. The IAC includes representatives of business, professional, and Government regulatory agencies. The Act has been amended several times to meet changing market needs. One of the most important revisions was the adoption of the multi-license system in 1995. As explained further below, the multi-license system categorizes general insurance companies into four classes with different levels of regulation and also provides for “long-term” (life insurance), and composite insurers. Another important regulatory development occurred in 2002, when Bermuda insurance regulation was transferred from the Registrar of Companies to the Bermuda Monetary Authority. The objective of the move was to bring Bermuda into conformance with international financial regulatory principles (see KPMG, 2000, and International Monetary Fund, 2005). Bermuda’s insurance regulation is designed to facilitate the creation of companies and products while ensuring that companies operate responsibly within specified margins of solvency.

Until the 1980s, the Bermuda market almost exclusively consisted of captives. The next important stage in the development of the Bermuda market resulted from the U.S. commercial liability insurance crisis of the mid-1980s. During the crisis, the frequency and severity of liability claims increased dramatically, and U.S. insurers incurred substantial underwriting losses. As a result, the supply of liability coverage was reduced and liability insurance prices rose dramatically. To respond to the crises and expanding the supply of liability coverage, ACE was formed in 1985, spearheaded by Marsh & McLennan and financed by 34 U.S. insurance companies. This was followed in 1986 with the formation of XL Capital (originally EXEL). Both ACE and XL initially offered only excess liability insurance, but both have subsequently branched out into many other lines of business. Also in 1986, Corporate Officers and Directors



Assurance (CODA) was formed to provide directors and officers liability insurance. In 1988, Centre Re (now Centre Group Holdings) was formed through the sponsorship of Zurich Insurance Group to provide innovative reinsurance products often called structured reinsurance (see Cummins, 2005, and Malloy, 2005).<sup>4</sup>

The rationale for the formation of these firms in Bermuda rather than the U.S., even though their objective was to provide capacity primarily to the U.S. market, is explained by the regulatory and tax advantages of the Bermuda market, discussed in section 3 of this report. The infrastructure that had developed over the years to service the captive insurance companies in Bermuda also played a role in the selection of Bermuda as a domicile for ACE and XL.

The next wave of company formations in Bermuda followed Hurricane Andrew, which caused major losses for U.S. insurers in 1992. At the time, Andrew was the most costly hurricane in history, causing losses of \$23 billion in 2006 dollars (Swiss Re, 2007). As the result of losses from Andrew and the reassessment by the insurance industry of its exposure to property catastrophes, the market for property catastrophe reinsurance experienced a crisis, with rising prices and restrictions on coverage supply. To restore underwriting capacity for property catastrophes, approximately \$4 billion in new capital flowed into the Bermuda market, with the formation of eight new catastrophe reinsurers in late 1992 and 1993 (see Table 7.5). Generally known as the “Class of 1993,” this group of firms includes Mid-Ocean Re, even though it was formed in 1992. The other members of the Class of 1993 were Centre Cat Ltd., Global Capital Re, IPC Re, LaSalle Re, Partner Re, and Renaissance Re. A ninth member of the class, Compass Re, was formed by SCOR but never activated. There were other insurers and reinsurers formed in Bermuda during this period which either were captives or for other reasons are not generally

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<sup>4</sup> Centre Group Holdings is listed by Zurich as a significant subsidiary. See the following web address: [http://www.zurich.com/main/annualreport2006/html/financial\\_report/significant\\_subsidaries.htm](http://www.zurich.com/main/annualreport2006/html/financial_report/significant_subsidaries.htm).

included in the group of highly capitalized property catastrophe reinsurers known as the Class of 1993. Many of the firms in the Class of 1993 innovated by introducing sophisticated computer modeling techniques for pricing and underwriting catastrophes and other types of risks. As of 2007, all but three member of the Class of 1993 had been acquired by other reinsurers. The firms that remain independent operators are IPC Re, Partner Re, and Renaissance Re.

Innovation continued in Bermuda in the late 1990s with the formation of Arrow Re, sponsored by Goldman Sachs, and Lehman Re, sponsored by Lehman Brothers. The objective of these firms was to facilitate capital market solutions to providing insurance capacity. The development of these firms was motivated by the introduction of innovative risk financing solutions such as catastrophic risk (CAT) bonds and options and other new risk products that blended insurance and capital markets financing. The 1990s also witnessed the formation of several financial guaranty reinsurance companies such as Ram Reinsurance, which provides reinsurance for guarantees of municipal bonds and other securities, as well as the formation of life insurance and annuity reinsurers. Bermuda is also home to a number of subsidiaries of global insurance and reinsurance companies including AIG, Swiss Re, Zurich, Hartford, and Chubb. In 2006, Bermuda also accounted for 7% of Lloyd's of London's aggregate capital base (Lloyd's of London, 2006, p. 12).

The next major wave of company formations in Bermuda was triggered by insured losses from the September 11, 2001 terrorist attacks and the resulting shortages of coverage in several lines of insurance. The 9/11 losses marked another event when insurers paid significant claims, resulting in diminished underwriting capacity. As expected, several Bermuda insurers and reinsurers played a prominent role in funding the 9/11 losses. ACE and XL were among the top fifteen insurers in paying 9/11 losses, and seven of the top fifty insurers paying 9/11 losses were

Bermuda companies (Hartwig, 2002).<sup>5</sup> Following 9/11, capacity was particularly a problem in workers' compensation, where insurers were concerned about future terrorist events and were unable to limit their exposure to workers' compensation terrorist risk due to regulatory restrictions in the U.S. To help restore capacity, at least 10 new Bermuda insurers were formed with total equity capital of about \$8.9 billion. The companies in the Class of 2001 included Allied World Assurance, Arch Capital, Axis Capital Holdings, and Montpelier Reinsurance. Catlin Bermuda Re, formed in 2002, is usually considered part of the Class of 2001. Although capital was also raised in other markets following 9/11, a significant share of the total new capital flowed into Bermuda start-up companies. Several existing Bermuda companies also raised significant amounts of new capital to strengthen their balance sheets and generate additional underwriting capacity.

The most recent wave of capital formation in Bermuda followed the devastation caused by Hurricanes Katrina, Rita, and Wilma in 2005. Eleven new Bermuda reinsurers were formed following the 2005 events, with a total of at least \$8 billion in equity capital. The Class of 2005 included Ariel Re, Harbor Point Re, and Validus Re. In addition, several new "sidecars" were formed, which raised \$4.3 billion in new equity (see Table 7.5). As explained below, sidecars are limited term investment vehicles designed to reinsure specific sponsoring reinsurers.

The ability to form new companies quickly, the ease of raising capital, and innovative risk solutions have become the hallmarks of the Bermuda insurance market. Although the Bermuda market began as a center for captives, it is now recognized as one of the world's three leading insurance markets, along with the U.S. and Europe (including the U.K.). The Bermuda market now provides many different lines of insurance, including the traditional Bermuda lines

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<sup>5</sup>This somewhat understates the role of Bermuda in paying for the terrorist attacks as it does not count payments by Bermuda subsidiaries of firms whose head offices are located in other countries.

such as excess property and liability cover as well as life insurance, health insurance, workers' compensation, medical professional liability, and annuities. Bermuda also continues to be a leader in developing innovative solutions to risk financing problems.<sup>6</sup>

### **3. Regulation, Taxation, and Other Advantages of Bermuda**

Regulation and taxation are major factors in attracting insurers and reinsurers to incorporate and operate in Bermuda. The advantages can be summarized as speedy incorporation, no corporate income tax, and a lower intensity of regulatory oversight than alternative jurisdictions such as the U.S. and the U.K. This section provides a discussion of the regulatory and tax framework in Bermuda.

#### **Insurance Regulation in Bermuda**

Insurers in Bermuda are regulated under the Bermuda Insurance Act of 1978, as amended in 1981, 1983, 1985, 1995, 1998, and 2001 (Bermuda Monetary Authority, 2005). Bermuda insurer's are regulated by the Supervisor of Insurance, which is part of the Bermuda Monetary Authority (BMA), which regulates all financial institutions in Bermuda. The Bermuda regulatory framework has been given generally favorable reviews by international organizations such as the International Monetary Fund (IMF) (2005) and KPMG (2000). Some regulatory reforms introduced following the release of the KPMG and IMF reports have improved the regulatory framework. The reforms included moving the insurance regulatory function from the Ministry of Finance to the BMA. The BMA also responded by issuing Guidance Notes on various insurance regulatory issues and taking steps to fully comply with the Insurance Core Principles adopted by the International Association of Insurance Supervisors in 2003.

Bermuda has a requirement that 60 percent of the equity in companies that do business in Bermuda must be owned by Bermudians. However, companies established in Bermuda for

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<sup>6</sup> For more details on the history of the Bermuda market, see Duffy (2004).

purposes of doing business exclusively outside of Bermuda are exempted from this requirement. Such firms, which include nearly all Bermuda insurance and reinsurance companies are referred to as “exempted companies.” There is no requirement for Bermuda ownership of exempted companies. To qualify as an exempted company, an insurer must be registered under the Companies Act or be incorporated through a Private Act declaring it an exempted company. Private Act incorporations are relatively rare at the present time.

In order to become licensed as an insurer in Bermuda, it is necessary for firms to complete a license application, which is filed with the BMA. License applications are considered for approval by the BMA’s Assessment and Licensing Committee.<sup>7</sup> The license application provides details about the company, including disclosure of its shareholders and the specification of its business plan. The business plan conveys information such as the initial capitalization of the company, names and resumés of its principal managers, the lines of business it intends to write, financial projections, and the name of its auditors. Approval is based on the quality of the business plan, the likelihood that the proposed operation will be financially viable, and the qualifications of the managers. Although the preparation of a high quality business plan does take time, once the application is filed, quick action is taken by the BMA. A company can be up and running within about three to six weeks after filing a business plan with the BMA.

The simplicity of the process is particularly remarkable in comparison with the U.S., where the approval process is quite lengthy and must be conducted separately for each state in which a company plans to do business. The ease of incorporation in Bermuda is a principal factor explaining Bermuda’s attractiveness as a regulatory jurisdiction and also helps to explain why there have been virtually no new reinsurers incorporated in the U.S. during the past twenty

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<sup>7</sup> Prior to May of 2007, license applications were considered by the Insurance Admissions Committee, which was a sub-committee of the statutory Insurance Advisory Committee (IAC) of the BMA.

years. During the 1990s, several U.S. states began to recognize the barriers to entry created by regulatory rules and bureaucracies and liberalized their insurance regulations applicable to captive insurance companies. As a result, the number of captives established in the U.S. has been rising dramatically, as shown further below. However, no such regulatory streamlining has occurred with respect to non-captive insurers or reinsurers such that Bermuda still retains significant regulatory advantages for these types of firms.

The regulatory requirements imposed on insurers are also relatively light in comparisons with jurisdictions such as the U.S. and U.K. An unusual regulatory feature in Bermuda is that regulation is conducted under a multi-license system, whereby every insurer must obtain a Class of License depending upon its size, business plan, and the lines of business it will write. The multi-license system was created through the 1995 amendments to the Insurance Act of 1978 which established four classes of general (property-casualty) insurers and a separate class for long-term (life insurance and annuity) insurers, with differing regulatory requirements (see Bermuda 1995). The objective of the class system is to retain light regulation for firms such as single parent captives, which insure only the risks of the parent corporation, while increasing somewhat the regulatory stringency for firms that write business more broadly. However, even for the most stringently regulated class of companies, which are subject to on-site supervisory review, the level of regulatory burden is lower than in traditional regulatory jurisdictions such as the U.S. or the U.K.

The regulatory requirements by class of insurer are summarized in Table 3.1. As shown in the table, Class 1 insurers consist of single parent captives insuring the risks only of the parent corporation. Class 2 insurers consist of multi-parent captives and single parent captives writing

up to 20% of outside business.<sup>8</sup> Class 3 insurers are defined as insurers and reinsurers not falling into categories 1, 2, or 4. Examples include reinsurers creating structured solutions and single parent, group, or association captives with more than 20% of net premiums written from risks which are unrelated to the business of their owners (Bermuda Insurance Development Council 2007). Class 4 insurers are defined as open market insurers and reinsurers underwriting, for example, direct excess liability insurance and property catastrophe reinsurance. Class 4 insurers and reinsurers have capital exceeding \$100 million. There is also a class for “long-term” insurers,<sup>9</sup> consisting of firms writing life insurance and/or long-term accident and health insurance. Finally, there is a class of “composite” insurers, which includes firms writing property-casualty and long-term insurance. There is migration among classes. E.g., firms that begin as single parent captives may later begin to write more outside business and migrate to class 2 or class 3. There also has been some migration between classes 3 and 4 due to organic growth and/or mergers and acquisitions.

The minimum capital and surplus requirements vary by class of insurer. For Classes 1 through 4, the minimum capital and surplus requirements are \$120,000, \$250,000, \$1 million, and \$100 million, respectively. Bermuda insurers are also required to satisfy minimum solvency margin requirements. The minimum solvency margins for Class 1, 2, 3, and 4 insurers and reinsurers equal the maximum of the minimum capital and surplus requirement, the premium test, or the loss test (Bermuda Insurance Development Council 2007). The solvency margin requirements are shown in Table 3.1. The premium and loss tests are, respectively, defined as percentages of net premiums written and loss and loss expense reserves, with the percentages varying by class of insurer. Insurers other than long-term insurers must satisfy a liquidity ratio

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<sup>8</sup> Outside business is defined as insurance issued for firms or individuals other than the insurer’s parent corporation.

<sup>9</sup> Long-term insurance is the terminology for life insurance that is particular to the U.K. and former Commonwealth countries and territories.

test such that specified categories of assets must exceed 75% of defined liabilities. Licensed insurers are also subject to filing annual regulatory reports with the BMA. For all classes except Class 1, the annual filings include statutory financial statements. However, the amount of information that must be supplied in the statutory statements is much less than the very detailed statutory statements required in the U.S. Publicly traded Bermuda insurers also must meet regulatory requirements in the jurisdiction where their stocks trade, such as U.S. Securities and Exchange Commission regulations.

The Bermuda capitalization and solvency margin requirements represent the traditional ratio-based approach to solvency regulation that until recently was followed in most industrialized nations. However, in the early 1990s, the U.S. moved to a risk-based capital system, whereby capital requirements vary according to quantitative measurements of differences in risk among insurers. A risk-based approach also underlies the Basel II Capital Accord in banking (Basel Committee, 2006) and the Solvency II insurance regulatory system presently under consideration in Europe (International Actuarial Association, 2004). Hence, pressures are growing to move to a risk-based regulatory system in Bermuda, a modernization development that has the potential to improve the capital adequacy of the market.

In response to these and other developments, the Bermuda Monetary Authority (BMA) has recently taken a number of steps to enhance the insurance regulatory framework, with the objective of continuing to build on the effectiveness of Bermuda's regulation of the insurance industry. The BMA's on-site supervisory program for Class 4 companies was expanded in 2006, and the BMA plans to extend the program to include other classes of commercial insurers in the future. In addition, the BMA is developing a new risk-based capital adequacy system for Class 4 companies, which is scheduled for implementation beginning with their December 2007 statutory filings. The new risk-based capital (RBC) model will apply capital charges to



individual classes of business (premium and claims liability) based on the characteristics of premium and claims liabilities for each class of business, rather than to the insurers' overall premium and claim liability balances. There will also be a specific capital charge for business that is exposed to natural catastrophes, and capital charges for other asset and liability classes. The BMA developed the RBC system to ensure that Bermuda's regulatory approach is consistent with international standards, including the proposed solvency regulation currently under development by the International Association of Insurance Supervisors (IAIS).<sup>10</sup>

In addition to its comparative flexibility, one of the hallmarks of the Bermuda regulatory system is the spirit of cooperation that exists between the insurance industry and the regulator. This is in contrast to the more cumbersome and adversarial regulatory system in the U.S. and many other traditional regulatory jurisdictions. However, one potential downside to the close relationship between insurers and the regulatory authorities in Bermuda is an unusual lack of transparency with respect to insurer financial reports. In the U.S., statutory regulatory reports are publicly available and widely used in economic and financial analyses of the insurance industry. This degree of transparency, which is valuable in facilitating market discipline as a regulatory mechanism, is completely absent in Bermuda.

In Bermuda, no information on individual insurers in classes 1, 2, and 3 is released by the BMA. The BMA's reporting on the insurance sector for class 1, 2, and 3 insurers is confined to an annual release of aggregated data by class of insurer and in various other highly aggregated categories. It would be helpful to market participants and researchers if the BMA were to release the key balance sheet and income statement data on regulated insurers in Classes 1, 2, and 3. Releasing summary information on individual insurance companies would be consistent with emerging principles of international financial regulation. Because regulation is inherently

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<sup>10</sup> For further discussion of regulatory developments in Bermuda, see Bermuda Monetary Authority (2005, 2006).

imperfect, providing additional information on class 1, 2, and 3 insurers in the Bermuda insurance market could play an important role in enhancing the level of financial strength of insurers and avoiding insolvency problems in the future. This would be consistent with the principle of “market discipline” incorporated in the Basel II capital accord for banks. The BMA currently requires Class 4 insurers to publish their GAAP financial accounts, so transparency is already adequate for this group of firms.

### **Taxation of Bermuda Insurers**

An attractive feature of Bermuda as an insurance domicile is that Bermuda has no corporate income tax, i.e., there is no tax on capital gains, profits, or shareholder dividends. The no tax guarantee extends until 2016. However, Bermuda does levy a 13.5 percent payroll tax, of which the employer is entitled to recover up to 4.75 percent of the 13.5 percent tax from each employee (KPMG 2005, p. 5). In addition, the U.S. imposes a federal excise tax on premiums paid to foreign insurers and reinsurers with respect to risks insured in the U.S. The excise tax is 4% for direct property-casualty insurance premiums and 1% for life and reinsurance premiums.

Insurers also may be able to gain from incorporating in Bermuda by reducing their exposure to corporate income taxation in their home jurisdictions. For example, if incorporated in the U.S., an insurer would be subject to U.S. corporate income taxes on all of its income, whether earned from the U.S. or abroad.<sup>11</sup> By incorporating in Bermuda, insurers can avoid paying U.S. income taxes on their non-U.S.-sourced income. This represents a significant reduction in costs for insurers operating in Bermuda and is one of the primary advantages of the Bermuda domicile. Tax rules vary in other jurisdictions, but many industrialized nations do not levy taxes on income or profits earned by foreign subsidiaries.

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<sup>11</sup> There are provisions for foreign income tax credits in the U.S. Tax Code, but these rarely exempt insurers from paying federal income taxes on all foreign income.

## **Other Advantages of Bermuda as an Insurance Domicile**

Aside from regulation and taxation, Bermuda has several other advantages as a location for insurance operations. Bermuda is politically stable, with a low government debt burden, a high sovereign financial rating, and a stable monetary system. The government recognizes the value of encouraging the development of financial businesses, particularly insurers, and thus the environment tends to be “business friendly.” Bermuda has an effective financial regulatory system that reduces systemic risk, deters fraud, and facilitates consumer protection, thereby fostering confidence in the financial system.

Bermuda also boasts a highly-educated workforce and one of the highest ratios of GDP to population in the world. It also has an excellent judiciary, a good telecommunications system, and world-class legal and banking systems. Bermuda also has a low crime rate and is a pleasant place to live and work. Because of its location, Bermuda is easily accessible to the U.S., which is important in raising capital and providing insurance and reinsurance to U.S. clients. Bermuda also has close ties to the U.K., which is one of the world’s most important insurance markets.

Unlike some offshore jurisdictions, Bermuda does not have banking secrecy laws. Also unlike some other jurisdictions, Bermuda has a policy of cooperating in legitimate criminal and regulatory investigations. Thus, Bermuda is viewed favorably as a respected member of the international community by developed regions such as Europe and the U.S. Bermuda also has not participated in the “race to the bottom” approach to attracting new firms.

A very important advantage of Bermuda as an insurance domicile is the intellectual capital and support infrastructure that have developed in Bermuda. The infrastructure development paralleled the growth in the number of captives in the 1960s and 1970s and accelerated, beginning with the expansion of the Bermuda insurance industry to include prominent non-captive insurers during the 1980s, 1990s, and beyond. Bermuda now houses

significant intellectual capital in all areas required to successfully operate an insurance enterprise. This includes significant expertise in actuarial science, insurance brokerage, insurance underwriting, accounting and auditing, tax management, and general business management. Bermuda also has significant intellectual capital in computer modeling and analytical capabilities, which is particularly important in insurance underwriting and pricing. In addition, the infrastructure support is also located in a small concentrated area consisting of about one square mile in Bermuda's capital, Hamilton, with everything within easy walking distance.

Bermuda also has become known as a leading incubator for new insurance and risk transfer solutions. The intellectual capital present in the Bermuda market is a primary driver of innovation. The ability to innovate is also enhanced because Bermuda is small, facilitating close cooperation between the public and private sectors. The private sector has easy access to the regulator, and mutual trust and confidence have built up over time to an extent not present in many other jurisdictions. The lack of significant forms regulation means that Bermuda insurers can move quickly to develop innovative policies to cover new and evolving risks. This is unlike the U.S., where insurance policy forms are still heavily regulated by the states.

In terms of economic theory, Bermuda benefits from *economies of agglomeration*. This term is used in urban economics to describe the benefits that firms obtain when locating near each other. It is related to the ideas of economies of scale and network effects in that the more related firms are clustered together, the lower the cost of production becomes because firms have competing multiple suppliers and can achieve greater specialization and division of labor. When multiple firms in the same sector (competitors) cluster, there are advantages because the cluster attracts more suppliers and customers than a single firm could alone. The concentration of captive insurance companies in Bermuda provides a natural market for Bermuda's reinsurers, and the presence of the reinsurers and intellectual capital and infrastructure makes Bermuda a

one-stop shopping environment for captives. The presence of multiple reinsurers in the market facilitates retrocessions and other forms of risk-sharing. Thus, Bermuda presents advantages as an insurance center that are comparable to the advantages of New York as a financial center.

## **5. The Structure of the Bermuda Market**

Obtaining comprehensive data on the Bermuda market is difficult because of the lack of public disclosure of individual company information by the BMA. This is especially a problem for companies in classes 1, 2, and 3 and for many long-term insurers. However, for class 4 insurers and some class 3 insurers, data are much more readily available because such firms issue securities in financial markets and hence file data with the SEC and other regulatory bodies. In addition, it is advantageous for class 3 and 4 firms and even for some class 1 and 2 firms to obtain financial ratings from international financial ratings firms such as Standard & Poor's, Moody's, and Fitch. Hence, data on the larger firms are available from various sources. This section contains an analysis of the structure of the Bermuda market based on data that has been pieced together from a variety of sources. The discussion is generally structured on the basis of the data sources, so that the discussion within each sub-section is based primarily on a specific data source and hence is internally consistent.

### **The BMA Aggregate Data on Market Structure**

Aggregate data on the Bermuda market from the BMA are presented in Figure 5.1, which shows premiums, assets, and capital & surplus from 1981 through 2005. During this period, the assets of Bermuda insurers grew from about \$15 billion to \$330 billion, while gross premiums written increased from \$6 billion to \$100 billion and capital and surplus grew from \$7 billion to \$110 billion. The average annual compound growth rates in the series shown in Figure 5.1 were 12.7% for gross premiums written, 13.7% for net premiums written, 13.8% for assets, and 12.4% for capital and surplus. Clearly, the Bermuda market has expanded impressively over time.

To provide perspective for the market growth shown in Figure 5.1, Figure 5.2 shows the net premiums written, assets, and surplus of the Bermuda market relative to the U.S. property-casualty industry aggregates. Net written premiums for Bermuda companies were only about 5 percent of U.S. property-casualty insurance premiums in 1981, but this proportion grew to about 20% in 2003-2005. Bermuda insurers' capital and surplus stood at about 10% of U.S. property-casualty insurer's surplus in 1981, but this proportion had increased to 25 percent in 2003, dropping off slightly to about 20% by 2005. Bermuda insurers' assets were about 7 percent of U.S. property-casualty insurer assets in 1981, increasing to about 21% by 2005. These figures understate the importance of the Bermuda market in commercial lines because about half of the property-liability insurance premiums in the U.S. are for personal lines such as automobile and homeowners, which generally are not written by Bermuda companies.

As an initial indicator of financial strength in the Bermuda market, Figure 5.3 shows the ratios of gross and net premiums written to surplus for the Bermuda market from 1981-2005. Also shown for comparison is the ratio of net premiums written to surplus of the U.S. property-liability industry. For most of the period, the leverage of Bermuda insurers was much lower than that for U.S. insurers. For example, in the mid-1990s, the Bermuda gross premiums written ratio was about 0.6 and the net premiums written ratio was about 0.5, in contrast to the U.S. ratio, which was slightly above 1.0. However, by the end of the period shown in the figure, the Bermuda and U.S. ratios had converged, and the ratio of net premiums written to surplus was about 0.8 for both the Bermuda and U.S. markets. As another indicator of leverage, Figure 5.4 plots the ratios of liabilities-to-surplus for the U.S. and Bermuda markets. Again, Bermuda had much lower leverage than the U.S. for most of the period, but the ratios had converged by 2005 to about 2.0 for both markets.

It is difficult to say from these figures whether the convergence of leverage ratios for the

U.S. and Bermuda markets is permanent or transitory. However, because insurance is an increasingly global market, and Bermuda and U.S. insurers compete directly in many lines of business, it would not be surprising if the convergence represented a long-term trend. The rationale is that if insurers compete globally, obtain capital from the same sources, and are rated by the same financial rating firms, all of which seem to be the case, then one would not expect to observe persistent differences in financial ratios or other firm characteristics. However, it is possible that persistent differences in factors such as regulatory costs could lead to differing characteristics among firms headquartered in alternative jurisdictions which might be slow to disappear. It will be interesting to see what develops over the next decade in comparative financial performance statistics regarding the U.S., Bermuda, and European markets.

I next look at the changing composition of Bermuda companies over time using the available data from the Bermuda Monetary Authority. Table 5.1 shows the total number of international (i.e., exempted) insurers registered with the BMA by year from 2001-2005, and Table 5.2 shows the number of new registrations per year for the same time period. The total number of international insurers declined somewhat over the period 2001 through 2005, partially due to the fact that the “other” category, which primarily represents inactive firms, was not reported in 2004 and 2005. Ignoring the “other” category, the number of firms peaked in 2003 and then declined slightly by 2005. The number of new insurer formations was highest in 2001 at 109 and steadily declined to 75 by 2005. The stagnant total number of insurers and decline in new formations partially reflects the fact that Bermuda has become a mature market and partly reflects intensified competition from new jurisdictions as potential captive domiciles.

Table 5.3 gives market statistics by class of insurer for 2005, including gross and net premiums, assets, and capital and surplus. The capital and surplus of Bermuda insurers at the end of 2005 is shown graphically in Figure 5.5, and net premiums written by class of insurer are

shown in Figure 5.6. Figures 5.5 and 5.6 show that class 4 insurers are quantitatively the most important type of insurer in the market, accounting for 37% of total capital and surplus and 33% of net premiums written. Figure 5.7 shows that class 4 insurers also account for 35% of total assets in the Bermuda market. Class 3 insurers also account for significant proportions of the market, accounting for 35% of capital and surplus and 29% of net premiums written. Class 1 insurers are least important quantitatively, accounting for 7% of capital and surplus, 4% of net premiums written, and 5% of assets.

The changes over the past six years in the market shares of the various classes of insurers are shown in Figures 5.8 and 5.9, which show the distribution of capital and surplus and net premiums written, respectively, by class of insurer. Both figures show the growing importance of the class 4 insurers. Class 4 insurers accounted for 20% of total capital and surplus in 2000, increasing to 37% by 2005. By contrast, the share of class 3 insurers in total capital and surplus declined from 46% in 2000 to 35% in 2005. In net premiums written, class 4 insurers went from 17% of the market in 2000 to 32% in 2005, while class 3 insurers declined from 57% to 29% over the same period. In part, these trends reflect mergers and acquisitions as well as some migration of insurers from class 3 to class 4 and provide another indication that the Bermuda market is changing and converging towards becoming a “large company” market.

The gross and net premiums written to surplus leverage ratios by class of insurer are shown in Figures 5.10 and 5.11, respectively. The figures show that leverage ratios clearly differ by insurer class, with the class 3 and 4 insurers tending to operate at higher leverage ratios than the class 1 and 2 insurers. For example, in 2005, the class 3 and 4 insurers had net premiums-to-surplus ratios of 65% and 67%, respectively, while the class 1 and 2 insurers had ratios of 46% and 54%, respectively. In part, these differences reflect the larger size of the class 3 and 4 insurers in that size implies better diversification and the ability to operate with proportionally



less equity capital. Class 3 and 4 insurers also are likely to be more aggressive in seeking to maximize profits than the class 1 and 2 insurers.

The BMA also breaks down Bermuda insurers by type into four primary categories – captives, professional insurers and reinsurers, class 4 reinsurers, and affiliated reinsurers. The breakdown of the number of Bermuda companies by primary type in 2005 is shown in Figure 5.12. Captives account for 66% of the number in terms of the number of companies, and professional reinsurers account for 26%.

The distributions of gross premiums written and capital and surplus by firm type are shown in Figures 5.13 and 5.14, respectively, for the period 2002 through 2005. In terms of gross premiums written, class 4 reinsurers and professional (re)insurers accounted for 54% of the market in 2002 and 77% in 2005. Class 4 reinsurers and professional (re)insurers held 63% of total Bermuda capital and surplus in 2002, and their proportion had increased to 73% by 2005. Captives accounted for about 20% of premiums and 24% of capital and surplus in 2005. Thus, although captives are clearly an important part of the Bermuda market, the class 4 firms and professional (re)insurers are becoming increasingly dominant.

The number of captive insurers in 2005 are broken down by type in Figure 5.15. Single-parent captives are class 1 insurers that write insurance only on the risks of their parent corporations. Single-parent captives were the first type of captive introduced in the Bermuda market and still account for 35% of the total number of Bermuda captives. The maturing of the Bermuda market is demonstrated by the fact that the majority of captives presently in the market have gone beyond the single-parent captive model in various ways. For example, 20% of the captives in the market in 2005 (172 firms) also write third party business, i.e., they insure risks other than those of their parent corporation. Writing outside business enables the captive to better diversify its risks, creates a potential profit center for the parent, and helps to ensure that

the parent can deduct premium payments to the captive for income tax purposes.

Group captives account for 14% of the number of captives in Bermuda (122 firms), and association captives account for another 13% (116 firms). Group and association captives are firms that insure the risks of several primary corporations which may be from the same industry (e.g., the energy industry) or members of an association. Such firms can achieve better risk diversification than through a single-parent captive, and being a member of a group or association captive also can help to ensure that premium payments are deductible for tax purposes. Rent-a-captives account for 7% of the number of captives in Bermuda (64 firms). Rent-a-captives are operated by captive managers who “rent-out space” to businesses who would like to insure some of their risks through a captive. Usually, the renters are firms of relatively small size, for which it is not cost effective to set up a single parent captive. The final category of captives are health care captives (7% of the total number of captives). Most of these firms are owned by hospital organizations to provide hospital professional liability coverage.

The quantitative importance of captives by type of firm is shown in Figure 5.16 which plots the distribution of gross premiums written over the period 2002-2005. From 2002-2004, captives that write third party insurance were the most important type in the market, accounting for more than 38% of GPW in 2002 and 2003 and for 34% in 2004. However, the market share of captives writing third party business dropped to 26% in 2005, equaling the market shares of association captives and single-parent captives in that year. Rent-a-captives and group captives also lost significant market share over the period.

To put the Bermuda captive market in perspective, Figure 5.17 plots the total number of

captives worldwide from 1982-2006.<sup>12</sup> The number of captives grew from about 1,100 in 1982 to approximately 4,652 in 2006. Table 5.4 shows the number of captives by jurisdiction in 2004-2006. The United States is now the leading domicile for captives, with 1,251 captives located in various U.S. states in 2006. Bermuda is the second leading domiciliary jurisdiction for captives, with 989 captives in 2006. In 2006, the U.S. accounted for 26.9% of the world's captives, and Bermuda accounted for 21.3%.

Although the precise results are difficult to document, it is clear from the professional literature that Bermuda has faced increasing competition from other domiciliary jurisdictions. This includes not only other off-shore jurisdictions near the U.S. such as the Cayman Islands, British Virgin Islands, and Barbados but also on-shore and off-shore jurisdictions in Europe such as Luxembourg, Dublin, and Guernsey. In addition, several U.S. states, including Vermont, which now has 563 captives, decided to compete as captive domiciles in order to generate white collar employment and tax revenues. Accordingly, their insurance laws were revised to facilitate the formation of captives. Eighteen U.S. states and the District of Columbia are now serving as captive domiciles, and at least two additional states are trying to attract captives. Captives are also located in U.S. territories such as the U.S. Virgin Islands and Guam.

The BMA also reports aggregated data by country of ultimate owner for Bermuda insurance companies. Data on the number of companies by country of owner in 2005 are shown in Figure 5.18. As expected, North America (primarily the U.S.) accounts for the largest number of Bermuda insurers, about two-thirds of the total. The second leading geographical area in terms of company ownership is the U.K., with 15% of the companies; and the third leading jurisdiction is Bermuda, with 10.8% of the companies. The distribution of gross premiums

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<sup>12</sup> The break in the data in 2004 occurs because the 2004 and later data are from *Business Insurance*, whereas the earlier data are from the A.M. Best Company and other sources. Thus, the drop in the number of captives in 2004 is most likely due to differences in data collection rather than necessarily representing a significant decrease.

written by country of owner is shown in Figure 5.19. Companies owned by North American parents account for 61.7% of gross premiums written, followed by Bermuda-owned companies (28.6%), and European-owned companies (7.3%). The conclusions to be drawn from the country of ownership data are that Bermuda primarily serves as a supplier of insurance to the U.S. but that corporate parents from many other countries are also active in the Bermuda market, including parents from Asia, Africa, the Middle East, Europe, South America, and the Caribbean. Bermuda clearly has become a global player in insurance and reinsurance markets.

### **Bermuda in the Global Reinsurance Market**

Data on the role of Bermuda in the global reinsurance market is provided by Standard & Poor's in its annual publication *Global Reinsurance Highlights (GRH)*.<sup>13</sup> GRH ranks the top global reinsurers each year and lists all major reinsurers by country. The top 40 ranking for 2005 is shown in Table 5.5. Reinsurers from twelve different countries are represented on the top 40 list, and the country with the largest number of companies on the list is Bermuda. Bermuda rose to prominence as a reinsurance market following Hurricane Andrew in 1992 and has continued to increase in importance since that time. The reasons are that Bermuda is located close to the U.S., has developed a sophisticated infrastructure for the operation of financial institutions, offers flexible insurance regulation, and levies no income taxes. Hence, Bermuda's prominence historically was primarily due to restrictive regulatory and tax regimes in other jurisdictions such as the U.S. and the U.K. Although its flexible regulatory and tax systems have helped Bermuda to maintain its advantage as an insurance domicile, many other factors also contribute to its

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<sup>13</sup> Standard & Poor's publishes an annual document entitled *Global Reinsurance Highlights*. For purposes of this project, I obtained the document from 1995 through 2006 (Standard & Poor's, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006). *Global Reinsurance Highlights (GRH)* is generally viewed as an authoritative publication on the global reinsurance market. However, the reporting is somewhat inconsistent over time and there were some errors and omitted data, particularly for the earlier years of the publication. Nevertheless, because GRH is widely accepted in the insurance industry and the alternative sources of data are no better, results based on the GRH are presented here.

attractiveness as a center for insurance operations at the present time, as explained elsewhere in this report.

Twelve Bermuda reinsurers appear in the GRH top 40, accounting for 17% of total net premiums written of the top 40 firms. Bermuda is the third leading country in terms of total premiums written among the top 40 reinsurers. Germany is the leader with 24% of the top 40 premiums, and the U.S. has 22%. Bermuda is ahead of Switzerland, the fourth leading country, with 16.5% of the top 50 premiums. Bermuda's premium percentage understates the importance of Bermuda insurers in specific markets such as commercial casualty and excess property. The growing importance of Bermuda is shown by the fact that only one Bermuda insurer was in the top 40 in 1996 and nine appeared in the top 40 in 2002. The Bermuda companies appearing in GRH for each year from 1993 to 2005 are shown in Appendix A.

The total net premiums written and adjusted shareholders' funds for global reinsurers based on GRH from 1996-2005 are shown in Tables 5.6 and 5.7.<sup>14</sup> The tables also show the percentage distribution of premiums and shareholders' funds by principal jurisdiction. Bermuda's percentage share of global reinsurance net premiums written and adjusted shareholders' funds is shown in Figure 5.20, and the 2005 percentage distribution of premiums and shareholder's funds by jurisdiction is plotted in Figures 5.21 and 5.22. Because Figure 5.21 is based on the world's total non-life insurance premiums, regardless of country of origin of the ceding insurer, it does not fully reveal the importance of foreign reinsurance to U.S. insurers. In particular, the overall numbers tend to understate the importance of Bermuda as a source of reinsurance for U.S. insurers, as discussed in more detail below.

Figure 5.20 shows that Bermuda's importance as a reinsurance domicile has grown

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<sup>14</sup> Adjusted shareholders' funds is defined as capital + shareholders' reserves (including claims-equalization reserve and an excess or deficiency of market value of investments over the balance sheet value. See Standard & Poor's (2006, p. 25).

significantly over the past ten years. Bermuda accounted for less than 5% of net premiums written and adjusted shareholder's funds in 1996; but Bermuda's share of premiums had risen to 11% by 2005, and its proportion of shareholder's funds had increased to 9.4% by 2005. Figure 5.21 shows that Bermuda is the world's third leading supplier of reinsurance in terms of net premiums written, behind only the U.S. and Germany and ahead of traditional reinsurance centers such as Switzerland and the U.K. Bermuda ranks fourth in adjusted shareholders' funds (see Figure 5.22), but this result is distorted by Japan's adjusted shareholders' funds, which includes capital that is not exclusively being used to back reinsurance operations. The growing importance of Bermuda as a reinsurance center is emphasized by Figure 5.23, which shows the distribution of net premiums written by jurisdiction in 1996. In that year, Bermuda ranked seventh in the world, behind Germany, the U.S., Switzerland, the U.K., Japan, and France.

GRH also tracks the financial performance of global reinsurers, primarily through combined ratios and returns on revenues.<sup>15</sup> The combined ratios and returns on revenue by jurisdiction are shown in Tables 5.8 and 5.9 for the period 1996-2005, and the ratios are graphed in Figures 5.24 and 5.25, respectively.<sup>16</sup> Based on Figure 5.24, it is clear that the combined ratio for Bermuda reinsurers has typically been below that of the other principal reinsurance jurisdictions, especially in the earlier years shown in the Figure. However, there appears to be some convergence of the ratios over time, and the Bermuda ratio is higher than the other jurisdictions for 2005, primarily due to Hurricane Katrina, Wilma, and Rita claims. Bermuda reinsurers also have been the top performers in return on revenue in comparison with other reinsurance jurisdictions (see Figure 5.25). The only exception is 2005, where Bermuda had the lowest return on revenues among major jurisdictions, again due to the unprecedented level of

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<sup>15</sup> Return on revenue is defined as pretax operating income/total revenue. Total revenue = net premiums earned + net investment income + other income. See Standard & Poor's (2006, p. 25).

<sup>16</sup> Japan is excluded from the figures because its ratios are erratic and often not reported for many companies.

hurricane activity that year. Generally, however, Bermuda reinsurers compare very favorably with reinsurers from other jurisdictions in terms of these financial benchmarks.

### **Financial Ratings: Standard & Poor's Data**

This study also examines the financial ratings of Bermuda insurers relative to insurers in other jurisdictions around the world. The results are based on Standard & Poor's ClassicDirect database, which provides summary financial data and ratings for insurers worldwide. It is important to note that ClassicDirect reports on all insurers, not just reinsurers. However, it is possible to separate life and non-life insurers, and only non-life insurers are included in this analysis, paralleling their predominant role in the Bermuda market. The Bermuda insurers included in the study for 2005 are shown in Appendix B.1, along with some key operating statistics. The samples of insurers by region vary by years.<sup>17</sup>

The Standard & Poor's ratings distributions for Bermuda, continental Europe, the U.K., and the U.S. are shown in Figures 5.26 through 5.29, respectively. The ratings of Bermuda insurers have improved significantly over the period shown in Figure 5.26. In 1992, Bermuda insurers were about evenly divided between the A, BB, and B categories.<sup>18</sup> Over time, the proportion of Bermuda insurers with higher ratings has risen, until 2005 when 11% were rated AA, 67% were rated A, and only 22% were rated BBB.<sup>19</sup> Thus, the ratings drift for Bermuda insurers has generally been positive, even in 2005 which was a loss year due to Hurricanes Katrina, Wilma, and Rita.

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<sup>17</sup> When zero appears as a financial rating in Appendix B, it means that Standard & Poor's did not assign a financial rating to the firm in 2005.

<sup>18</sup> For purposes of this analysis, some of the more finely graduate Standard & Poor's ratings categories have been combined. Specifically, firms with AA+, AA, and AA- have been grouped together as having AA ratings, firms with A+, A, and A- ratings are grouped together as A ratings, firms with BBB+, BBB, and BBB- are grouped together into the BBB category, firms with B+, B, and B- are grouped together as B, and firms with CCC+, CCC, CCC-, and lower financial ratings are grouped together as having ratings of CCC or lower.

<sup>19</sup> The ratings summary is based on all insurers reported in Standard & Poor's Classic Ratings Database, which includes some financial guarantee firms.

The ratings drift was more erratic over the sample period for insurers in the U.S. (Figure 5.29).<sup>20</sup> For example, in 1996, 55% of U.S. insurers were rated below the A category. The percentage below A in the U.S. was 63% in 1998, 65% in 2000, 76% in 2003, and 83% in 2004. In the other years since 1996, more than 50% of insurers were rated A or better, and the percentage in this category rose to 63% in 2005. In the U.K. (Figure 5.28), the ratings also fluctuated over the sample period, and by 2005, the percentage rated A or above was 43%. The ratings generally improved over the period in Continental Europe, with 53% of insurers rated as A or better in 2005 (Figure 5.27).

The ratings trends for five regions (Asia, Bermuda, Continental Europe, the U.K., and the U.S.) are shown in Figure 5.30. For purposes of this figure, the letter ratings assigned by Standard & Poor's were given numerical values, with lower values indicating higher financial ratings.<sup>21</sup> Therefore, a higher numerical rating is equivalent to a lower average financial rating for a jurisdiction. Bermuda firms on average had relatively low financial ratings on average during the period shown in the figure. The Bermuda numerical average was the highest or second highest in nine of the ten years shown in the figure. In part, this reflects the fact that Bermuda firms on average are engaged in underwriting more risky lines of insurance, such as property and casualty excess liability, than firms in other jurisdictions, where lower risk lines such as private passenger automobile insurance represent a significant part of the market. The countries with the most favorable average financial ratings during most of the period and especially in 1999-2005 are the U.K. and the U.S. Although the reason for the higher ratings in these two jurisdictions is not clear, a possible hypothesis is that the higher ratings arise because firms in these jurisdictions exhibit a higher degree of financial transparency due to stricter disclosure requirements than in

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<sup>20</sup> The sample of insurers in the earliest years shown in the figure is generally quite low. The statistics begin to become more meaningful in about 1995 and 1996.

<sup>21</sup> The numerical values are: 1 = AAA, 2 = AA, 3 = A, 4 = BBB, 5 = BB, 6 = B, and 7 = CCC and lower.



other jurisdictions such as Bermuda, the Caribbean, and Continental Europe.

### **Key Performance Ratios: Standard & Poor's Data**

The key financial performance data and financial ratios are shown in Tables 5.10 through 5.14 for Asia, Bermuda, the U.K., Continental Europe, and the U.S. The data shown are based on a combination of data from Standard & Poor's (S&P) Classic Ratings database and S&P's Eurothesys database. The firms included are property-liability (non-life) insurers in general, not just reinsurers. In compiling the tables, strict screens were imposed to eliminate outliers. Therefore, the tables do not summarize all companies in each region but only the major insurers that have complete data available. It is also noteworthy that S&P's reporting of insurers was much less complete for the earlier years shown in the tables. The tables begin to become more reliable in the mid-1990s. Despite these limitations, the tables give the most complete statistical overview of international insurance markets presently available.

The combined ratios by region are plotted in Figure 5.31, based on the data in Tables 5.10-5.14. The performance ratios based on Tables 5.10-5.14 are different from those presented in A.M. Best Company (2006a) and similar industry sources because they are based on a broader sample of firms, whereas Best's used an eighteen firm sample called the Bermuda composite. As expected, the combined ratios peaked in 2001 for Bermuda and U.S. firms, due to the 9/11/2001 terrorist attacks and a general deterioration of underwriting results. Figure 5.31 shows that Bermuda firms tend to have higher combined ratios than firms in other regions. The Bermuda firms had the highest overall combined ratio in six of the ten years shown in the figure. Continental European firms tended to have the lowest combined ratios in most of the years shown. The differences in the combined ratio by region are attributable to the types of business conducted by firms in various regions. Bermuda firms are focused on very volatile lines of business such as excess reinsurance for property catastrophes and liability insurance, whereas the

ratios for regions such as the U.S., the U.K., and Continental Europe are more heavily weighted towards primary market coverages such as personal automobile insurance.

Figure 5.32 shows ratios of net premiums written to surplus by region. This is an important leverage ratio for the insurance industry. Bermuda tends to have the lowest ratio of net premiums written-to-surplus of the five world regions shown in the Figure, and the U.K. and Continental Europe generally have the highest ratios. Bermuda firms maintain more capital per dollar of premiums written because of the volatility of their insurance portfolios, whereas firms that write more primary market coverages such as personal lines can safely operate with higher leverage ratios. To some extent, the higher ratios for the European firms may reflect the traditional protectionist nature of European insurance markets, where insurers were sheltered from price competition and cross-border competition was not permitted, except for reinsurance. However, the European market has been changing since the adoption of the Third Generation Insurance Directives in 1994, perhaps accounting for the declines in European leverage ratios near the end of the period shown in Figure 5.32.

Pre-tax profit-to-surplus ratios by region are portrayed in Figure 5.33. Bermuda insurers have the most volatile profit-to-surplus ratio of the five major regions. This is apparent visually from Figure 5.33 and confirmed by calculation of the standard deviation of the profit-to-surplus ratios. Bermuda has a standard deviation of 8.1%, compared to 6.2% for the U.K., 5.3% for Continental Europe, 4.9% for the U.S., and 1.6% for Asia. The Bermuda and U.S. ratios were negative in 2001 due to the 9/11 terrorist attacks, with the Bermuda ratio falling to -6% in that year. The Bermuda ratio also ended in negative territory in 2005, due to Hurricanes Katrina, Wilma, and Rita. Even though these loss events primarily struck the U.S., the U.S. insurers' profits were positive in 2005, reflecting improved exposure management, reinsurance recoveries, and good underwriting results in large volume lines such as private passenger automobile. The

overall conclusion regarding Bermuda is that the Bermudians tend to take on volatile, high risk business, which helps to shelter regions such as North America from large loss shocks.

## **6. Bermuda As Supplier of Reinsurance to U.S. Insurers**

The U.S. is the world's largest single insurance market. The sheer magnitude of the market coupled with high concentrations of property values in catastrophe-prone areas such as Florida, the Gulf Coast, and California as well as burgeoning commercial liability insurance claims creates the world's largest demand for reinsurance. In order to meet these needs as well as needs of other regions, the market for reinsurance has become truly global. Only by diversifying losses across the entire world is it possible for the insurance industry to provide coverage and pay losses in areas such as Florida and California which have high exposure to catastrophic risk and large concentrations of property values. The U.S. is by far the leading market in terms of both the demand for reinsurance and the amount of loss payments funded by reinsurers. In fact, the U.S. accounted for 87 percent of worldwide insured catastrophe losses in 2005 (Swiss Re 2006) and for more than 60 percent in 2006 (Swiss Re 2007). As a result, U.S. insurance markets are heavily dependent upon both domestic and foreign reinsurers. Bermuda has become the world's most important market place in terms of supplying reinsurance to U.S. insurers. This section analyzes the supply of reinsurance to U.S. insurers by Bermuda and the world's other leading jurisdictions.

### **Bermuda As Supplier of Reinsurance to U.S. Insurers: Overview**

The reliance of U.S. insurers on foreign reinsurance is elucidated in Table 6.1. In U.S. insurance regulation, the term "foreign," which in general usage means "non-U.S.," is used to refer to insurance companies domiciled in other states of the U.S., whereas insurers and reinsurers domiciled in other countries are called "alien" insurers. For clarity, and to be consistent with the source of the data for Table 6.1, the term alien is adopted in this discussion.

Table 6.1 shows the number of “alien” jurisdictions with which U.S. insurers transacted reinsurance business from 1996-2005. U.S. insurers did business with reinsurers domiciled in approximately 100 countries in each year and purchased reinsurance from more than 2,000 different alien reinsurers in each year except 1997. Total ceded reinsurance premiums, to both affiliated and unaffiliated alien insurers, grew steadily over the period and reached \$62 billion by 2005. Putting this number in perspective, total net written premiums in all lines for U.S. property-casualty insurers were \$433.5 billion in 2005. As the premium totals would suggest, U.S. insurers are also heavily dependent on alien reinsurers for their financial strength. As shown in Table 6.1, U.S. insurers showed \$123.9 billion in recoverables from alien reinsurers in 2005, equal to 22.9 percent of total policyholders’ surplus.<sup>22</sup>

The relative importance of alien reinsurers and U.S. professional reinsurers as sources of supply for reinsurance coverage for U.S. insurers is shown in Figure 6.1. The figure shows the percentage of total reinsurance premiums ceded by U.S. insurers to U.S. professional reinsurers and alien reinsurers from 1997 to 2005. The percentage of reinsurance ceded to alien reinsurers increased significantly during this period, from 38.4 percent in 1997 to 51.8 percent in 2005. Figure 6.2 shows that Bermuda and Caribbean jurisdictions accounted for 53 percent of reinsurance cessions by U.S. insurance companies in 2005, while Germany, Switzerland, and the U.K. accounted for another 41 percent. Thus, U.S. insurers are heavily dependent on non-U.S. reinsurers, with Bermuda, Caribbean jurisdictions, and three European countries accounting for a substantial share of the transactions.

Premiums and recoverables from unaffiliated alien reinsurers by jurisdiction are shown in Tables 6.2 and 6.3. Premiums are shown from 1990-2005 and recoverables from 1991-2005, the

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<sup>22</sup>Recoverables represent funds owed by alien reinsurers to U.S. insurers, consisting primarily of loss payments owed under reinsurance contracts. Policyholders surplus is the property-casualty insurance industry’s terminology for equity capital.

maximum periods for which data were available from the RAA. In terms of ceded premiums, Bermuda has been the leading supplier of reinsurance since 1993, when it surpassed the U.K. as a source of reinsurance. In terms of receivables, Bermuda surpassed the U.K. in 2005, but in many other years the U.K. remained the leading source of receivables. In part this is because U.K. insurers were more heavily involved than Bermuda insurers in providing reinsurance for U.S. liability insurance in the earlier years shown in the table whereas Bermuda reinsurers were more heavily involved in providing property catastrophe coverage. Because liability claims have a much longer payout tail than property claims, the U.K. reinsurers retained their lead for a longer period of time in the recoverables category.

Total premiums and recoverables from affiliated and unaffiliated alien reinsurers by jurisdiction are shown in Tables 6.4 and 6.5. When affiliated reinsurers are included in the totals, the predominance of Bermuda as a supplier of reinsurance to the U.S. market is even more apparent. In premiums ceded, Bermuda surpassed the combined total of its closest competitors, the U.K., Germany, and Switzerland in twelve of the sixteen years shown in Table 6.4.<sup>23</sup> In 2005, Bermuda accounted for 44.3% of premiums ceded to alien reinsurers, compared to 41.3% for the U.K., Germany, and Switzerland combined. The breakdown of total affiliated and unaffiliated ceded premium by country, shown in Figure 6.2, reveals Bermuda's leadership.

Bermuda is also the clear leader in terms of reinsurance receivables when both affiliated and unaffiliated reinsurers are considered (Table 6.5). Bermuda surpassed the combined totals for the U.K. and Germany in 1993, and by 2005, Bermuda accounted for 39.6% of receivables compared to 31% for the U.K. and Germany combined. However, the total for the U.K., Germany, and Switzerland combined is higher than the Bermuda total for receivables in most

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<sup>23</sup>This somewhat overstates the importance of Bermuda because Munich Re and Swiss Re have U.S. licensed subsidiaries, which are not included in the tables since they are not considered alien reinsurers by U.S. regulators.

years shown in Table 6.5.

The Bermuda share of unaffiliated and total alien reinsurance premiums ceded and receivables are charted in Figures 6.3 and 6.4, respectively. The figures show that Bermuda's share of both premiums and receivables generally has increased over time but also show that Bermuda has been an important source of reinsurance for U.S. insurers for at least fifteen years. Thus, it is clear that U.S. insurers are and have long been heavily dependent on Bermuda as a source of reinsurance coverage. Moreover, these totals understate the importance of Bermuda as a source of reinsurance for specific lines of business such as commercial and professional liability reinsurance and property catastrophe reinsurance.

### **Bermuda As Supplier of Reinsurance to U.S. Insurers: By Line Analysis**

The results discussed in the preceding section provide an indication of the overall importance of Bermuda as a supplier of reinsurance to U.S. insurers. However, the importance of Bermuda is likely to vary by line of insurance. To provide an indication of the importance of the Bermuda market in reinsuring specific lines of business for U.S. insurers, a special study was conducted in cooperation with the Reinsurance Association of America (RAA). The study utilized the Schedule F database constructed by the RAA. The data in the RAA's Schedule F database are taken from the annual regulatory statements filed by U.S. insurers with the National Association of Insurance Commissioners (NAIC). The RAA has revised the raw data reported by insurers to correct errors and systematize the reporting of company names and other information contained in the database. The result is a version of Schedule F that is much more accurate than the raw NAIC data taken by itself.

Schedule F reports reinsurance purchasing by U.S.-licensed insurers from both domestic and alien reinsurers. The primary data items reported are premiums assumed and ceded and reinsurance recoverables. The data are provided by company. Although only U.S.-licensed

insurers are required to file Schedule F, U.S. companies are required to report transactions with non-U.S.-licensed (alien) insurers. Accordingly, Schedule F provides a complete picture of the reinsurance purchasing of U.S.-licensed (re)insurers.

Schedule F does not report data by line of insurance. In order to provide an approximate indication of the importance of reinsurers from Bermuda and other alien jurisdictions by line of insurance, a special study was designed. Specifically, an analysis was conducted of reinsurance purchasing by the top 50 reinsurance cedants in each of twelve lines of business. Although the premium cessions reported in Schedule F are the company's overall premiums and not premiums by line, by focusing on the leading cedants in each line of business, it is possible to obtain a better idea of the importance of Bermuda to insurers focusing on each line in the sense that they are purchasing a relatively large amount of reinsurance.

To determine the top 50 cedants for each line of business included in the study, data were obtained from the Part 2B – Premiums Written page of the NAIC annual statement. This page gives cessions to affiliated and unaffiliated insurers by line of business but does not break down sessions by the name of the assuming (re)insurer. For the top 50 cedants in each line, data on overall premium cessions were obtained from Schedule F. The lines of business included in the study are homeowners, aircraft, commercial multiple peril, ocean marine, medical malpractice, allied lines & earthquake (combined), workers' compensation, other liability, private passenger auto liability, commercial auto liability, auto physical damage, and non-proportional reinsurance. The variables tabulated in the study are premiums ceded and recoverables. The study focuses on reinsurance cessions to unaffiliated (re)insurers.

The results of the study are summarized in Tables 6.6A, 6.6B, 6.6C, and 6.6D, and the complete cessions of the top 50 groups to the top 10 jurisdictions for each line of business are reported in Appendix Tables C.1 through C.12. Tables 6.6A-6.6D show the top 20 jurisdictions

supplying reinsurance for the top 50 cedants in each line of business. The principal result of the analysis is that Bermuda is the leading supplier of reinsurance by far in all twelve lines of business included in the study. The proportion of premiums ceded to unaffiliated alien reinsurers that go to Bermuda insurers ranges from 34.4% in medical malpractice to 42% in homeowners. The second major conclusion to be drawn from Tables 6A-6D is that Bermuda plays an important role in providing reinsurance to the top 50 cedants across all lines of business, i.e., even though Bermuda is often characterized as a specialty market, in reality Bermuda companies supply reinsurance very broadly to insurers focusing on many different lines of insurance. An examination of Appendix Tables C.1 through C.12 shows that 238 U.S. insurance groups ceded reinsurance premiums to unaffiliated Bermuda (re)insurers in 2005, representing more than 1,000 individual companies.

Tables 6A-6D also show that the U.K. is the second leading jurisdiction in all twelve lines of business in terms of premiums ceded to unaffiliated alien reinsurers. Germany is the third leading jurisdiction in all lines except private passenger auto liability and medical malpractice, where the Cayman Islands are third. The Cayman Islands are the fourth leading jurisdiction in all lines where Germany is third, and Switzerland is consistently fifth except for auto physical damage, where Barbados is fifth. The top twenty jurisdictions account for more than 99% of ceded premiums to unaffiliated alien reinsurers in all twelve lines.

The amount of premiums ceded to unaffiliated Bermuda (re)insurers by U.S. firms is shown in Figure 6.5. The highest volume of cessions is by the top 50 firms in allied lines and earthquake insurance, which are catastrophe-prone lines. Other liability and ocean marine insurers cede the next highest volume of reinsurance to Bermuda. The lowest cession volume is for the top 50 medical malpractice insurers. The Bermuda percentage of reinsurance premiums ceded by U.S. insurers to unaffiliated alien reinsurers is shown in Figure 6.6. The top 50 firms in



terms of homeowners' insurers have the highest cession rate to Bermuda, again reflecting homeowners' insurance exposure to property catastrophes.

The RAA Schedule F analysis also tabulated the receivables owed to U.S. insurance groups by unaffiliated alien reinsurers by jurisdiction. As in the premiums ceded analysis, the analysis tabulated the total recoverables from unaffiliated alien reinsurers for the top 50 insurance groups in each of twelve lines of business. The results are summarized in Tables 6.7A, 6.7B, 6.7C, and 6.7D. The receivables from the top 10 alien reinsurance jurisdictions are shown for the top 50 U.S. insurance groups in Appendix Tables C.13-C.24.

Tables 6.7A-6.7D show that Bermuda is the leading alien jurisdiction in terms of reinsurance recoverables except in ocean marine and other liability insurance, where the U.K. is the leading jurisdiction. The U.K. is the second leading jurisdiction in the ten lines of business where Bermuda is ranked number one. Germany is the third leading jurisdiction in all lines, the Cayman Islands are the fourth leading jurisdiction in nine lines of business. Other jurisdictions ranking high in terms of receivables owed are Switzerland, Ireland, and Barbados.

The amount of receivables owed to U.S. insurers by unaffiliated Bermuda reinsurers is shown in Figure 6.7. The two leading lines in terms of the volume of receivables owed are other liability and ocean marine, each with more than \$11 billion in receivables. Workers' compensation, allied lines & earthquake, commercial auto liability, and non-proportional reinsurance are also among the highest volume lines in receivables. The lines with the lowest volumes of receivables are medical malpractice and private passenger auto. Homeowners is also a low volume line for receivables, primarily because homeowners claims are mostly property claims, which settle relatively quickly. In general, it is clear that U.S. insurers are heavily dependent upon Bermuda for the financial stability, particularly in risky lines such as other liability, ocean marine, and non-proportional reinsurance.

Bermuda's percentage of total receivables owed by unaffiliated alien reinsurers to U.S. insurance groups is shown in Figure 6.8. Bermuda's highest penetration is in homeowners receivables, where the island accounts for 33.5% of the total. Bermuda also accounts for 30% or more in private passenger auto liability, workers' compensation, auto physical damage, and commercial auto liability. The overall conclusion is that the financial backing of Bermuda insurers is important to U.S. insurance groups specializing in all of the lines shown in the figure.

### **Regional Distribution of 2005 Hurricane Claims**

As another indication of the importance of the Bermuda market to U.S. insurers, I consider the geographical distribution of hurricane payments for the major 2005 hurricanes that struck the U.S. – Katrina, Wilma, and Rita. These three storms were responsible for the worst hurricane season in history in terms of insured losses. Katrina alone is now estimated to have generated \$66 billion in insured losses, with Wilma adding \$13 billion and Katrina another \$10 billion (Swiss Re, 2007). Prior to Katrina, the most costly hurricane was 1992's Hurricane Andrew, which generated insured losses of \$23 billion in 2006 price-level adjusted dollars.

Bermuda and other reinsurance jurisdictions played major roles in helping to fund the losses from the 2005 hurricanes. The estimated loss payments by region are shown in Figure 6.9. The U.S. insurance industry, which was responsible for the primary loss payments to policyholders from these events, paid the largest share of losses, as expected – 32.5% for Wilma, 32.8% for Rita, and 40.1% for Katrina. Bermuda was the second leading source of funding, accounting for 27.5% of insured losses from Hurricane Wilma and 26.2% for both Rita and Katrina. The 2004-2005 hurricanes were truly "paradigm shifting" events for insurance markets, equivalent in their impact to Hurricane Andrew and the 9/11 terrorist attacks. The 2005 hurricane losses followed another record year for insured catastrophe losses, 2004, when four major storms, including Hurricane Ivan, caused \$32 billion in insured losses.

In general, reinsurance markets responded efficiently to the storm losses of 2004-2005. As would be expected, losses of the magnitude experienced in 2004-2005 had an impact on reinsurers' operating results. However, the effects were not as disruptive as prior events such as Hurricane Andrew and the WTC terrorist attacks. Moreover, substantial new capital entered the industry, placing the industry in a strong position to finance future catastrophic events. The capital raising activity, which particularly focused on Bermuda, is discussed later in this report.

U.S. reinsurers had combined ratios of 106.7 in 2004 and 144.8 in 2005, which included, respectively, catastrophe losses of 8.3 percentage points in 2004 and 34.6 percentage points in 2005. However, including investment income, U.S. reinsurers posted positive net income in both 2004 and 2005 (A.M. Best Company 2006a). U.S. reinsurers weathered the 2004-2005 storms without significant deterioration in key leverage ratios.

The Bermuda reinsurance industry bore the brunt of the 2004 and 2005 hurricane losses. Nevertheless, the industry was able to withstand the losses from both disaster years without major disruption. The Best's Bermuda composite combined ratio for 2004 was 94.9 percent, implying that the firms included in this index actually posted an underwriting profit for 2004.<sup>24</sup> However, the Bermuda combined ratio for 2005 was 119.4 percent, implying an underwriting loss of about 20 percent of premiums. The Bermuda composite firms incurred a net operating loss of \$3.3 billion in 2005, following a net operating gain of \$5.5 billion in 2004.

The U.K. and Continental European reinsurers also responded well to the 2004-2005 losses. Lloyd's of London and the London market reinsurers had combined ratios below 100 percent in 2004, and the combined ratios for Lloyd's and the London market companies were 112 and 119 percent, respectively, in 2005. These combined ratios were far below those

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<sup>24</sup> The Best's Bermuda Composite consists of the following companies: ACE, Allied World Assurance Holdings, Arch Capital Group, Aspen Insurance Holdings, AXIS Capital Holdings, Endurance Specialty Holdings, Everest Re Group, IPC Holdings, Max Re Capital, Montpelier Re Holdings, PartnerRe, Platinum Underwriters Holdings, PXRE Group, Quanta Capital Holdings, RenaissanceRe Holdings, and XL Capital.

experienced by Lloyd's and the London market firms in 2001 – 136 percent and 177 percent, respectively. The improved performance for the U.K. firms reflects the adoption of improved risk and capital management techniques, including a risk-adjusted approach to capital. The combined ratios for the continental European reinsurers were mostly in the same range as those of the U.K. reinsurers (see Figure 6.10). Nevertheless, in spite of sustaining approximately \$6 billion in U.S. hurricane losses, the major continental European reinsurers posted operating profits in 2005 (A.M. Best Company 2006a).

The overall success of the global reinsurance industry in responding to the 2004-2005 hurricane seasons is a sign that the industry is now much more proficient at risk and exposure management than it was at the time of prior catastrophes such as Hurricane Andrew, the Northridge earthquake, and the 2001 terrorist attacks. The industry also has developed the ability to price contracts more accurately. Bermuda (re)insurers have played a major role in helping to drive these favorable trends.

## **7. New Capital Issuance**

The securities markets and the insurance industry have become much more proficient at raising capital in recent years. As a result, substantial amounts of new capital can now be raised very quickly to replenish depleted capital and provide additional underwriting capacity in response to catastrophic losses and other events that increase the demand for insurance and reinsurance. Because the formation of new companies can be accomplished quickly and at low transactions costs in Bermuda and because of the proximity of Bermuda to the New York capital markets, Bermuda has become a hub for the inflow of new capital to support risk-bearing capacity. This section reviews the available information on new capital raising in insurance, with a focus on the Bermuda market.

Data on initial public offerings and seasoned offerings of equity capital are provided by

the Thomson SDC Platinum database. This discussion begins with an analysis of capital raising by property-liability insurers based on the Thomson data. Because Thomson is not an insurance specialist, however, their coverage of new issues is not necessarily complete, and Thomson does not provide much information on non-public offerings by insurers. Accordingly, the Thomson database understates the amounts of capital raised by property-liability insurers in Bermuda and other jurisdictions that are reported in industry sources. Therefore, following the Thomson discussion, additional capital issuance information is provided based on information gathered from various insurance industry publications.

The volume and number of initial public offerings (IPOs) of equity and seasoned equity offerings (SEOs) based on the Thomson database are shown in Tables 7.1 and 7.2, respectively. Table 7.1 shows that Bermuda insurers issued about \$6.8 billion in IPOs and \$17.8 billion in SEOs over the period 1992-2006.<sup>25</sup> Table 7.2 shows that the Bermuda issuance included 24 IPOs and 60 SEOs. The companies issuing the IPOs are shown in Table 7.3, and those issuing SEOs are shown in Table 7.4.

As expected, 2005 was a “hot period” for Bermuda capital issuance with about \$8.6 billion raised in 22 SEOs and 4 reported IPOs. As explained further below, the Thomson data cover only part of the capital raised in Bermuda because SDC Platinum does not consider private equity offerings or innovative vehicles such as sidecars. Nevertheless, the SDC data show that a substantial amount of equity was raised in the public markets in 2005. Other peak years for Bermuda capital issuance include 1993 (\$1.6 billion), in response to Hurricane Andrew, and 2001 (\$2.6 billion) in response to the September 11, 2001 terrorist attacks. A total of \$2.7 billion

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<sup>25</sup> The 2006 data are for the first six months of the year. These numbers are currently being updated and will be added to the revised version of this report.

was raised in 2004 in response to the hurricane losses incurred by insurers.<sup>26</sup> For the period as a whole, Bermuda accounted for 13.1% of IPO volume and 13.8% of SEO volume among the world's property-liability insurance public issues. However, in 2005, Bermuda accounted for 36.4% of IPO volume and 33.3% of the SEO volume.

Substantial amounts of new equity were also raised by U.S. and European property-liability insurers in 2005, with \$5.3 billion raised in the U.S. and \$13.5 billion in Europe (including the U.K.). U.S. insurers raised \$9.5 billion in 2001 in response to 9/11 and \$8.8 billion in 1993 in response to Andrew. For the period as a whole, 34.8% of total new public equity flowing into the property-liability insurance market was raised by U.S. insurers, 16.1% by U.K. insurers, and 33.9% by continental European insurers. The Asia-Pacific region accounted for only 1.6% of new equity. Thus, Bermuda is the fourth leading jurisdiction in total new public equity issuance, ahead of Asia but behind the U.S., Continental Europe, and the U.K.

In addition to conventional new and seasoned equity reported by Thomson, reinsurers also raised capital using innovative vehicles such as *sidecars* and *collateralized reinsurance structures*, most of which constitute private equity issuance. In addition, capital has been raised privately for start-up reinsurers. This discussion first provides a description of side-cars and collateralized reinsurance and then presents some statistics based on various industry sources.

One of the primary drivers of new capital issuance in Bermuda has been the increasing interest of hedge funds in investing in the market. Hedge funds were introduced to the world of reinsurance through industry loss warranties and catastrophe (CAT) bonds. However, the attractiveness of the reinsurance market has grown as competition among hedge funds has

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<sup>26</sup> These numbers do not match the total capitalization figures shown in Table 7.5 for the Bermuda Classes of 1993 and 2001. The reasons are that SDC includes only public capital issuance and that SDC does not necessarily capture 100% of all capital issuance transactions. Consequently, the total capital issuance in Bermuda and elsewhere is greater than the number reported by SDC. Nevertheless, the figures discussed here are useful because SDC remains the single most authoritative source on capital issuance.

intensified, increasing the difficulty in obtaining attractive returns on more conventional investments. In addition, reinsurance, and particularly catastrophe reinsurance, is perceived as an investment with a very low and possibly zero “beta” risk and therefore an attractive vehicle to enhance portfolio efficiency. The growth and sophistication of quantitative models for reinsurance pricing and underwriting have increased the comfort level of hedge fund managers in evaluating investments in the reinsurance market. The widespread entry of hedge funds into the reinsurance market is also beneficial to insurance market efficiency by spreading insurance underwriting risk to a broader investment community.

One of the initial vehicles developed for use by hedge funds to invest in the reinsurance market is collateralized reinsurance. Collateralized reinsurance can be viewed as a hybrid of traditional reinsurance and CAT bonds and often viewed has potentially lower transactions costs than CAT bonds. Because such structures are arranged privately, they also avoid the registration and issuance costs characterizing public securities or 144A securities offerings.

The structure of a collateralized reinsurance vehicle is diagrammed in Figure 7.1. Hedge funds can take on reinsurance risk by forming a “transformer vehicle,” which is usually a small un-rated class 3 Bermuda reinsurer. The hedge fund fully collateralizes the reinsurer by setting up a funded collateral trust account. This part of the process is very similar to the trust account formed to hold funds raised by issuing CAT bonds. The ceding insurer purchases reinsurance from the class 3 Bermuda reinsurer, with the reinsurer’s promise to pay collateralized by the trust. The cedant pays premiums to the reinsurer, which provide the basis for the hedge fund’s profits from the transaction. An advantage of collateralized reinsurance over CAT bonds is that the reinsurance structure can be used for several transactions over a period of time, whereas the CAT bond is usually executed through a single-purpose vehicle. One potential disadvantage to the hedge fund is the length of time the reinsurer must be kept open in order to allow for loss

development. This may be a barrier to using collateralized reinsurers for casualty (liability) risks but is a lesser disadvantage for quicker-settling lines such as property catastrophe coverage.

Sidecars date back to at least 2002 but became much more prominent following the 2005 hurricane season (A.M. Best Company 2006a). Sidecars are special purpose vehicles formed by insurance and reinsurance companies to provide additional capacity to write reinsurance, usually for property catastrophes and marine risks. Sidecars are usually off-balance sheet, formed to write specific types of reinsurance such as property catastrophe quota share or excess of loss from a specified ceding reinsurer, and generally have limited lifetimes, often five years. Most sidecars are capitalized by private investors such as hedge funds. The sidecars receive premiums for the reinsurance underwritten and are liable to pay claims under the terms of the reinsurance contracts. In addition to providing capacity, sidecars also enable the sponsoring reinsurer to move some of its risks off-balance sheet, thus improving leverage.

The sidecar structure is diagrammed in Figure 7.2. The sidecar is formed by a ceding reinsurer, and all of its risk-bearing activities are typically confined to this specific reinsurer. The sidecar is usually owned by a holding company, and the holding company raises capital for the sidecar by issuing equity and debt, although often sidecars are exclusively equity financed. If debt securities are issued, a tiered structure can be used, similar to that of an asset-backed security, to appeal to lenders with differing appetites for risk. Private equity, hedge funds, insurers, and reinsurers usually provide the capital for the typical sidecar. The capital raised by the sidecar is held in a collateral trust for the benefit of the ceding reinsurer. The cedant then enters into a reinsurance contract with the sidecar, which often represents a quota share agreement. The transaction enables the reinsurer to expand its capacity to write additional reinsurance. The ceding reinsurer can earn profits on the transaction through a ceding commission and sometimes also a profit commission. In comparison with issuing debt or equity



securities, the sidecar does not affect the issuing reinsurer's capital structure, and thus sidecars may reduce regulatory costs and enhance the issuer's financial rating. Nearly all sidecars to date have been established in Bermuda, because of Bermuda's favorable regulatory and tax systems.

The sidecars formed using capital raised following Katrina, Rita, and Wilma are shown in Table 7.5. Also shown are the 2005 start-up reinsurers in Bermuda (the Class of 2005), and the earlier reinsurers formed in Bermuda post-Hurricane Andrew and post-9/11 (the Classes of 1993 and 2001). Table 7.5 shows that \$8.4 billion in new equity capital was raised following Hurricanes Katrina, Rita, and Wilma by eleven start-up reinsurers, and another \$4.3 billion was raised by sixteen new sidecars. Ten start-up companies comprise the Class of 2001, accounting for \$8.5 billion in new capital; and ten new start-ups were also founded following Hurricane Andrew, totaling \$4.8 billion in new equity. Clearly, Bermuda has long been the focus of capital formation for the reinsurance market, and the capital issuance activity has accelerated over time and become significantly more creative.

The substantial new equity raised post-Katrina and the development of innovative investment vehicles such as collateralized reinsurance and sidecars are signs that the reinsurance market has become more sophisticated, developing the ability to raise substantial amounts of new capital very quickly. Moreover, the pricing discipline provided by sophisticated investors such as private equity firms, investment banks, and hedge funds has the potential to dampen the amplitude of underwriting cycles and to enhance insurance market stability and capacity.

## **8. Stock Price Analysis**

For those companies that are publicly traded, further analysis can be conducted based on their stock prices. The analysis begins by comparing publicly traded Bermuda insurers' stock price performance with reinsurers in general, U.S. property-liability insurers, and the Standard & Poor's 500 stock index. An event study analysis is then conducted of the stock price performance

of Bermudian, European, and U.S. insurers during the 2004 and 2005 hurricane seasons.

### **Bermuda Insurers' Stock Price Performance**

The stock price indices for publicly traded Bermuda insurers is compared to the SNL reinsurance index, the SNL U.S. property-casualty (P&C) insurance index, and the Standard & Poor's (S&P) 500 stock price index in Figure 8.1. The period covered is 12/31/1991 to 6/30/2006. The analysis is based on publicly traded U.S. insurers. The lists of firms included in the three insurance stock price indices are given in Appendix Tables D.1, D.2, and D.3.

The results indicate that the traded Bermuda insurers outperformed the SNL P&C index and the S&P 500 stock index for the period as a whole. However, the Bermuda insurers on average did not perform as well as the SNL reinsurance price index, which includes several of the Bermuda insurers but is heavily weighted on American International Group and Berkshire Hathaway (Appendix D.2). The most heavily weighted insurers in the Bermuda insurance index are ACE, XL Capital, Everest Re, and AXIS Capital (Appendix D.1).

The performance of individual publicly traded Bermuda insurers is shown in Figure 8.2. This figure covers the period 1/2/1997 through 12/11/2006, primarily because the number of Bermuda companies with traded stocks drops off significantly prior to that time. The top performing Bermuda company for the period as a whole among those included in the figure was Renaissance Re, which had returns averaging 18.6% per year. The next two best performing stocks were Everest Re and Arch Capital, which returned 13.8% and 13.7%, respectively, for the period. ACE earned 11.4% for the period. The worst performing firm was PXRE Group, which had an average annual return of -15.5%.

An event study was also conducted to measure the response of insurers in various jurisdictions to the losses caused by the 2004 and 2005 hurricanes that primarily struck the U.S. The idea behind an event study is that looking at raw stock returns surrounding an event is

potentially misleading because it does not control for market movements at the same time unrelated to the event under analysis. To control for market movements, I conducted a standard event study analysis of the 2004 and 2005 hurricane seasons.

The standard event study methodology begins by estimating the so-called *market model*. The market model is estimated for each individual stock included in the study by conducting a regression analysis with the return on the stock as the dependent variable and the market return as the independent variable or regressor. The market model is specified as follows (see MacKinlay, 1997):

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \quad (1)$$

where  $R_{jt}$  = the return on jth stock on day t;

$R_{mt}$  = the CRSP equally weighted stock index of returns including dividends, as a proxy for the market index;

$\alpha_j$  and  $\beta_j$  = ordinary least squares regression parameters for stock j, representing the idiosyncratic return and beta coefficient of stock j, respectively;

$\varepsilon_{jt}$  = residual for stock j on day t, iid through time t and meets the assumption of jointly multivariate normal across stocks, with  $E(\varepsilon_{jt}) = 0$ ,  $VAR(\varepsilon_{jt}) = \sigma_{\varepsilon_j}^2$ .

The coefficients  $\alpha_j$  and  $\beta_j$  are estimated for each stock j in the sample using pre-event returns for a 150 trading day period (starting from 31 days before the announcement day).

To eliminate the influence of the market return and determine the impact of the event on stock returns, the *abnormal returns* are computed. The abnormal return on day t in the event window (e.g., if t is within the window  $\tau_1$  to  $\tau_2$ ) for stock j is defined as:

$$AR_{jt} = R_{jt} - \hat{\alpha}_j - \hat{\beta}_j R_{mt} \quad (2)$$

That is, the abnormal return is the difference between the stock's actual return and the return that is predicted by the market model for the same day. To measure the impact of the event over a

period of time, the *cumulative abnormal returns* (CAR) are obtained by aggregating abnormal returns through time. The equation for the CAR is as follows:

$$CAR_j(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} AR_{jt} \quad (3)$$

The cumulative abnormal return measures the overall impact of the event during the *event window*, which covers the period beginning  $\tau_1$  days prior to the event and ending  $\tau_2$  days following the event. The event day is labeled day 0. The window begins several days before the event to capture any leakage of information that may occur prior to the event, and the event window extends beyond the event day to cover the market's subsequent reaction to the event. The market is likely to continue to react following the event day as additional information becomes available about the impact of the event.

For events such as hurricanes, leakage prior to the event may occur because when a hurricane is formed it is not initially clear whether or where it will make landfall. As more information becomes available about the storm track, the market may react if it becomes more probable that the storm will make landfall in an area where it is likely to cause substantial monetary damages. Likewise, the market is likely to continue to react following the storm's landfall as information is gradually released about the extent of the damages caused by the storm.

To test the overall impact of the events, we aggregate abnormal returns both through time and across securities. The value we report is the average CAR ( $\overline{CAR}$ ) across all N securities over the event window.

$$\overline{CAR}(\tau_1, \tau_2) = \frac{1}{N} \sum_{j=1}^N CAR_j(\tau_1, \tau_2) \quad (6)$$

To analyze the 2004 and 2005 hurricane seasons, data were obtained on publicly traded Bermudian and U.S. stocks from the University of Chicago's Center for Research on Securities

Prices (CRSP) database, and data on European insurance stocks were obtained from Thomson Financial's Datastream database. For Bermudian and U.S. stocks, the overall CRSP market index, including New York Stock Exchange (NYSE), American Exchange (AMEX), and Nasdaq stocks, was used to represent the market index in the market model; and the country-specific market indices from Datastream were used for European stocks.

The results of the analysis of the 2004 hurricane season are shown in Figure 8.3. In the figure, day 0 is the date of landfall of Hurricane Charley, August 11, 2004. The chart shows abnormal returns for the period beginning 10 days before day 0 and extending for 42 days thereafter. The last of the four major events covered by the event window is Hurricane Jean, which ended following day 34.

The results in Figure 8.3 show that U.S. and European firms were hit very hard by the 2004 storms. By day 42, U.S. stocks had lost 3% of their value due to storm losses, and European stocks had lost 4% of value, i.e., investors in these insurers would have seen the market values of their stocks decline by 3% in the U.S. and 4% in Europe, a substantial loss in such a short period of time. Compared to the U.S. and European insurers, Bermuda firms weathered the 2004 storms relatively well. The Bermuda stocks hit bottom on day 15, the day prior to Hurricane Ivan's making landfall, with a loss of about 3% of value. However, by the end of the window, the Bermuda firms had recovered most of this loss, ending the period with a loss slightly greater than 1%. Thus, at least in terms of their stock prices, Bermuda insurers were not as hard hit by the 2004 hurricanes than European or U.S. insurers.

Bermuda insurers were hit much harder by the 2005 hurricanes. The results are shown in Figure 8.4. In this figure, day 0 is the day Hurricane Katrina made landfall, August 24, 2005. The event window begins 10 days before day 0 and extends 80 days thereafter. The last major event was Hurricane Wilma, which ended on day 42. The market value losses of Bermuda

insurers bottomed out at about 14% on day 45 and recovered somewhat to post a 9% net loss by day 80. By contrast, European and U.S. firms sustained much less damage as a result of the 2005 hurricanes. By day 80, U.S. firms actually registered a positive 5% abnormal return, while the Europeans lost only about 2% of their market value.

It is difficult to explain why the Bermuda firms' stock prices responded much more negatively to the 2005 hurricanes. Obviously, the 2005 losses were generally worse than those of 2004, but U.S. insurers actually gained value in comparison with the market model predictions following the hurricanes. Gains in value following loss events have been found in previous studies, including analyses of Hurricane Andrew and the 9/11 terrorist attacks (see Cummins and Lewis 2004). The usual explanation is that the publicity surrounding a major loss event can increase the demand for insurance and may make it easier for insurers to obtain approval for rate increases in regulated states. Thus, the 2005 storms seemed to have been "good news" in terms of stock market values for U.S. insurers and "bad news" for Bermuda insurers.

Other research provides some clues regarding the adverse impact on the Bermudians. Guy Carpenter (2006b) analyzes the 2005 storm losses as a percentage of beginning-of-year equity for 18 large Bermuda insurers and found losses greater than 100% of equity for PXRe and more than 60% of equity for Montpelier Re and IPC Holdings. The 2005 storm losses were about 40% of equity for about 5 of the 18 firms and losses were at least 10% of equity even for insurers with the lowest losses proportional to equity (ACE and White Mountain). Also recall from Figure 6.x that Bermuda firms paid nearly as much of the Katrina, Wilma, and Rita losses as U.S. insurers, which have a much larger total capital base. Thus, the stock market does not seem to have over-reacted to the 2005 storm losses in terms of the Bermuda firms' stock returns. The market value loss may, in fact, have been cushioned somewhat by the insurance demand effect discussed above. In any event, except for PXRe, the damage done by the 2005 storms

does not seem to have been permanent, and Bermuda insurers had no difficulty in raising additional capital to replace their lost underwriting capacity.

Guy Carpenter (2006b) also sheds light on the differential impact on the Bermudians between the 2004 and 2005 hurricane seasons. The overall loss ratio for the large Bermuda firms tracked by Guy Carpenter was about 68% in 2004, including about 10% for catastrophe claims. By contrast, the Bermudian's loss ratio was above 90% in 2005, including 30.7% for catastrophes. Thus, as has been shown in many prior studies, the stock market provides an accurate gauge of the economic impact of large loss events.

The overall conclusion is that Bermuda's commercial property-casualty firms play a very important role in providing catastrophe reinsurance to the U.S. market and have deliberately adopted a risk appetite that places them in the position of taking significant losses due to U.S. catastrophes. By contrast, the stock price results may suggest that the Europeans have withdrawn somewhat from the U.S. market. It remains to be seen whether the 2005 storms have any significant implications for the exposure management by Bermuda insurers or whether the Bermudians will continue to undertake the degree of underwriting exposure to U.S. catastrophes that they have written in the past.

## **9. Analysis of Economic Efficiency**

This section reports on the economic efficiency of the world's insurers and reinsurers by country of domicile. The objective is to determine whether there are significant efficiency differences across countries in insurance and reinsurance markets. The results are based on data reported in Standard & Poor's ClassicDirect ratings database and Standard & Poor's Eurothesys database on European insurers. The analysis is conducted by industry segment based on the industry categorizations assigned by Standard & Poor's. Sufficient data were present to analyze two of the Standard & Poor's industry segments – reinsurance and property-casualty insurance.

The analysis was conducted by year from 1995 through 2005 and focuses on insurers and reinsurers domiciled in Bermuda, various European countries (including Germany, Switzerland, and the U.K.), and the United States.

It is not clear whether to expect efficiency differences among insurers domiciled in different countries. One potential source of efficiency differences is provided by differential regulatory costs across jurisdictions. Industry experts often argue that regulatory costs are relatively high in the United States because of extensive disclosure and reporting requirements and the necessity of dealing with multiple regulatory jurisdictions. European insurers have not been subjected to extensive reporting requirements but until the mid-1990s faced regulatory restrictions on price and product competition that may have degraded efficiency. Bermuda is generally viewed as a relatively lightly regulated jurisdiction. Hence, if regulatory costs differ significantly by country of domicile, these cost differences may cause corresponding efficiency differences among insurers. Differences in taxation by jurisdiction can have similar effects on economic efficiency. Any type of taxation can have an impact on efficiency. E.g., in addition to income taxation, social insurance taxes, premium taxes, payroll taxes, and other types of tax levies can affect the costs of doing business in a jurisdiction. And, it is well-known that tax systems differ significantly across the countries included in this study.

Another potential source of efficiency differences are variations in the costs of doing business across jurisdictions. Because insurance is a labor intensive industry, differences in wage and salary levels across jurisdictions could lead to variations in efficiency. Heterogeneity in the level of labor quality, i.e., the skill and expertise of the work force, also can affect efficiency. Insurers also make significant expenditures on technology and financial capital. However, the markets for computer and communications technologies and the capital markets have become increasingly globalized, such that the jurisdiction of domicile may have little



impact on the costs of technology or financial capital. Nevertheless, differences in interest rates and the costs of issuing capital may provide a source of efficiency variation across jurisdictions.

### **Methodology: Frontier Efficiency Analysis**

The methodology utilized here is based on modern frontier efficiency analysis. Modern frontier efficiency analysis measures the efficiency of firms in a given industry by comparing each firm in the industry to efficient frontiers consisting of the dominant or “best practice” firms in the industry.<sup>27</sup> Several types of frontiers can be estimated including production and cost frontiers. A production frontier estimates the minimum quantity of inputs required by best practice firms to produce a given quantity of outputs. The performance of inefficient or non-best-practice firms is then measured relative to the production frontier. Efficiency relative to the production frontier is defined as technical efficiency. If a firm is fully efficient (i.e., if it is a best practice firm operating on the frontier), its efficiency score is 1.0; whereas inefficient firms have efficiency scores between 0 and 1. E.g., if a firm has an technical efficiency score of 0.75, the implication is that it could reduce its input usage by 25% without reducing the quantity of the outputs it produces.

Technical efficiency can be decomposed into pure technical efficiency and scale efficiency. That is, the firm may be technically inefficient either because it does not use the best technology (pure technical inefficiency) or because its scale of operations is sub-optimal (scale inefficiency). The economic ideal in terms of scale efficiency is to achieve constant returns to scale. Firms that have not achieved constant returns to scale are either too small (operating with increasing returns to scale) or too large (operating with decreasing returns to scale), and could reduce the average cost of producing one unit of outputs by growing (for an increasing returns to scale firm) or becoming smaller (for a decreasing returns to scale firm). Technical efficiency is the product of pure technical and scale efficiency, i.e., technical efficiency can be obtained by multiplying a firm’s scale efficiency

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<sup>27</sup> Although the concept of the efficient frontier is similar to that of the mean-variance efficient frontier in the analysis of investments, the data utilized and the estimation techniques applied here are significantly different from those of the efficient investment frontier.

score by its pure technical efficiency score.

The other important type of frontier used in this analysis is the cost frontier. The type of efficiency measured relative to the cost frontier is cost efficiency. A firm's cost efficiency score indicates whether it has been successful in minimizing costs, given the quantity of output it produces. Best practice firms (i.e., firms operating on the cost frontier) have cost efficiency scores of 1.0, and inefficient (non-frontier) firms have cost efficiencies between 0 and 1. In order to be fully cost efficiency, the firm must be technically efficient (have a technical efficiency score of 1.0) and also have full allocative efficiency. Allocative efficiency measures the firm's success in choosing cost minimizing combinations of inputs. That is, a firm can be inefficient because it is technically inefficient or because it uses a suboptimal combination of inputs in its production process.

The methodology used to estimate production and cost frontiers for purposes of this report is a mathematical programming technique known as data envelopment analysis (DEA). DEA uses linear programming techniques to identify a set of firms that dominate any given firm in terms of either the production or cost frontier. I.e., the technique searches for a set of firms that could produce the given firm's outputs using less inputs (the technical frontier) or could produce the firm's outputs with lower costs (the cost frontier). If no such dominating set exists, the firm is identified as a best practice or self-efficient firm and is given an efficiency score of 1.0.<sup>28</sup>

In order to estimate technical and cost efficiency using DEA, it is necessary to specify the outputs, inputs, and input prices characterizing the firms in the industry. Measuring outputs for financial firms such as banks and insurers can be challenging because many of the outputs produced (such as risk diversification) are intangible. The definitions of outputs utilized in preparing this report are based on the value-added approach, which is the most widely accepted approach in the professional literature on efficiency estimation for financial institutions (see Berger and Humphrey 1992). The value-added approach identifies outputs as firm activities that contribute

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<sup>28</sup> For further discussion of efficiency estimation, see Cummins and Weiss (2000).

significantly to the firm's value-added, as judged using operating cost allocations.

Insurers provide three principal services:

- **Intermediation.** Insurers raise funds by issuing debt contracts known as insurance policies and then invest the funds in financial assets. For property-casualty insurers and reinsurers, intermediation is a by product of a firm's risk-pooling and risk-bearing activities rather than being a primary output. Nevertheless, the intermediation function involves substantial amounts of money and produces significant value-added.
- **Risk-pooling and risk-bearing.** Insurance provides a mechanism through which consumers and businesses exposed to losses can engage in risk reduction through pooling. The types of risks that can be diversified through insurance include all types of risks to property, the risks of liability lawsuits, the risk of work injuries, and risks of death and morbidity. The actuarial, underwriting, and related expenses incurred in risk pooling are important components of value added in the insurance industry. Insurers also add value by holding equity capital to bear the residual risk of the pool.
- **"Real" financial services relating to insured losses.** Insurers provide a variety of real services for policyholders including risk management, exposure management, and financial planning. By contracting with insurers to provide these services, policyholders can take advantage of insurers' extensive risk management experience to reduce the costs associated with managing insurable risks.

Because insurance outputs are largely intangible, typically researchers attempt to identify output proxies, i.e., variables which are highly correlated with the intangible outputs produced by insurers. In this study, two output proxies are utilized – total invested assets and net losses incurred. Total invested assets are used because the quantity of invested assets is highly correlated with financial intermediation services. Net losses incurred are used because losses tend to be highly correlated with the quantity of risk-pooling, risk-bearing, and risk-management services provided by insurers.<sup>29</sup> Some researchers have used premiums as a proxy for insurance output, but this is incorrect because premiums equal price multiplied by output quantity rather than output quantity. Losses incurred provide a quantity measure that is not contaminated by differences in prices across insurers. It is sometimes argued that using losses to measure output can distort efficiency

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<sup>29</sup> It would be preferable to utilize losses incurred by line of business, as has been done in most efficiency studies of U.S. insurers (Cummins and Weiss, 2000). However, data limitations in the Standard & Poor's databases used for this study prevented a by-line analysis. Consequently, the results need to be interpreted carefully as applying to overall company efficiency and not fully capturing differences in line of business mix across firms.

measurement because losses fluctuate from year to year due to catastrophes and other random shocks. However, an important part of the risk-pooling and risk-transfer output is the insurer's ability to pay claims even in years when losses are higher than expected. To the extent that an insurer pays out more money due to catastrophes and other loss shocks, output is higher in the sense that policyholders have received a significant service from the insurance company which is larger than would have been received in a typical loss year.

Three inputs are identified for the DEA analysis, consistent with prior research on insurance industry efficiency – home office labor and other underwriting expenses, sales labor, and financial equity capital. The price of the home office labor and other underwriting expenses input is the consumer price index (CPI) for the insurer's country of domicile, and the price of sales labor is the country wage index for the country of domicile. The quantity of the home office labor and other underwriting expense input is defined as an insurer's total expenditures for these items divided by the country-specific CPI, and the quantity of sales labor is the insurer's commission expenditures divided by the country-specific wage index. The price of equity capital is the overall return on the stock market for the stock exchange of the insurer's country of domicile. The quantity of equity capital is the adjusted shareholders' funds variable from the Standard & Poor's databases. The data for inputs and input prices were obtained from the Global Insight database. The base year for the analysis is 2000, meaning that all monetary valued variables are deflated to 2000 constant monetary units using the country-specific CPIs.

### **Efficiency Analysis: Results**

The efficiency results for reinsurers and property-casualty insurers, respectively, are presented in Tables 9.1 and 9.2. Six types of efficiencies are shown in the tables. The discussion emphasizes the most important broad-based measure of efficiency – cost efficiency. However, also shown in the tables is the decomposition of cost efficiency into technical and allocative efficiency and the decomposition of technical efficiency into scale and pure technical efficiency. The sixth type

of efficiency shown in the table, non-increasing returns to scale technical efficiency, is used to determine whether each insurer is operating with increasing, constant, or decreasing returns to scale and is shown primarily for completeness. The number of observations by country is shown in Table 9.3, and the efficiencies for all Bermuda reinsurers and property-casualty insurers included in the study are shown in Appendix Tables E.1 and E.2, respectively.

The discussion first considers the efficiency scores for reinsurers shown in Table 9.1. The table shows average scores for all countries included in the analysis, but some of the averages (such as those for Spain, Italy, and the Netherlands) are based on very small samples and hence should not be overemphasized. To assist in evaluating the relative efficiency by country, cost efficiency is graphed in Figure 9.1 for the principal reinsurance jurisdictions. The average efficiency scores for Ireland, which has been increasing in importance as a financial center, are also shown in the figure.

The first conclusion to be drawn from Figure 9.1 and Table 9.1 is that cost efficiencies tend to be highly correlated over time in the countries shown in the figure. Efficiencies tended to be high in 1999 and tended to be generally low in 1997 and 2002. In evaluating the potential causes of these efficiency changes, it is helpful to keep in mind that high efficiency implies either an increase in output production with a smaller than proportionate increase in inputs or a reduction in inputs with a smaller than proportionate decrease in outputs. The average efficiency scores also are affected by the changes in the dispersion of efficiency across firms over time. Efficiencies could be relatively high for all firms in a “good year,” when underwriting returns are favorable because the mistakes made by inefficient firms are not as obvious as they would be during more difficult years.

The second conclusion based on Figure 9.1 (and Table 9.1) is that Bermuda is a relatively cost efficient jurisdiction for the reinsurer sample during several years of the sample period. Bermuda was relatively inefficient from 1995 through 1998, but it was the most efficient jurisdiction in 1999, 2000, 2001, and 2005. This implies that Bermuda reinsurers made relatively high loss payments (output quantity) relative to resource (input) consumption. The relative efficiency could arise from

any of the causes discussed above, including lower regulatory costs, lower taxes, lower labor costs, or relatively high quality labor on the island.

Although Bermuda was a relatively efficient jurisdiction in several individual years and for the period as a whole, the third conclusion based on Figure 9.1 and Table 9.1 is that substantial efficiency differences across jurisdictions do not exist for the principal reinsurance jurisdictions. This tends to support the hypothesis that reinsurance markets are truly global and have been converging over time, such that country of domicile does not provide a substantial competitive advantage.

Cost efficiency decomposes into technical and allocative efficiency, such that a firm's cost efficiency can be obtained by multiplying technical and allocative efficiency.<sup>30</sup> Thus, by looking at technical and allocative efficiency, it is possible to draw some conclusions about the sources of the cost efficiency differences shown in Figure 9.1. Figure 9.2 shows that Bermuda reinsurers tend to be middle of the pack or relatively low in technical efficiency. Germany and Switzerland tend to be the dominant countries in most years in terms of technical efficiency. Table 9.1 shows that the technical efficiency leadership of the German and Swiss reinsurers is due primarily to their higher pure technical efficiency scores. In terms of scale efficiency, German and Swiss reinsurers are about average. Leadership in pure technical efficiency implies that the German and Swiss reinsurers tend to be able to produce their outputs on average with less inputs than firms from other jurisdictions. However, this technical leadership is degraded somewhat due to scale inefficiency for the German and Swiss reinsurers. Bermuda firms are slightly below-average in pure technical efficiency and above-average in scale efficiency.

The efficiency picture is completed by looking at allocative efficiency. The allocative efficiencies for the principal reinsurance jurisdictions sizes are graphed in Figure 9.3. For most of the sample period, Bermuda tends to rank either second or third in terms of allocative efficiency.

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<sup>30</sup> Actually, the way the estimation is conducted is to compute technical and cost efficiency and then to obtain allocative efficiency by dividing cost efficiency by technical efficiency, but the product relationship is valid.

Thus, Bermuda firms do an excellent job in selecting cost minimizing input combinations. This is consistent with Bermuda firms being able to react quickly to changing circumstances in terms of reallocating resources among competing uses. For the period as a whole, Bermuda ranks third in allocative efficiency behind the U.K. and the U.S. Hence, the leadership of the German and Swiss reinsurers in terms of pure technical efficiency is further eroded due to allocative inefficiencies.

The discussion now turns to the property-casualty insurance sample. This sample is analyzed separately because the property-casualty insurers are competing in a somewhat different market than the reinsurers and hence may have different characteristics. The property-casualty sample is also somewhat smaller than the reinsurance sample and includes some highly specialized firms.

The results from the property-casualty sample are shown in Table 9.2. The table shows that Bermuda property-casualty insurers are above-average for the period as a whole in terms of cost efficiency, ranking below countries such as Ireland but above other important insurance domiciles, including Germany, Switzerland, the U.K., and the U.S. For the period as a whole, Bermuda ranks above Germany, the U.K., and the U.S. in technical efficiency and above Switzerland and the U.K. in allocative efficiency. Bermuda property-casualty insurers are significantly above-average in scale efficiency but slightly below-average in pure technical efficiency.

The overall conclusions based on the efficiency analysis are the following: (1) Bermuda reinsurers and property-casualty insurers are clearly competitive in terms of economic efficiency when compared to the other leading risk-capital jurisdictions – Germany, Switzerland, the U.K., and the U.S. Many of the other jurisdictions are either based on small samples or consist of insurers primarily focusing on the personal lines and primary markets and hence are not entirely comparable. (2) In terms of overall efficiency, there do not seem to be substantial differences among jurisdictions. This supports the hypothesis that the reinsurance and property-casualty markets are converging towards globalization such that leading firms have some ability to neutralize jurisdictional disadvantages. Nevertheless, for the reasons given throughout this report, Bermuda does have

significant advantages as an insurance domicile. In addition, Bermuda insurers tend to take on higher risk than the typical insurers in many other domiciles and thus play a unique role in the world's insurance and reinsurance markets.

## **10. Conclusions**

The Bermuda market began in 1947 when C.V. Starr chose Bermuda as the headquarters for his American International Company. Insurance development accelerated during the 1960s with the introduction of an innovative risk financing solution for corporations – the captive insurance company. By 1980, Bermuda was by far the world's leading captive domicile and was primarily known for fulfilling this role. However, beginning in the mid-1980s, Bermuda began to play a broader role in the world's insurance and reinsurance markets. The first important wave of Bermuda non-captive insurance company formations began with the formation of ACE and XL in response to the mid-1980s commercial liability insurance crisis in the United States. The ACE-XL model established a pattern in the development of the Bermuda market that continues to the present day.

Bermuda provides many advantages as an insurance domicile. Compared to jurisdictions such as the U.K. and the U.S., Bermuda has a more flexible approach to regulation, whereby close cooperation has developed between the regulator and the insurance industry. Because of this cooperative and flexible regulatory approach, new companies can be formed in a matter of a few weeks in Bermuda, encountering much less regulatory bureaucracy and red-tape than in other jurisdictions. The flexible regulatory approach does not appear to have come at the cost of higher insolvency risk, as the Bermuda market continues to be populated by companies with superior financial strength and stability. Bermuda also provides a relatively attractive tax environment for insurers, in that it levies no income tax. Because of the regulatory and tax flexibility, Bermuda has become the jurisdiction of choice, especially for reinsurers responding



to changing demands for reinsurance from primary jurisdictions such as the U.S. When U.S. insurance market need more high-end risk capital, the capital tends to flow into Bermuda rather than into U.S. start-ups, precisely because of the regulatory and tax costs that such firms would face if they organized in the U.S.

U.S. regulators have recognized their limitations with respect to dealings with captive insurance companies, and many states have greatly streamlined their regulation of captives in recent years. As a result, the U.S. is now the world's leading country in terms of the number of domiciled captives, a position long held by Bermuda. However, no comparable reforms have been introduced for non-captive insurers or reinsurers, and Bermuda retains a significant advantage for insurers that do not need to hold U.S. licenses.

Bermuda also has numerous other advantages as an insurance domicile. It is politically stable and has a sound monetary system and a high sovereign debt rating. Bermuda also has a highly educated work-force and provides a pleasant place to live and work. The island also benefits from "economies of agglomeration" in insurance and reinsurance not only because of the concentration of captive insurers, non-captive insurers, and reinsurers but also because of the professional infrastructure that has been developed in Bermuda over the years. Within approximately a one square mile area of Hamilton one finds world class bankers, lawyers, accountants, actuaries, and risk management professionals. Bermuda's proximity to the New York capital markets and the island's close ties with the United Kingdom also provide key advantages to insurers and reinsurers.

Bermuda has become one of the world's top three jurisdictions in the global reinsurance market, along with the U.S. and Europe, and Bermuda's importance in this regard has accelerated during the past few years. Twelve Bermuda reinsurers appear in the list of the top 40 reinsurers worldwide, the largest number from any jurisdiction. Bermuda is the leading non-U.S. supplier of

reinsurance to U.S. insurers, providing a critically important source of risk capital for the U.S. market. An analysis of the leading U.S. insurers in terms of reinsurance ceded to non-U.S. reinsurers shows that Bermuda is the number one jurisdiction worldwide for cessions by the top U.S. firms in all twelve lines of business included in the study. Thus, Bermuda has gone far beyond its initial role during the 1980s and early-1990s as a source of risk capital for liability insurance and property catastrophes to provide broad-based coverage in many lines of insurance.

New capital has continued to flow into Bermuda on a regular basis and especially in response to large loss events in the U.S. The amount of capital flowing into Bermuda following catastrophes continues to grow, with the amount of capital raised in response to the 2005 hurricane season surpassing the previous record amounts obtained following Hurricane Andrew and the 9/11 2001 terrorist attacks. Bermuda continues to be a source of innovation in raising new capital, with new vehicles such as sidecars and collateralized reinsurance structures providing attractive alternatives to public and private equity issuance. It is clear that the Bermuda market has matured and developed over the years and is now much more efficient and effective at providing new risk capital that at any time in the past. In addition, Bermuda insurers and reinsurers have greatly improved their risk and exposure management techniques as well as their ability to price their products by introducing new quantitative modeling approaches. Thus, the market continues to improve its efficiency and ability to respond to new and emerging risks.

As a result of the capital raising in Bermuda and the reinsurance cessions from U.S. insurers, Bermuda firms have funded a substantial proportion of the catastrophe losses to U.S. properties resulting from recent natural and man-made events. Bermuda reinsurers have been willing to take on the “large loss tail” of the catastrophic loss distribution, with the result that Bermuda firms sustained substantial losses in the market value of their equity capital following the 2005 hurricane season. Thus, Bermuda firms are unafraid to place themselves in the position of taking significant losses from U.S. catastrophes, contributing significantly to the efficiency of U.S. insurance markets.

Bermuda has also expanded to provide reinsurance coverage for the other major jurisdictions worldwide and also provides a domiciliary jurisdiction for firms from Continental Europe, the U.K., Asia, South America, and Africa. Thus, Bermuda has evolved from primarily a domiciliary jurisdiction for captives (pre-1980s), to a reinsurance market primarily for liability insurance and property catastrophe reinsurance (1980s and early 1990s), to a world leader in taking on all types of insurable risks (mid-1990s to the present day).

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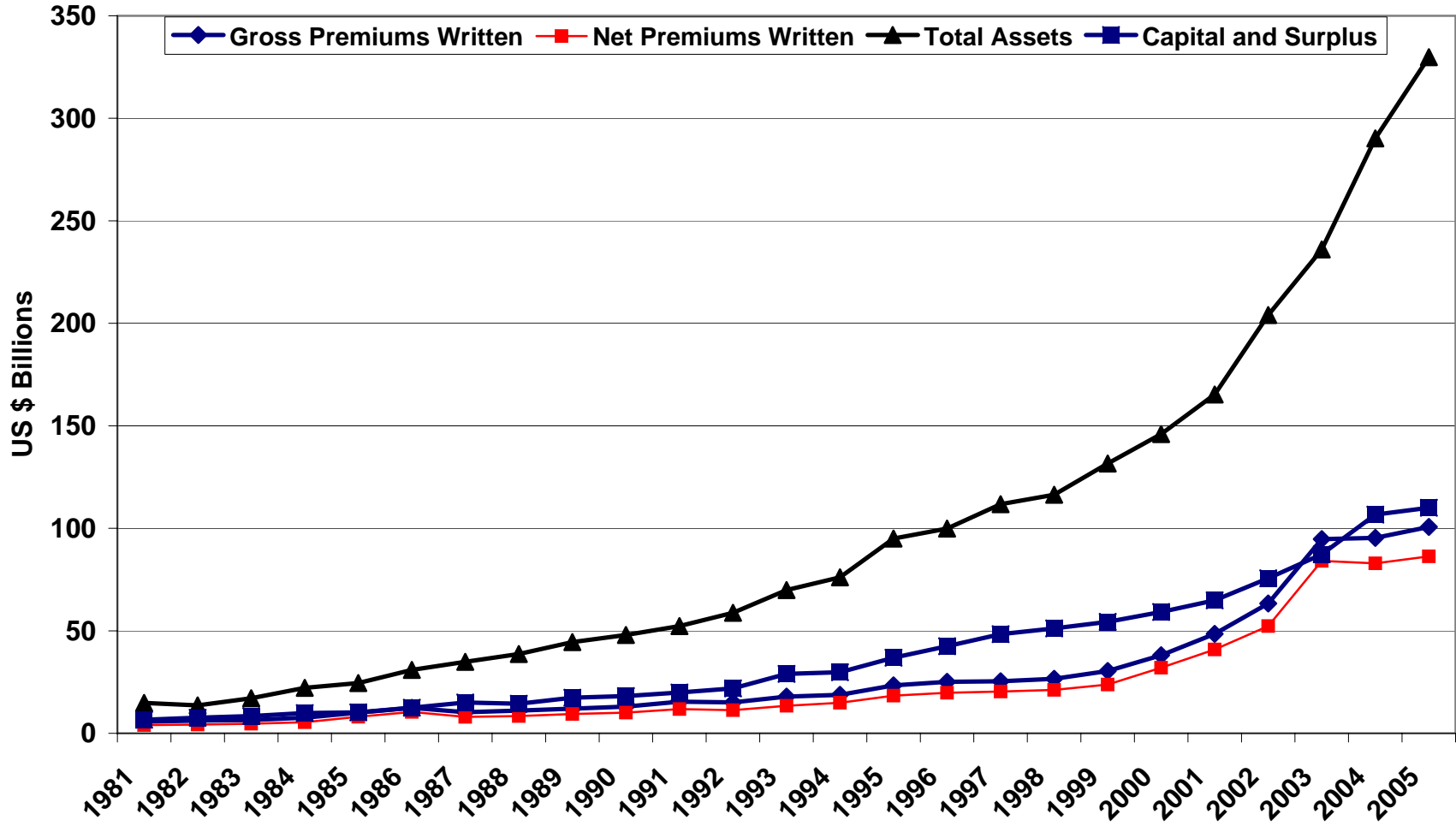
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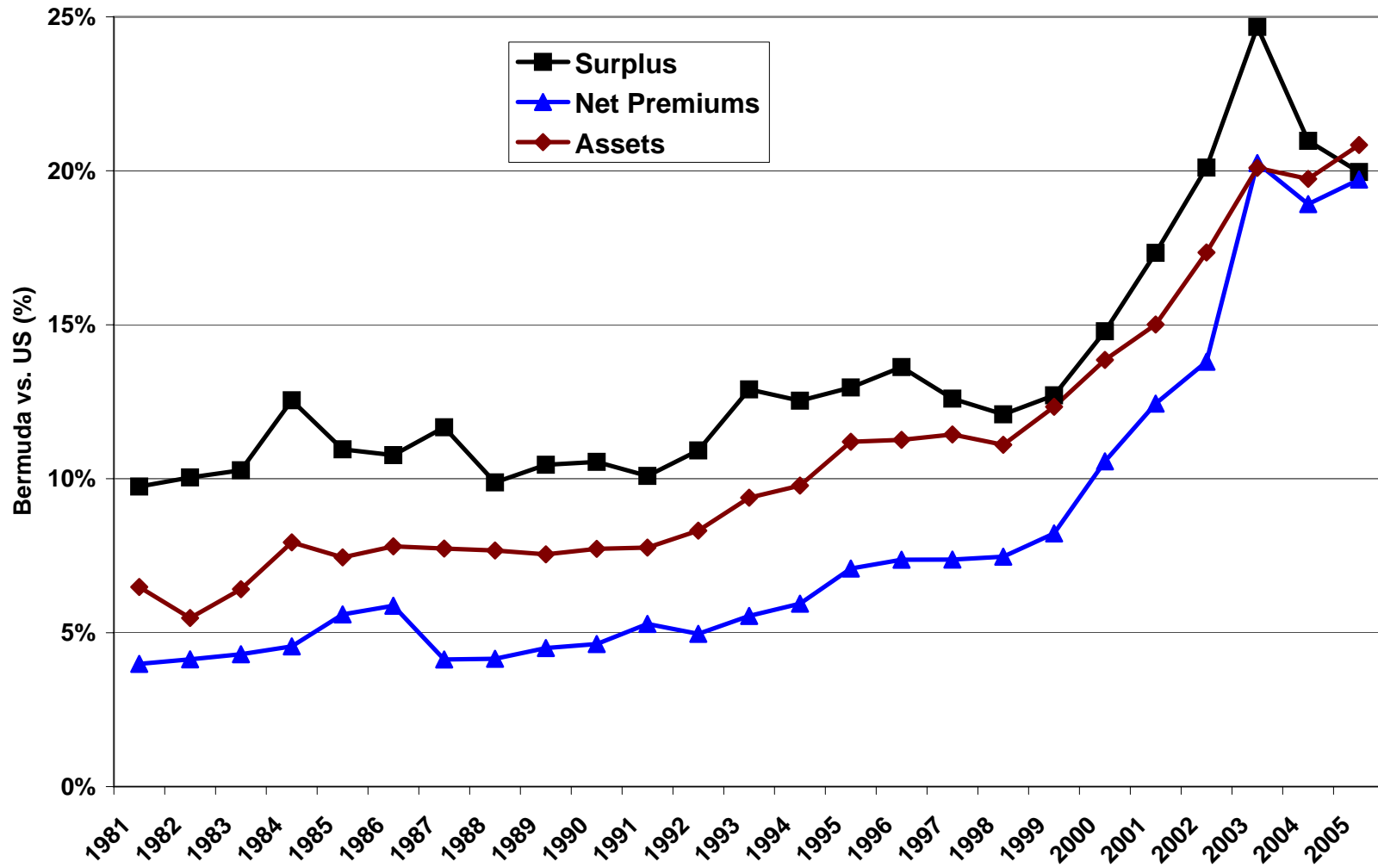
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Figure 5.1: Growth of the Bermuda Insurance Market



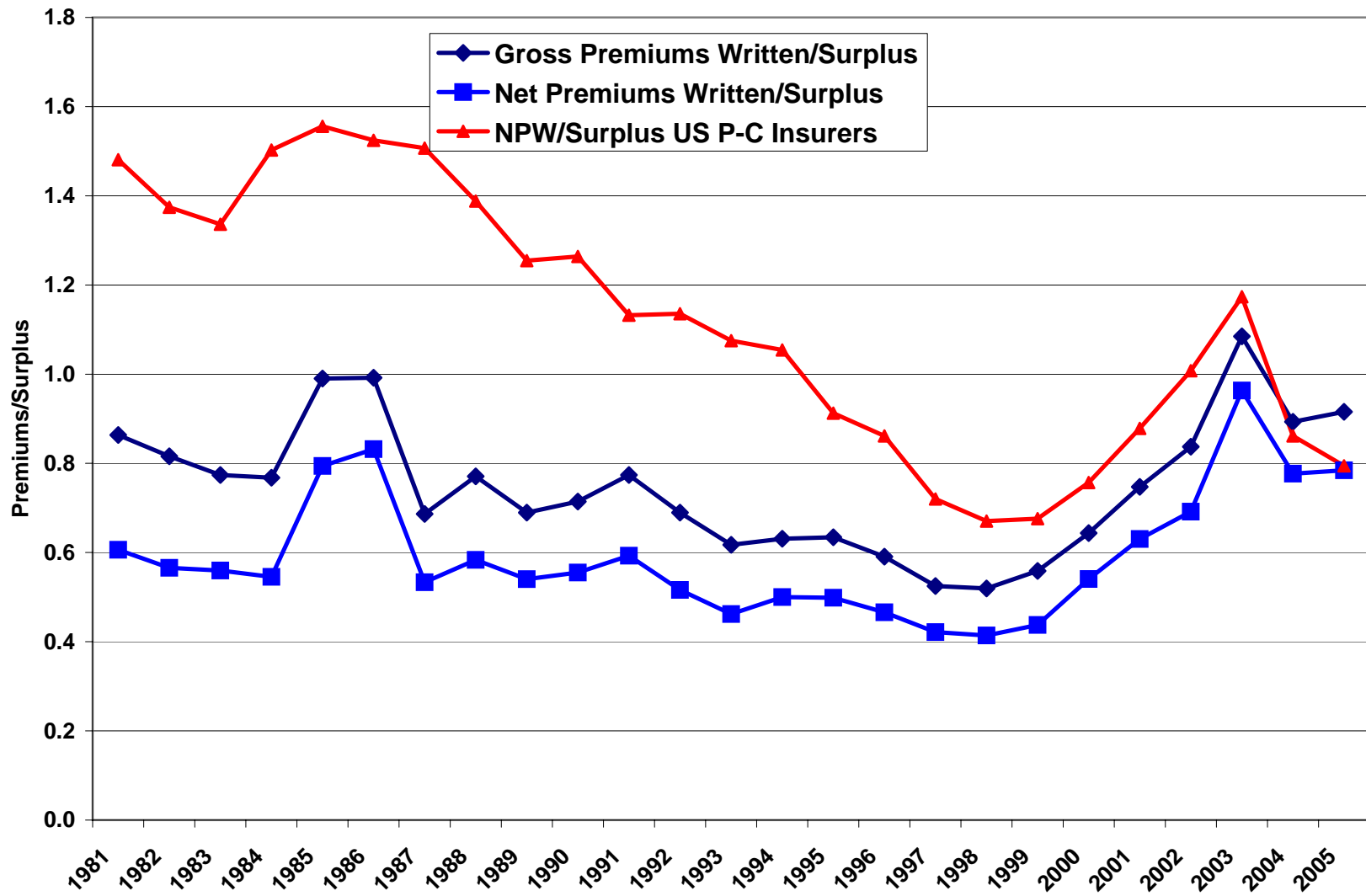
Source: Bermuda Monetary Authority. <http://www.bma.bm/Insurance/Statistics>.

Figure 5.2: Bermuda Market Relative to U.S. Property-Casualty Insurers

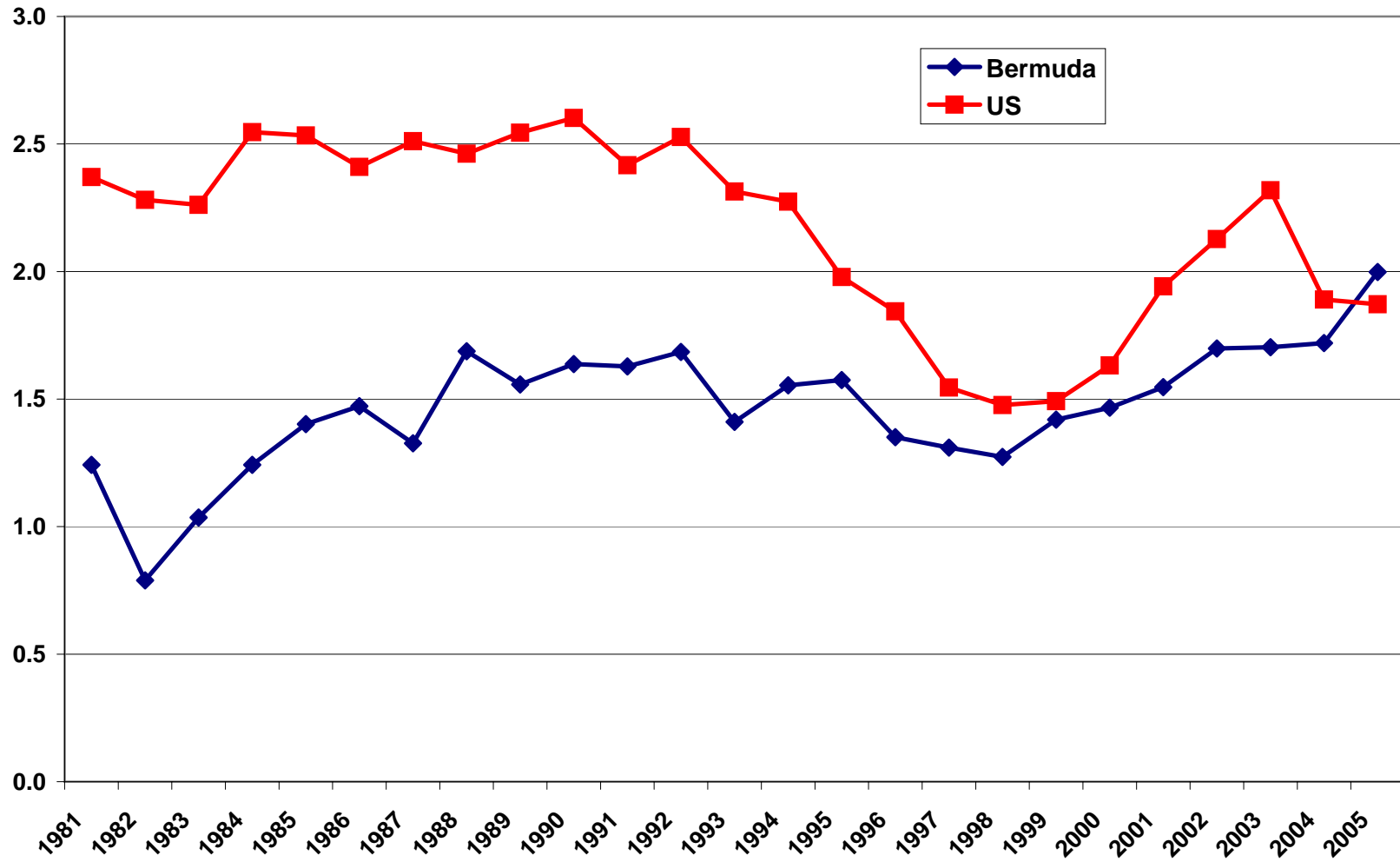


Source: Bermuda Monetary Authority and A.M. Best Company.

Figure 5.3: Bermuda & U.S. Insurers, Overall Market Leverage Ratios

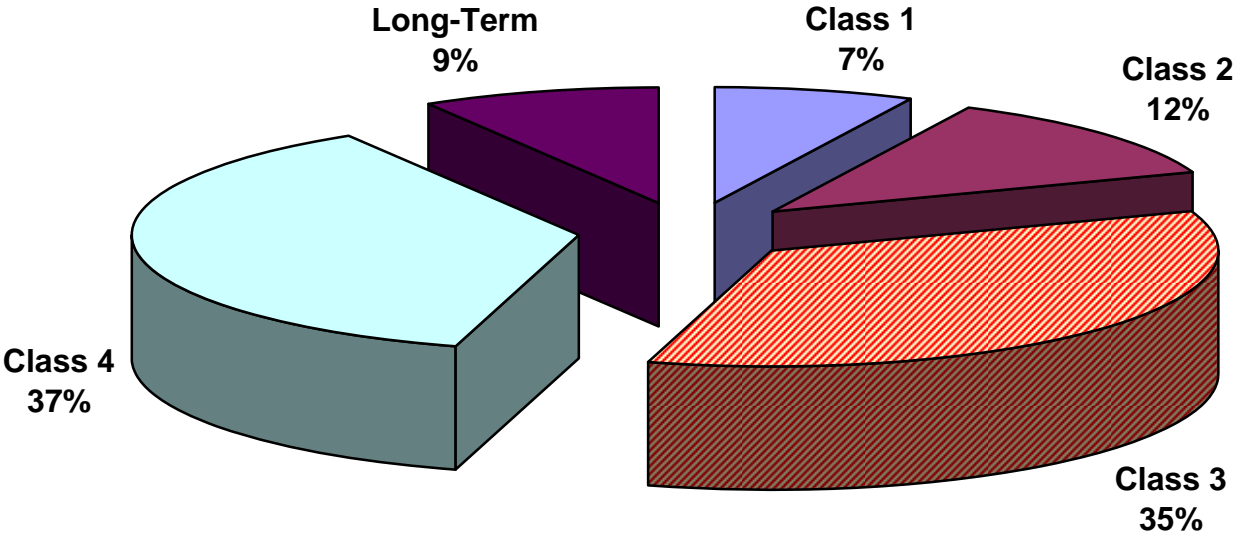


**Figure 5.4: Liabilities-to-Surplus Ratios  
Bermuda and US Property-Liability Insurance Industries**

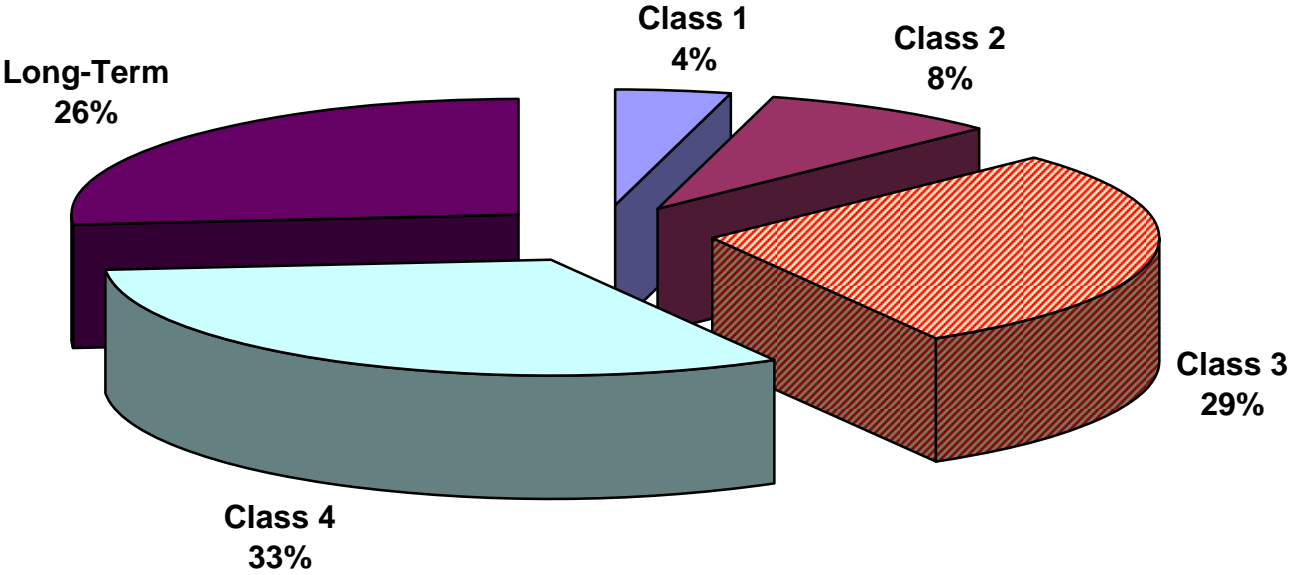


Source: Bermuda Monetary Authority, A.M. Best Company.

**Figure 5.5**  
**Capital and Surplus By Class of Insurer: 2005**



**Figure 5.6**  
**Net Premiums Written By Class of Insurer: 2005**



**Figure 5.7**  
**Assets By Class of Insurer: 2005**

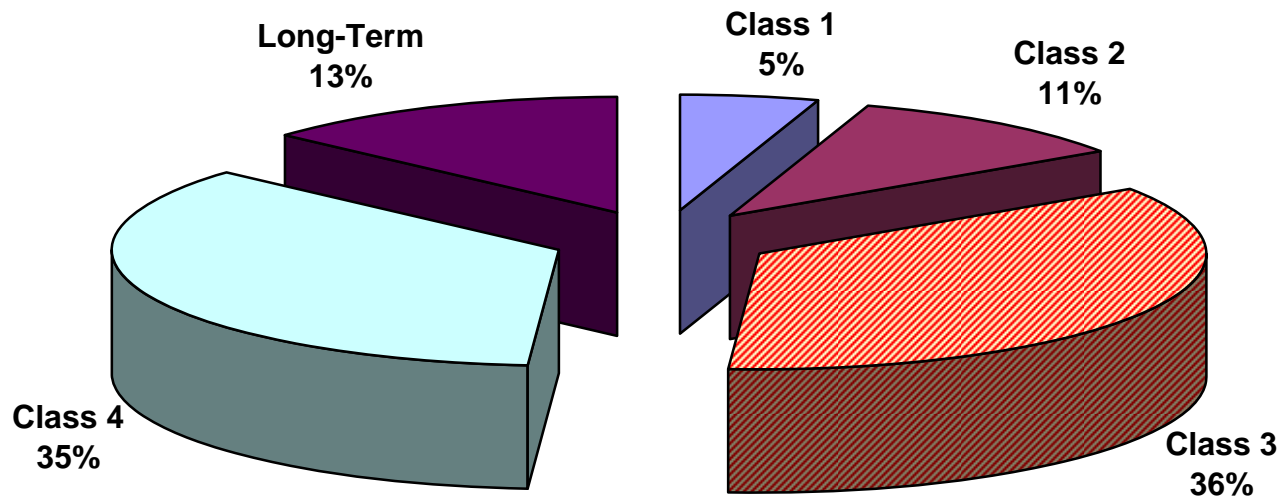




Figure 5.8: Capital & Surplus Distribution By Class Over Time

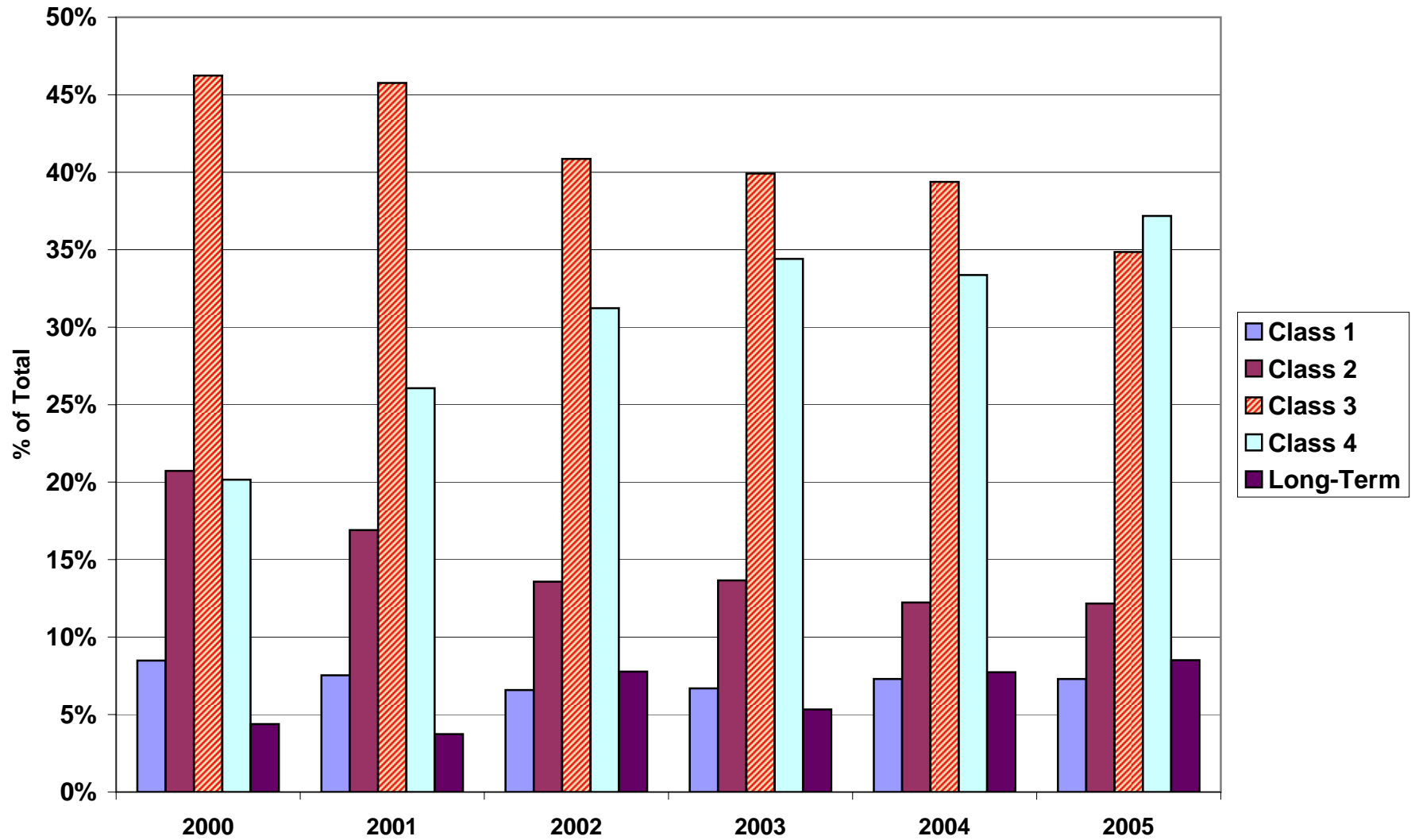


Figure 5.9: Net Premiums Written Distribution By Class Over Time

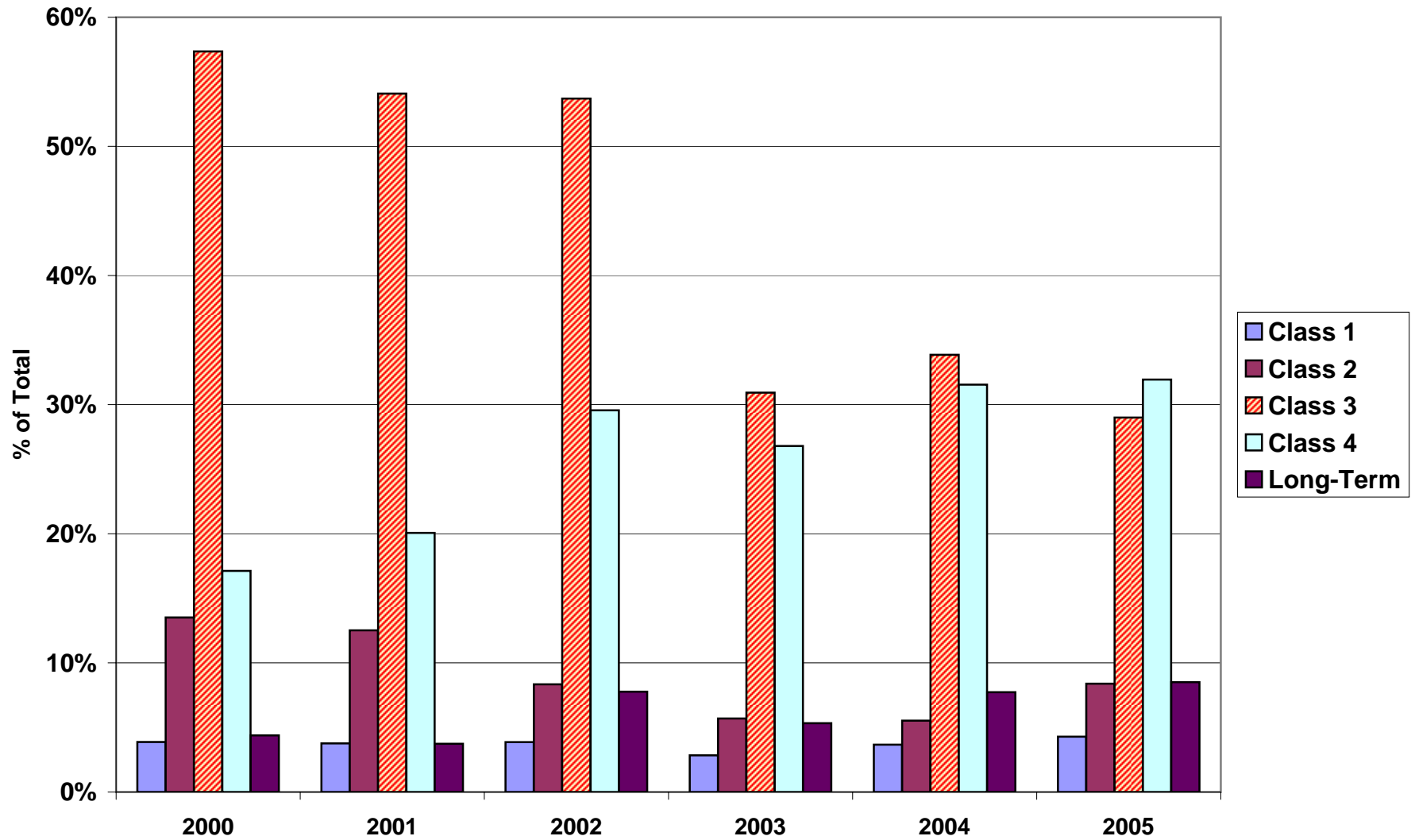
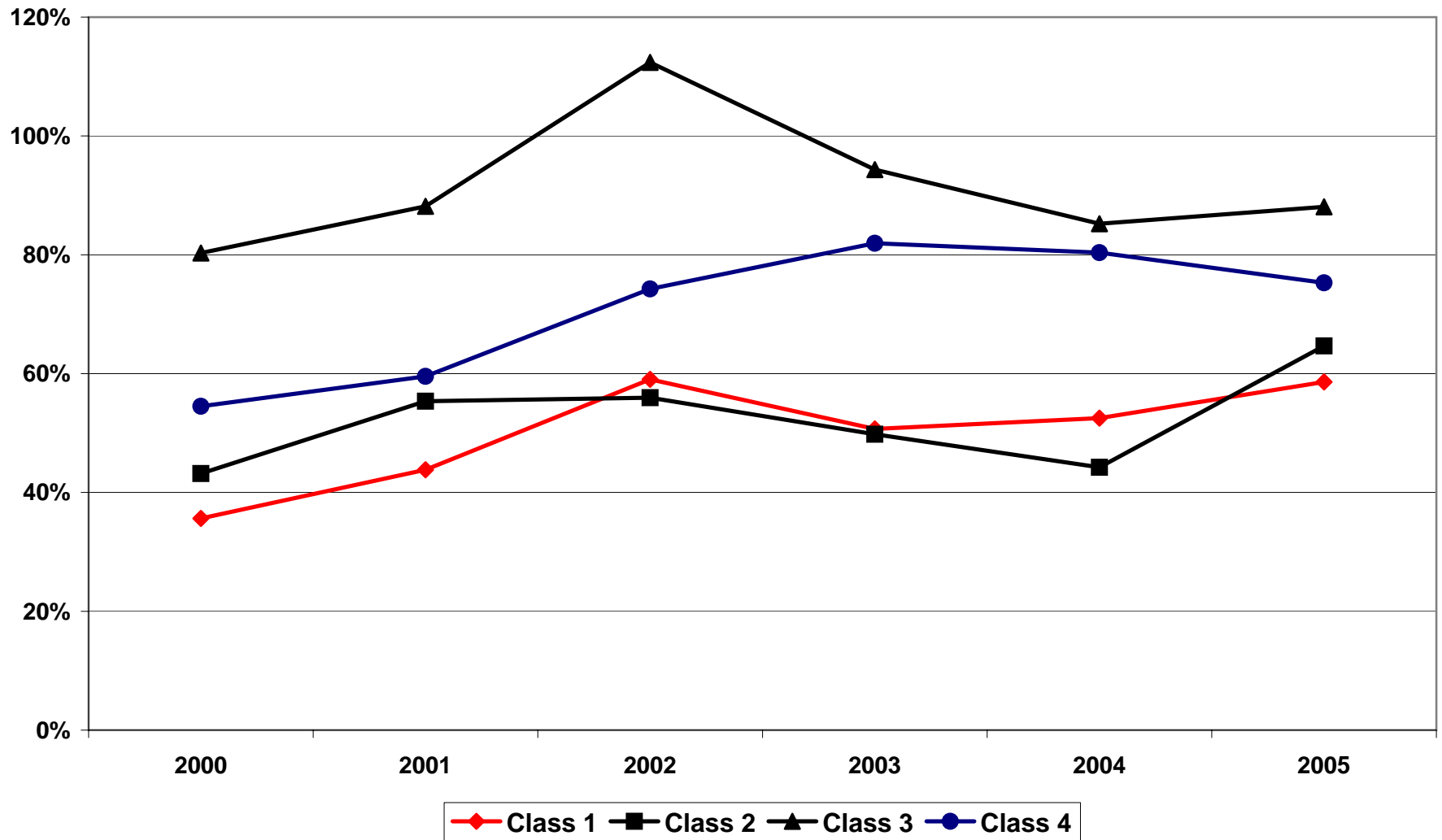
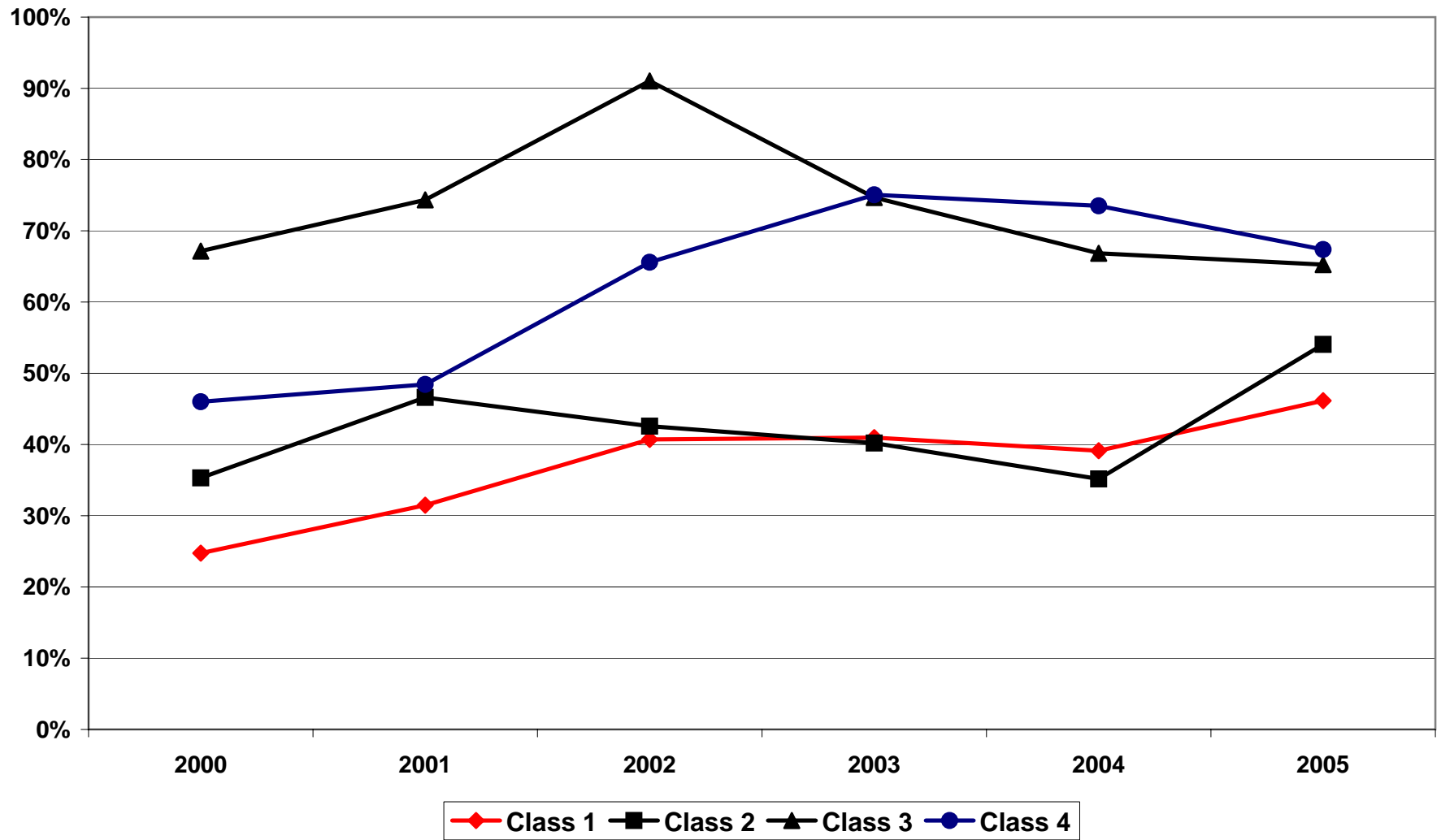


Figure 5.10: Gross Premiums Written-to-Surplus Ratios Over Time By Insurer Class



**Figure 5.11: Net Premiums Written-to-Surplus Ratios  
Over Time By Insurer Class**



**Figure 5.12**  
**Number of Bermuda Companies By Type, December 2005**

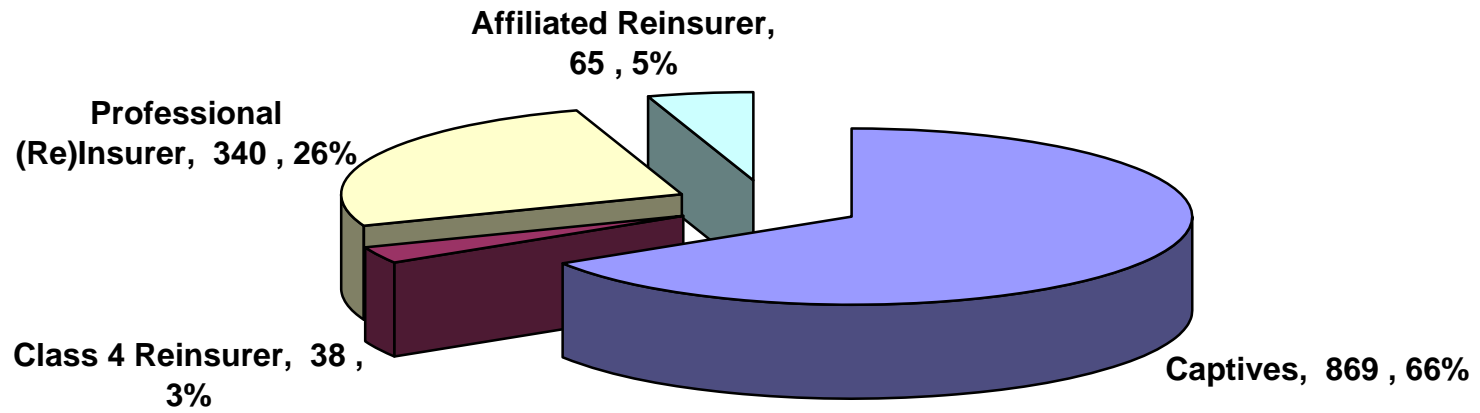


Figure 5.13: Gross Premiums Written By Type Over Time

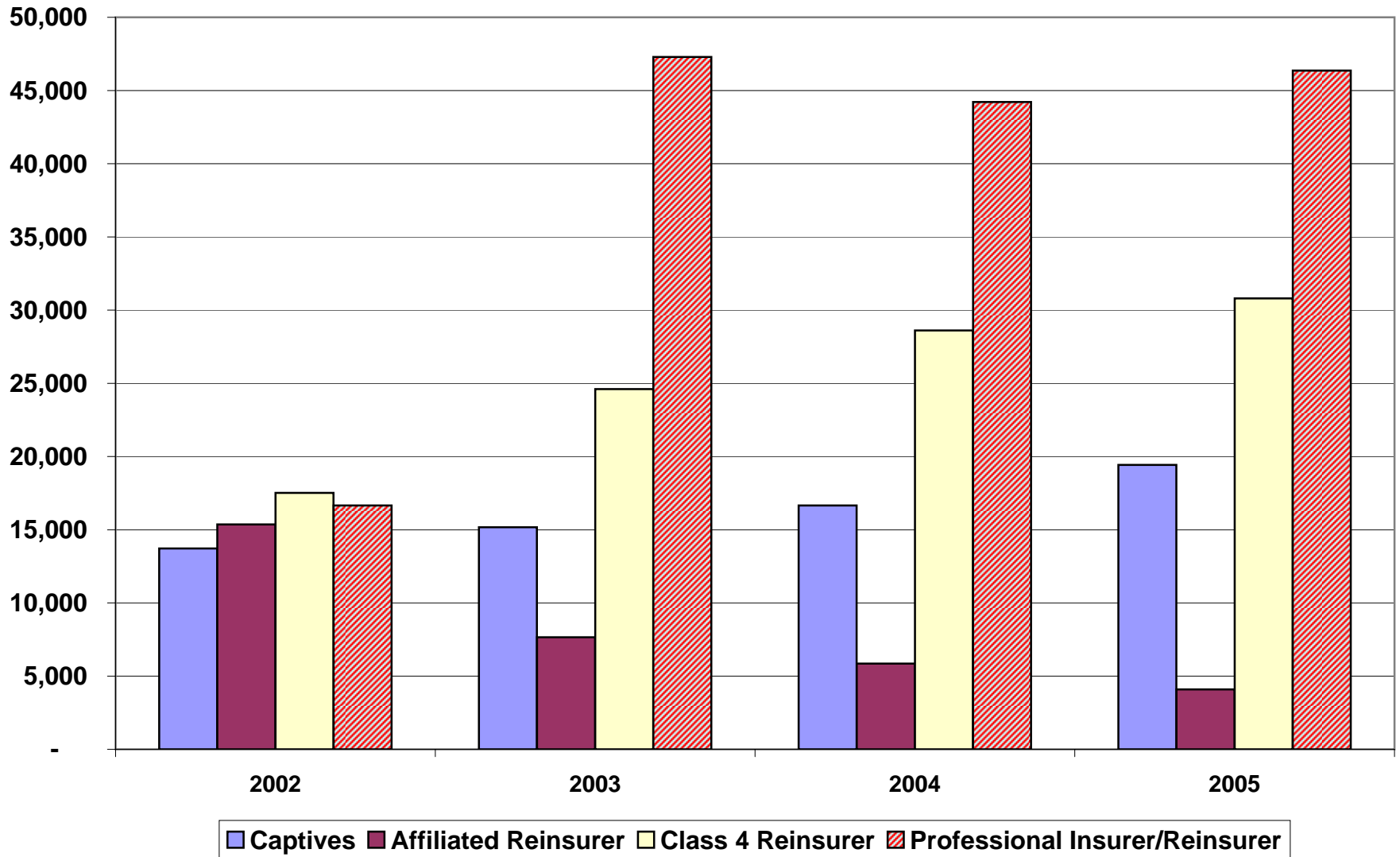
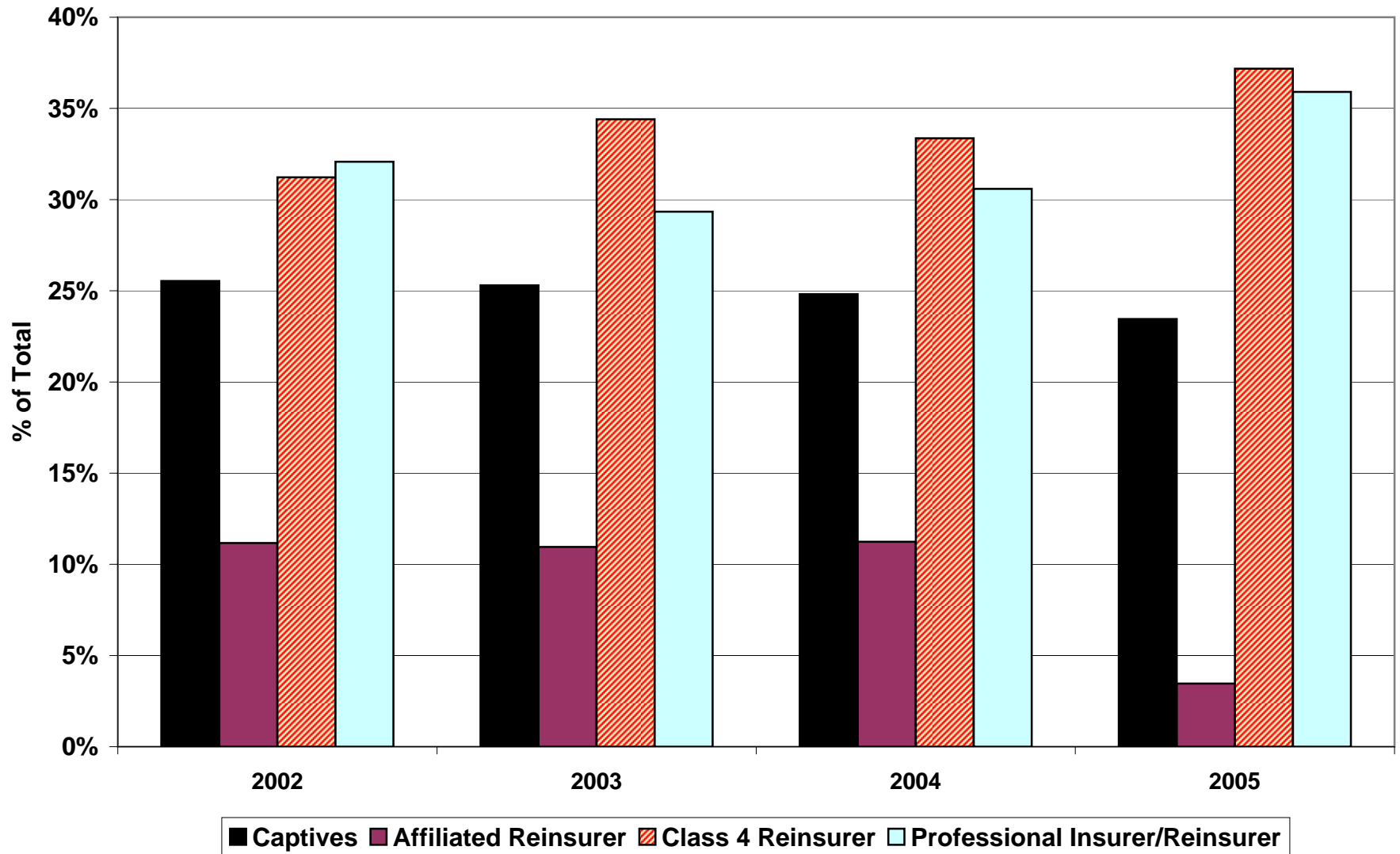


Figure 5.14: Distribution of Capital and Surplus By Firm Type



**Figure 5.15**  
**Number of Bermuda Captive Insurers by Type, December 2005**

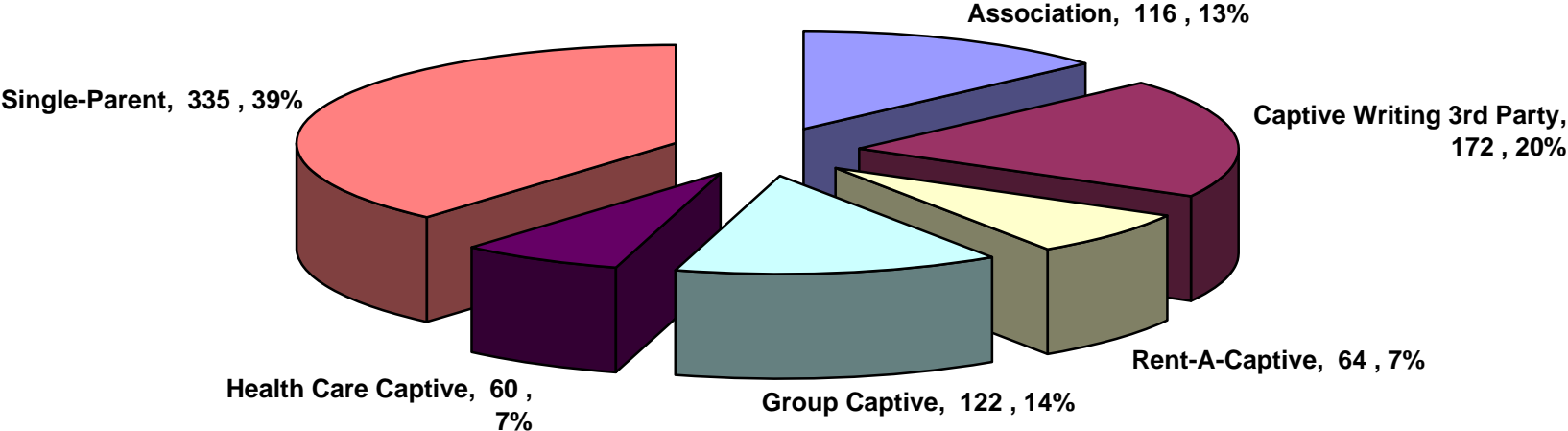
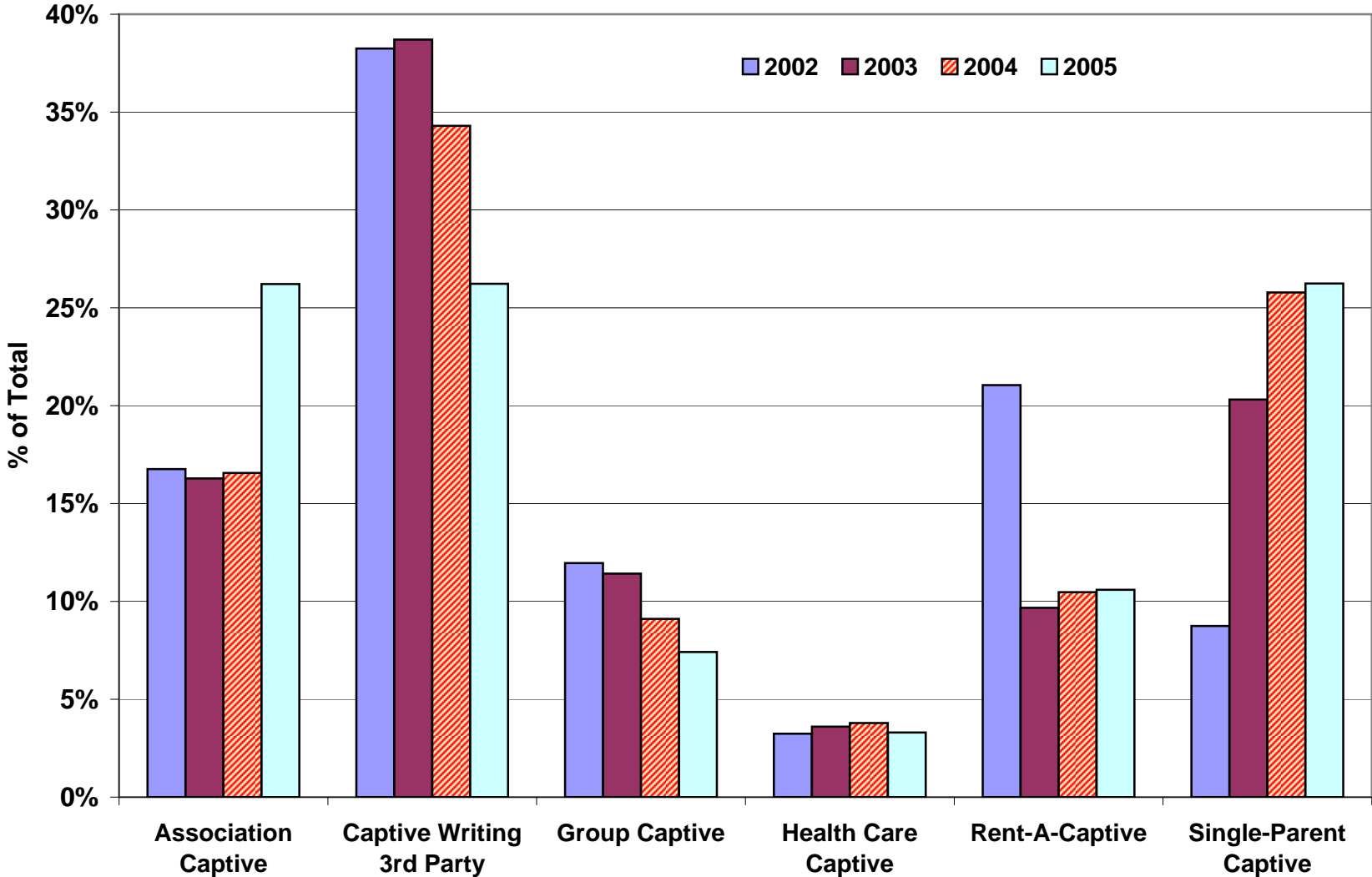
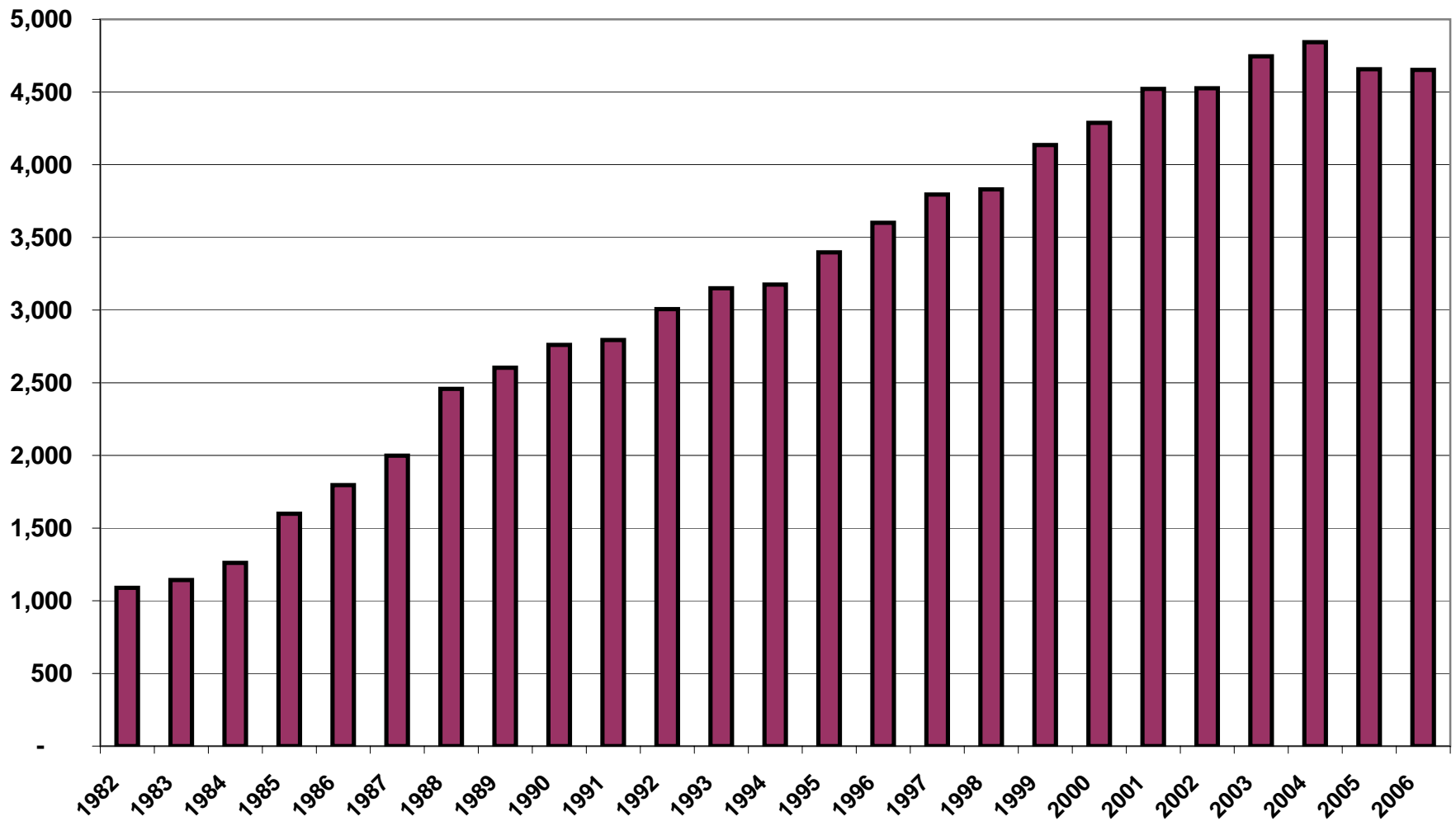




Figure 5.16: Distribution of Gross Premiums Written By Type of Captive

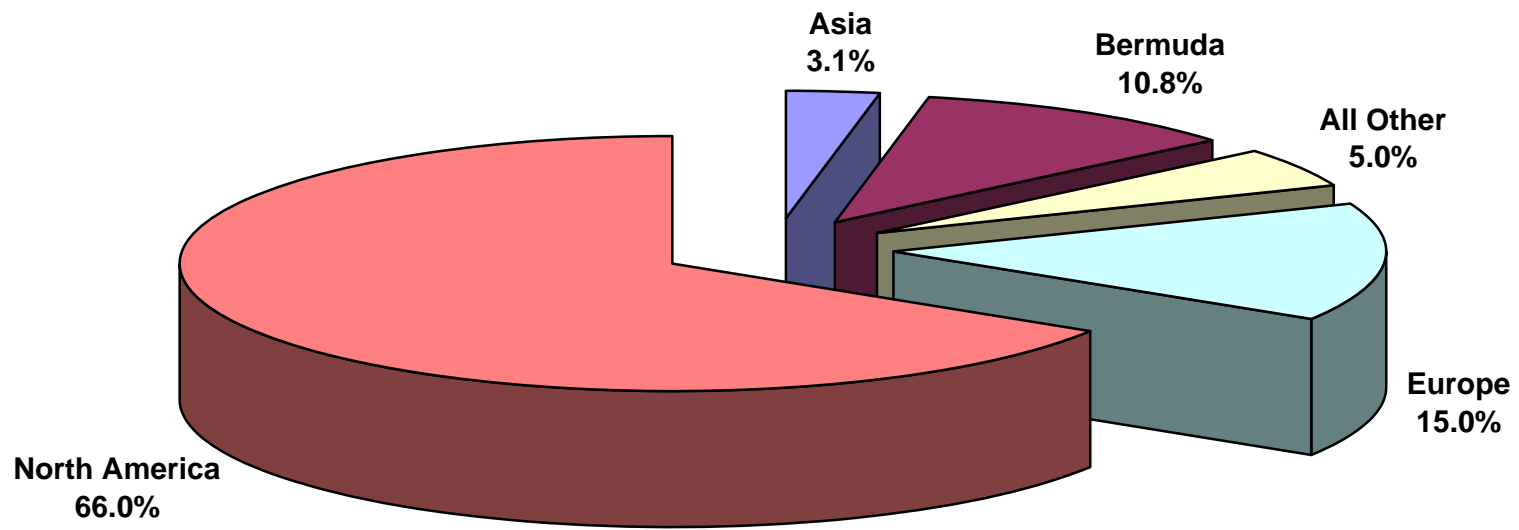


**Figure 5.17: Number of Captives Worldwide: 1982-2006**



Source: A.M. Best Company, Business Insurance.

**Figure 5.18**  
**Number of Bermuda Insurers By Country of Ownership 2005**



**Figure 5.19**  
**Bermuda Insurers' Gross Premiums Written By Country of Ownership: 2005**

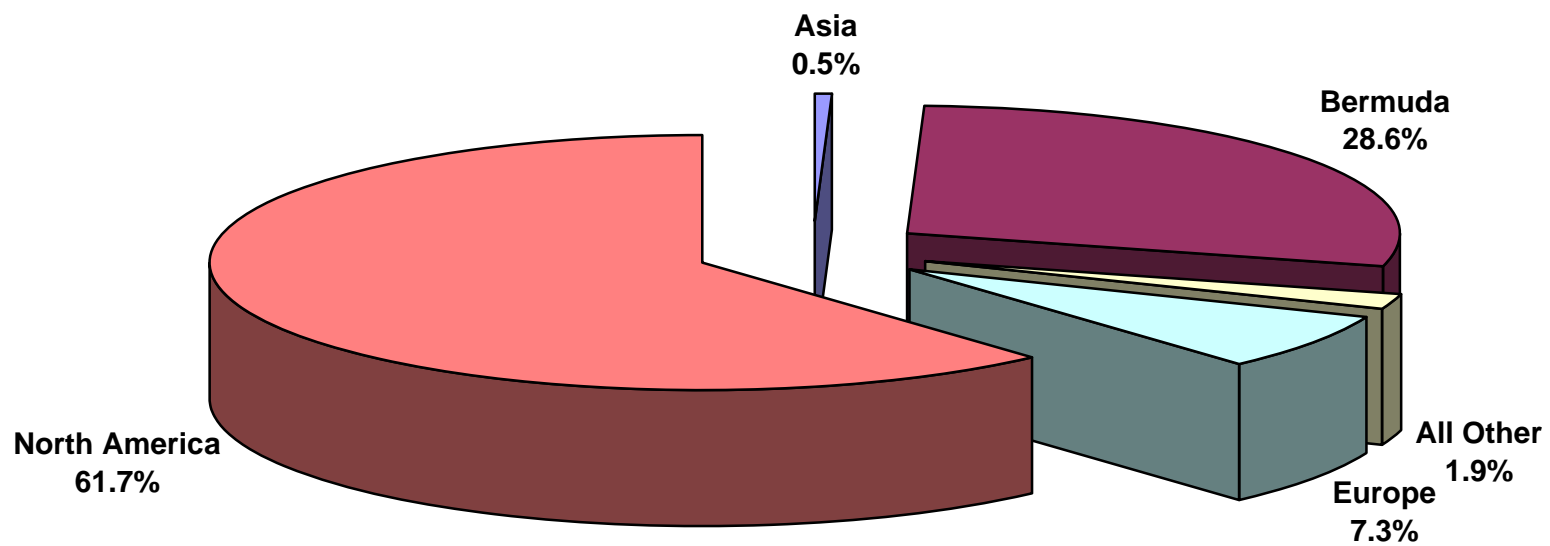
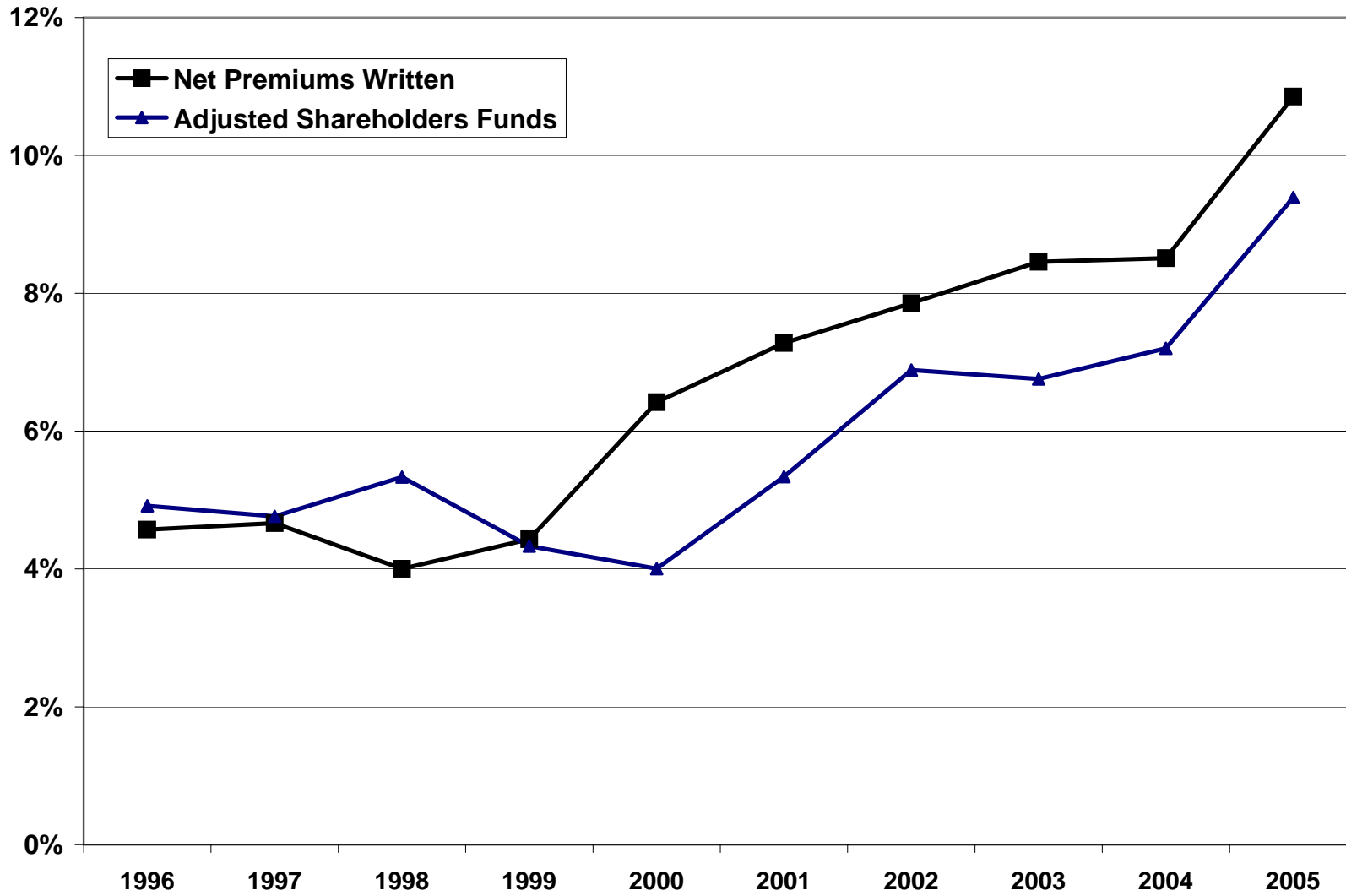
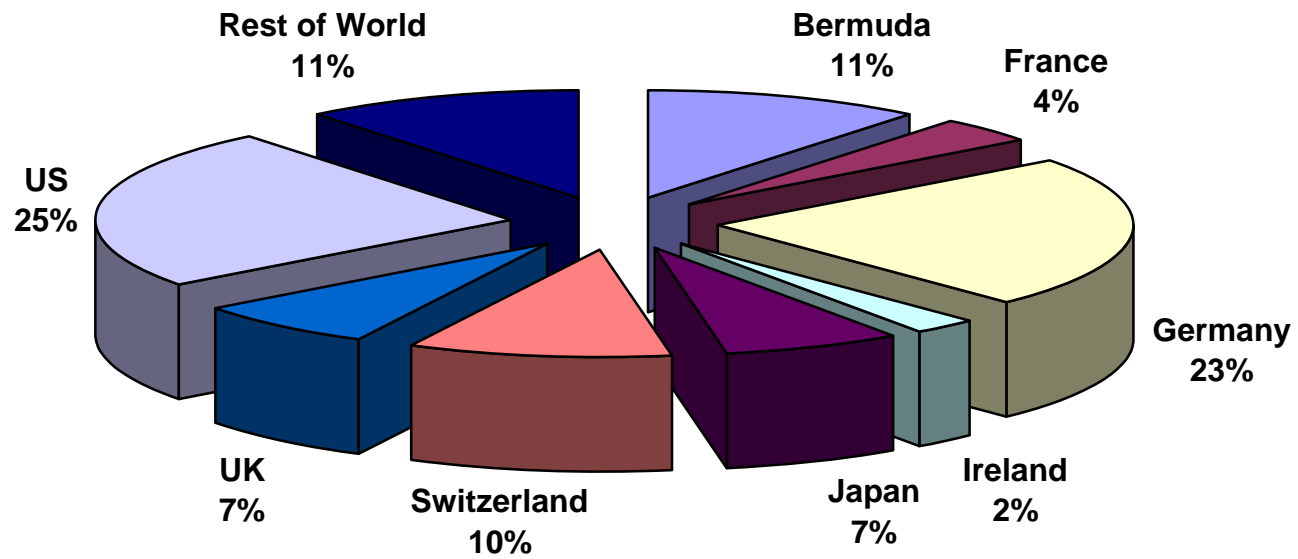


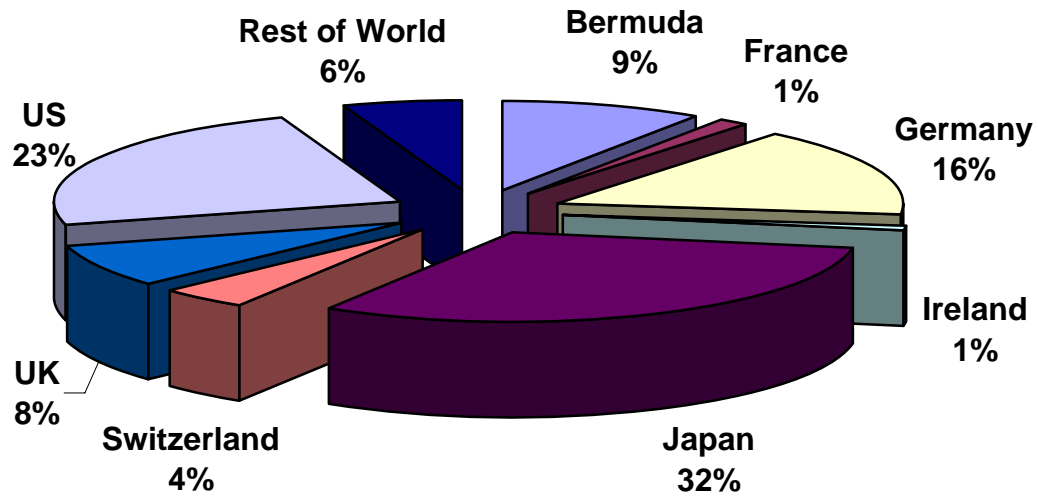
Figure 5.20: Bermuda Percent of World Reinsurance Market



**Figure 5.21**  
**Global Reinsurers: Net Premiums Written, 2005**



**Figure 5.22**  
**Global Reinsurers: Adjusted Shareholders Funds, 2005**



**Figure 5.23**  
**Net Premiums Written By Global Reinsurers, 1996**

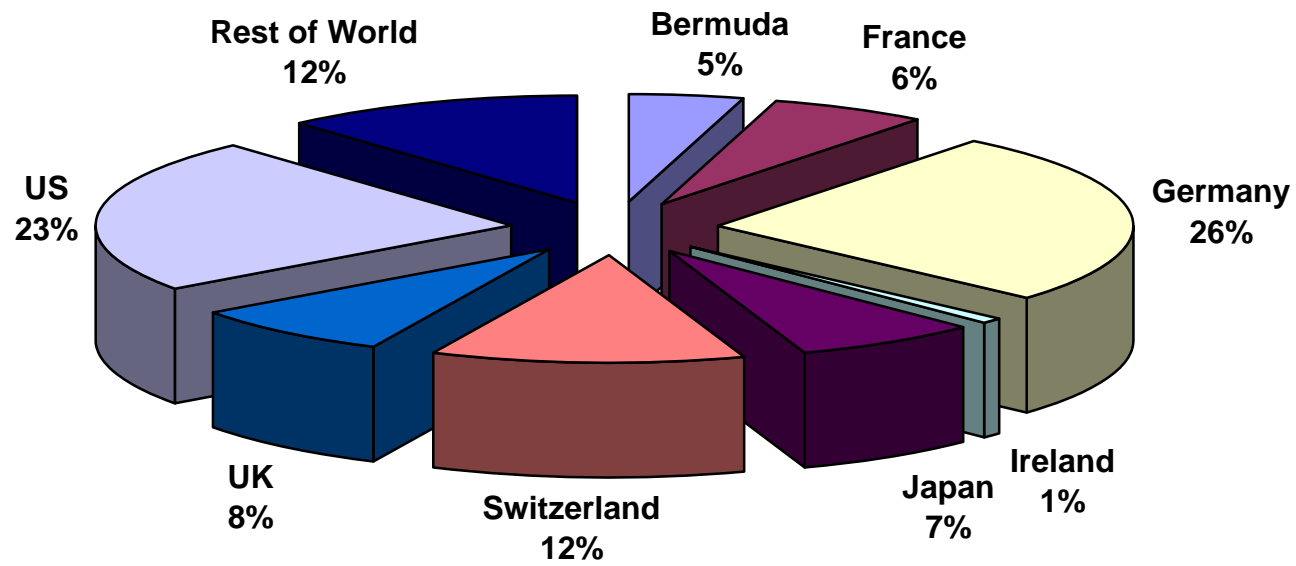




Figure 5.24: Global Reinsurers: Combined Ratios, 1996-2005

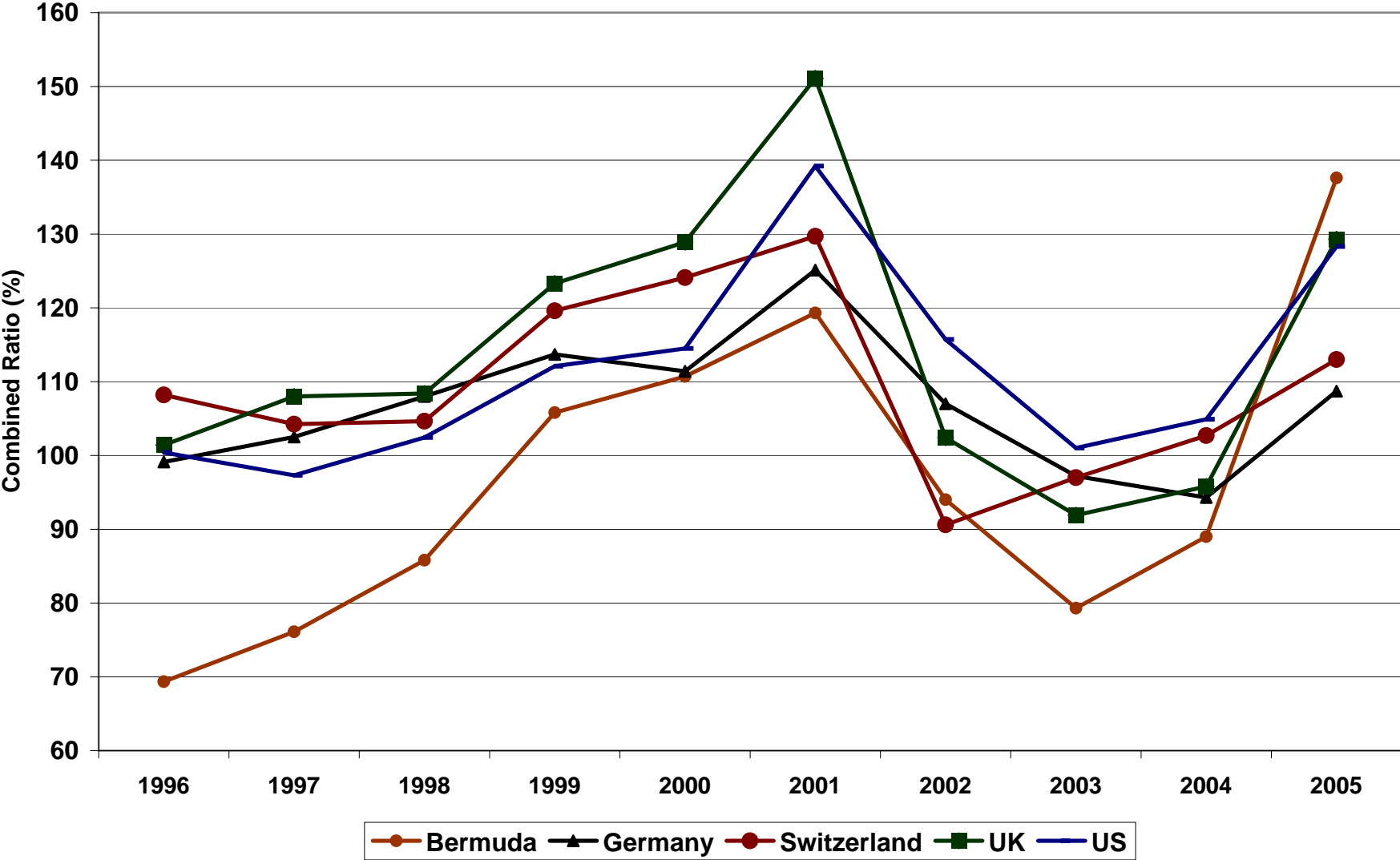
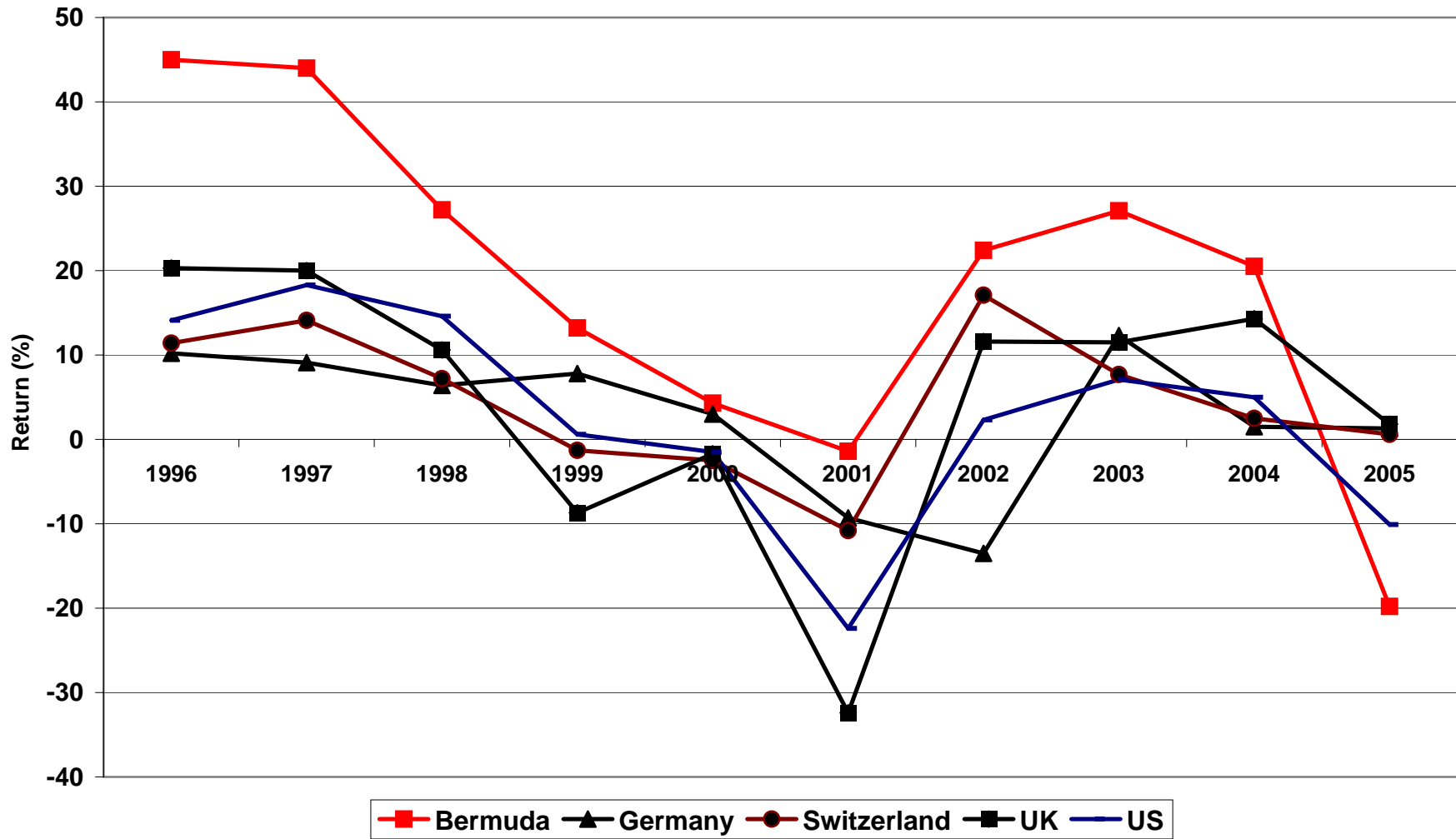
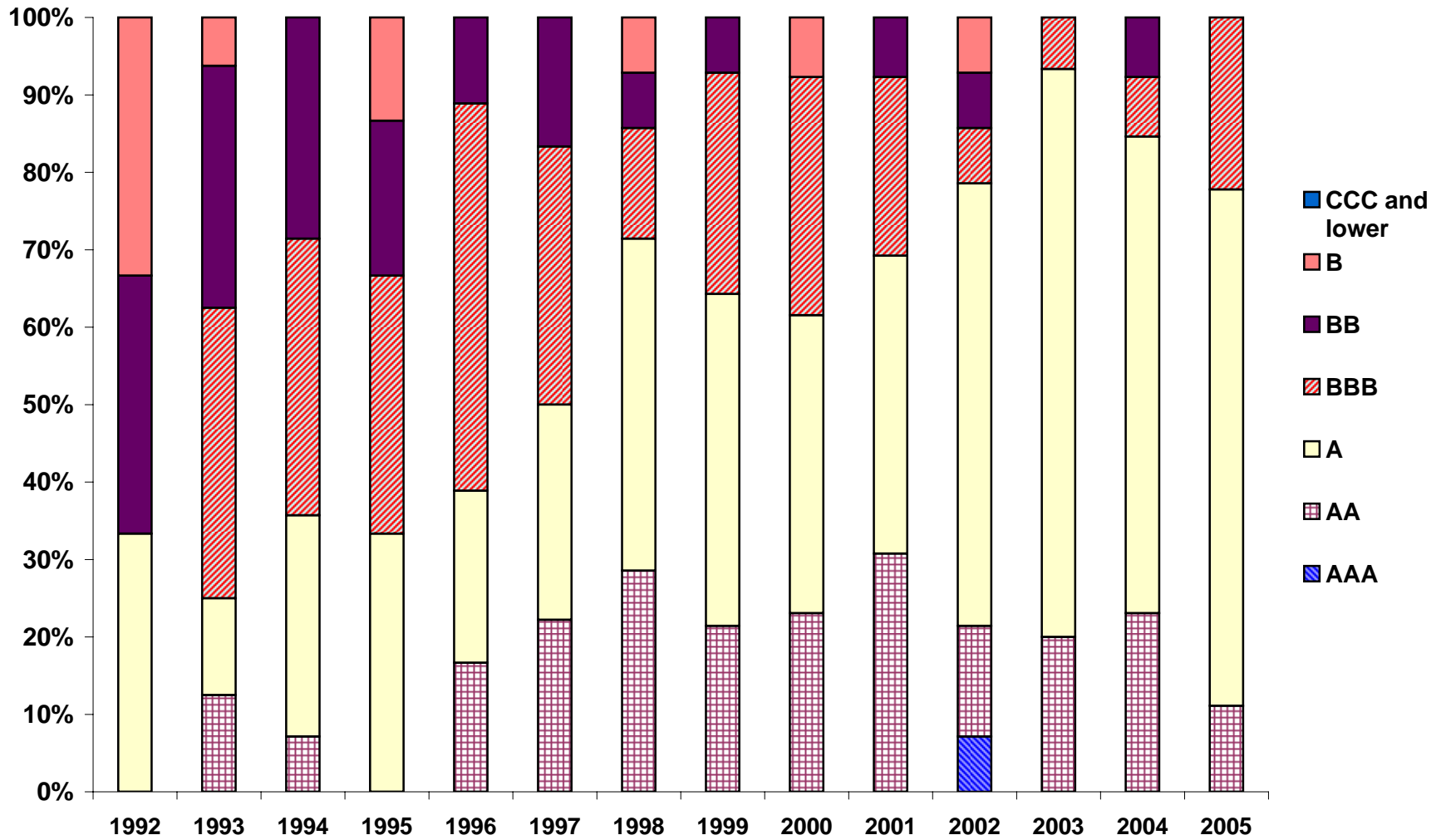


Figure 5.25: Global Reinsurers' Returns on Revenue, 1996-2005



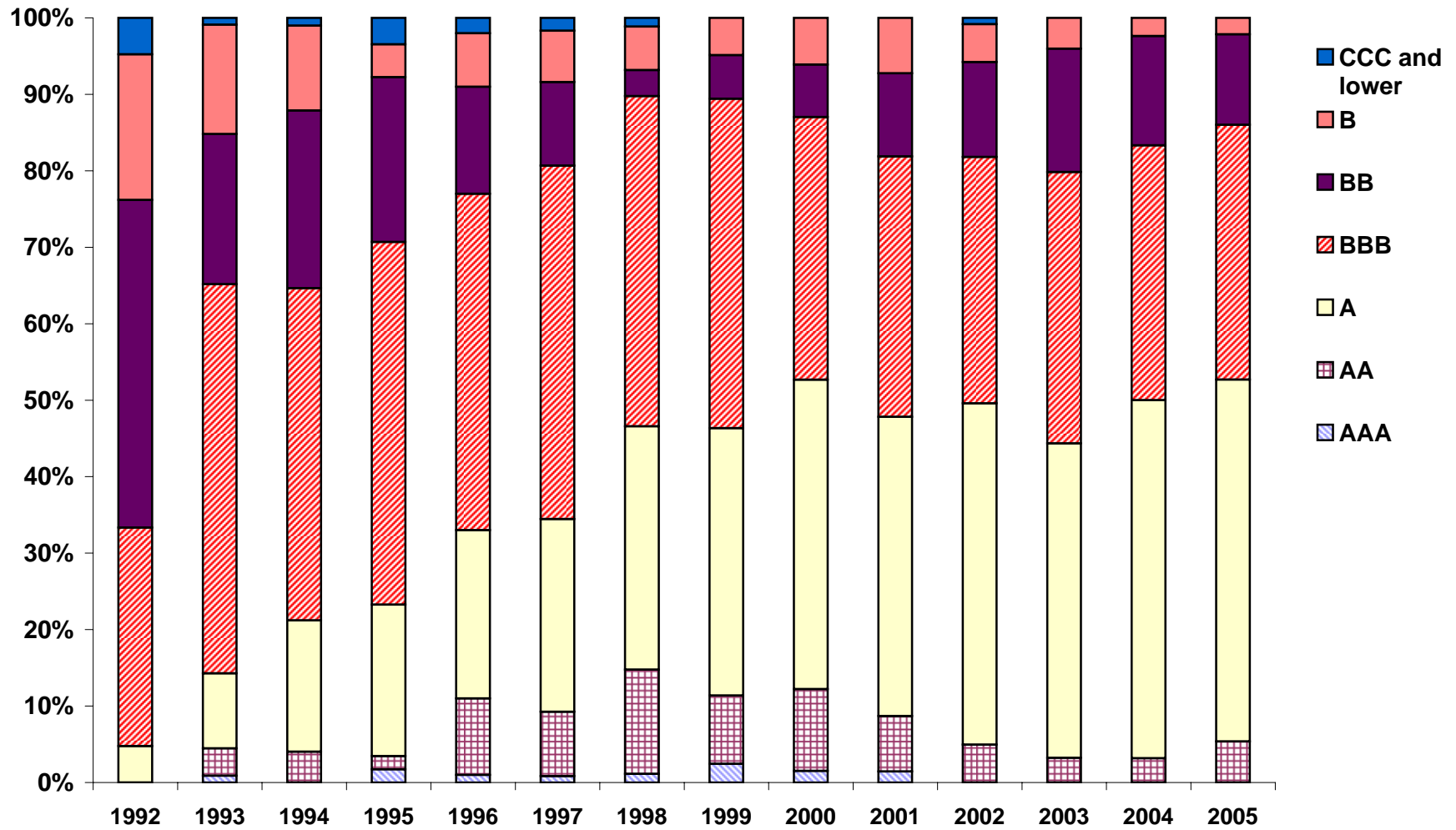
Source: Standard & Poor's, Global Reinsurance Highlights, various years.

**Figure 5.26**  
**Bermuda: Distribution of Ratings 1992 - 2005**



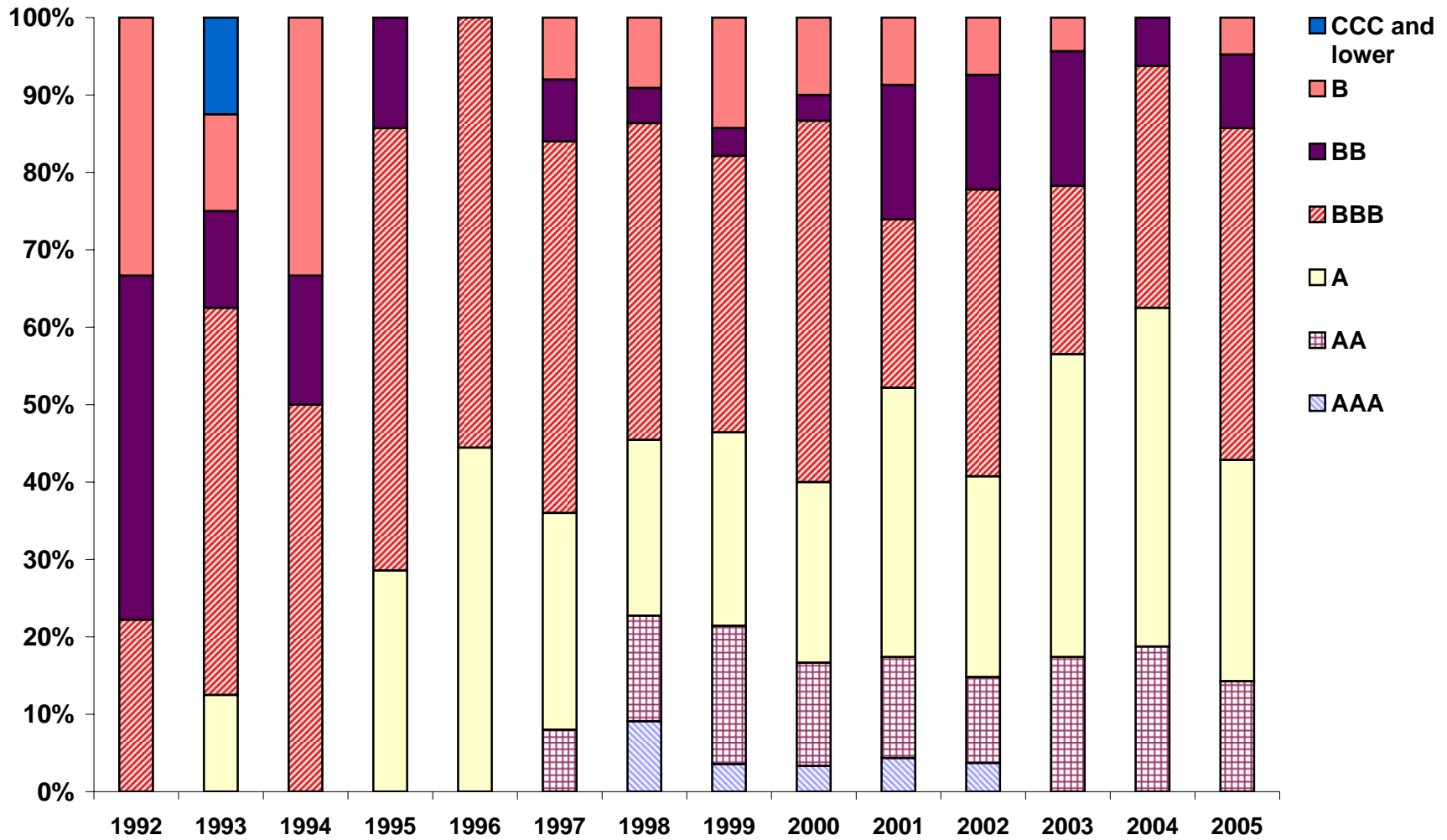
Source: Standard & Poor's ClassicDirect ratings database.

**Figure 5.27**  
**Europe Other Than U.K.: Distribution of Ratings 1992 - 2005**



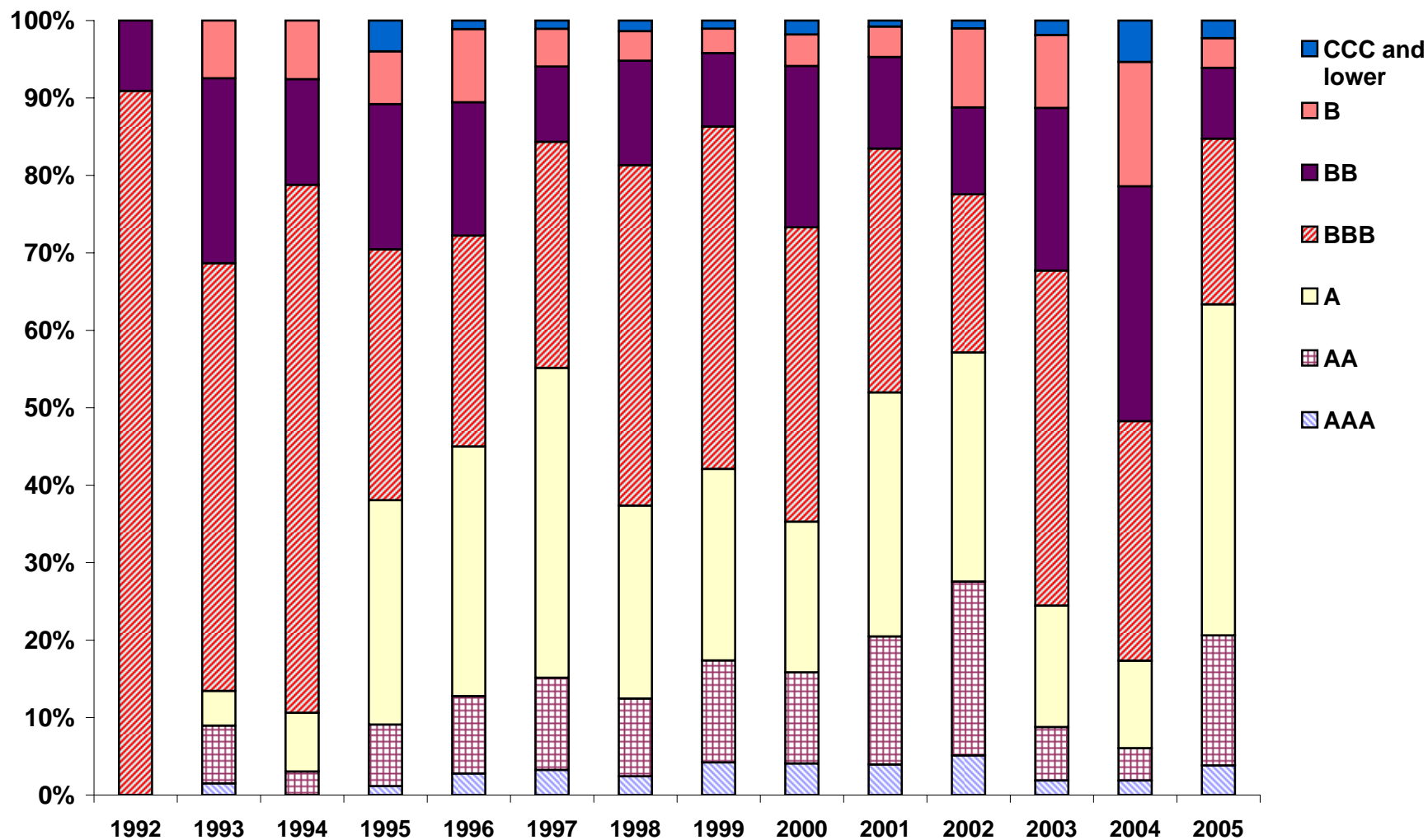
Source: Standard & Poor's ClassicDirect ratings database.

**Figure 5.28**  
**United Kingdom: Distribution of Ratings 1992 - 2005**



Source: Standard & Poor's ClassicDirect ratings database.

**Figure 5.29:**  
**United States: Distribution of Ratings 1992 - 2005**



Source: Standard & Poor's ClassicDirect ratings database.

Figure 5.30  
Average Standard & Poor's Financial Ratings By Region

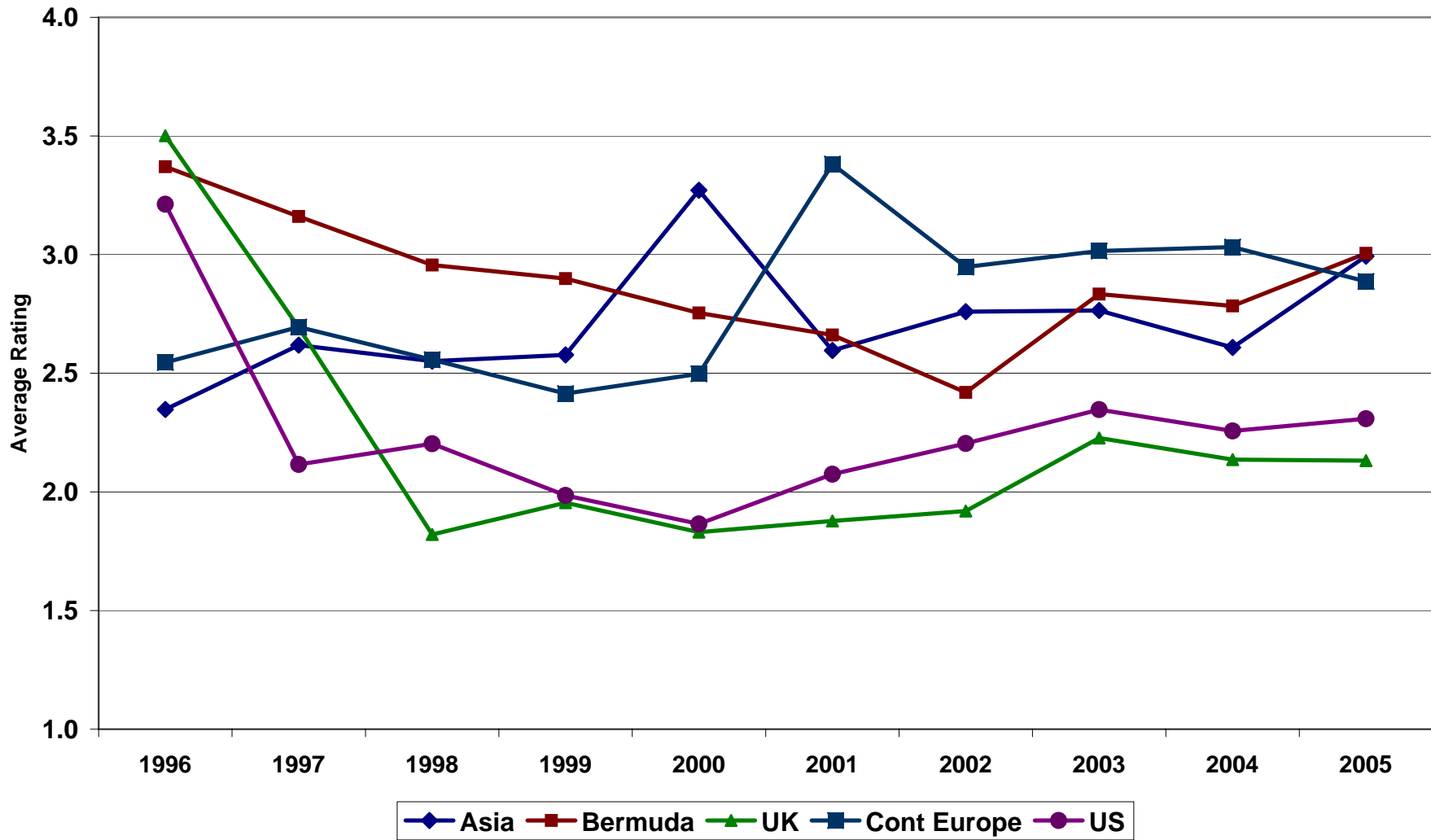


Figure 5.31: Combined Ratios By Region, 1996-2005

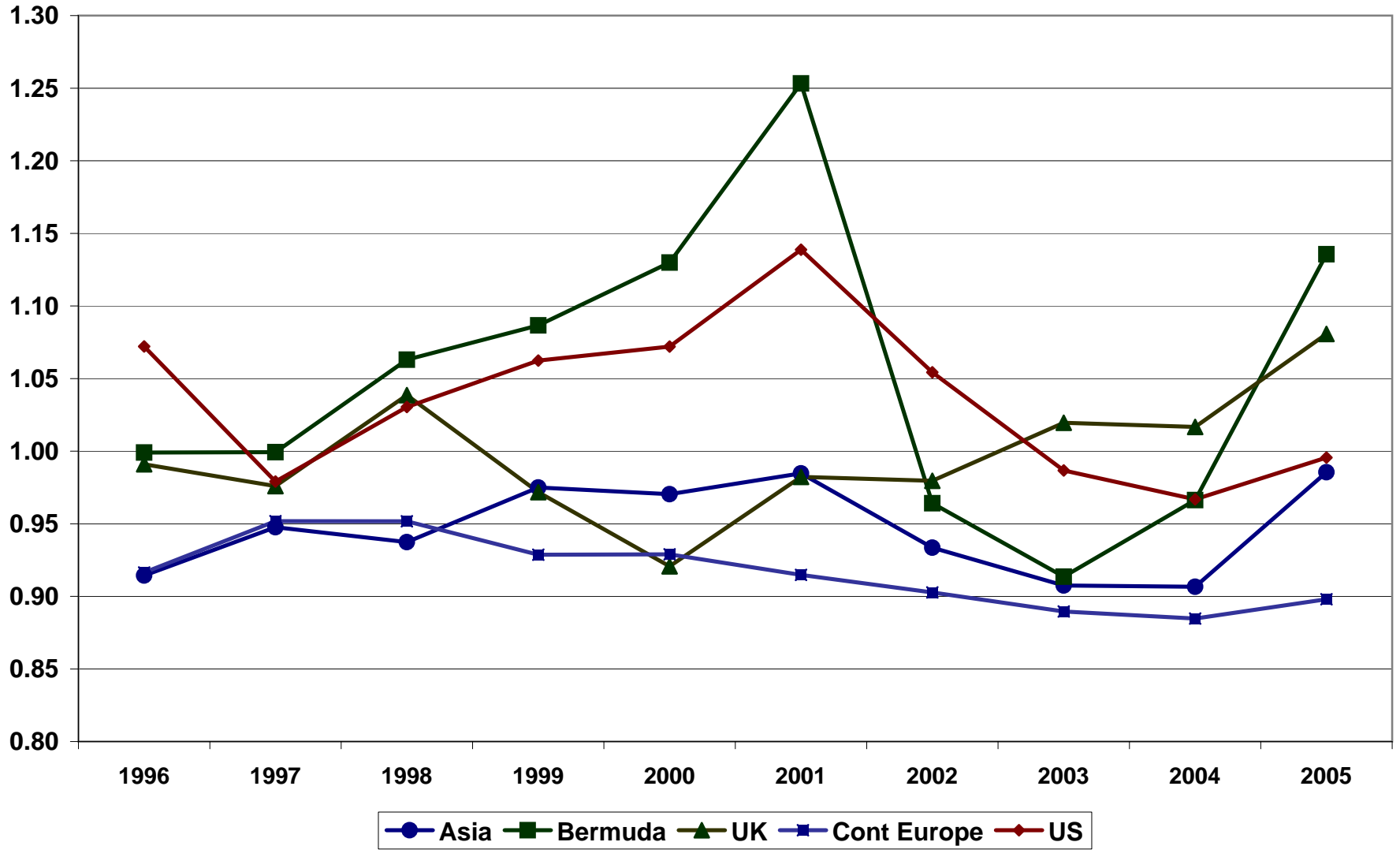




Figure 5.32: Net Premiums Written-to-Surplus Ratios By Region, 1996-2005

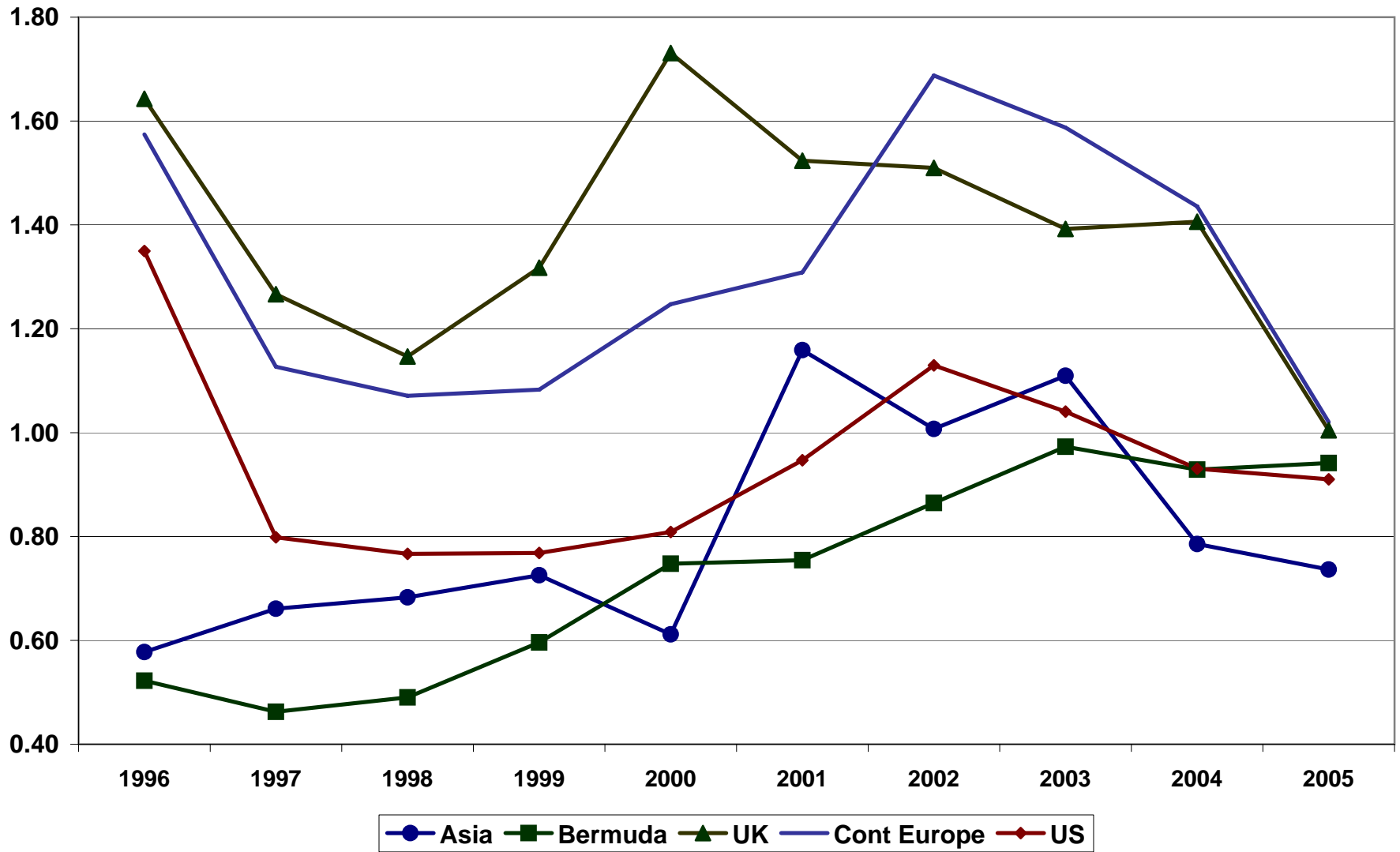
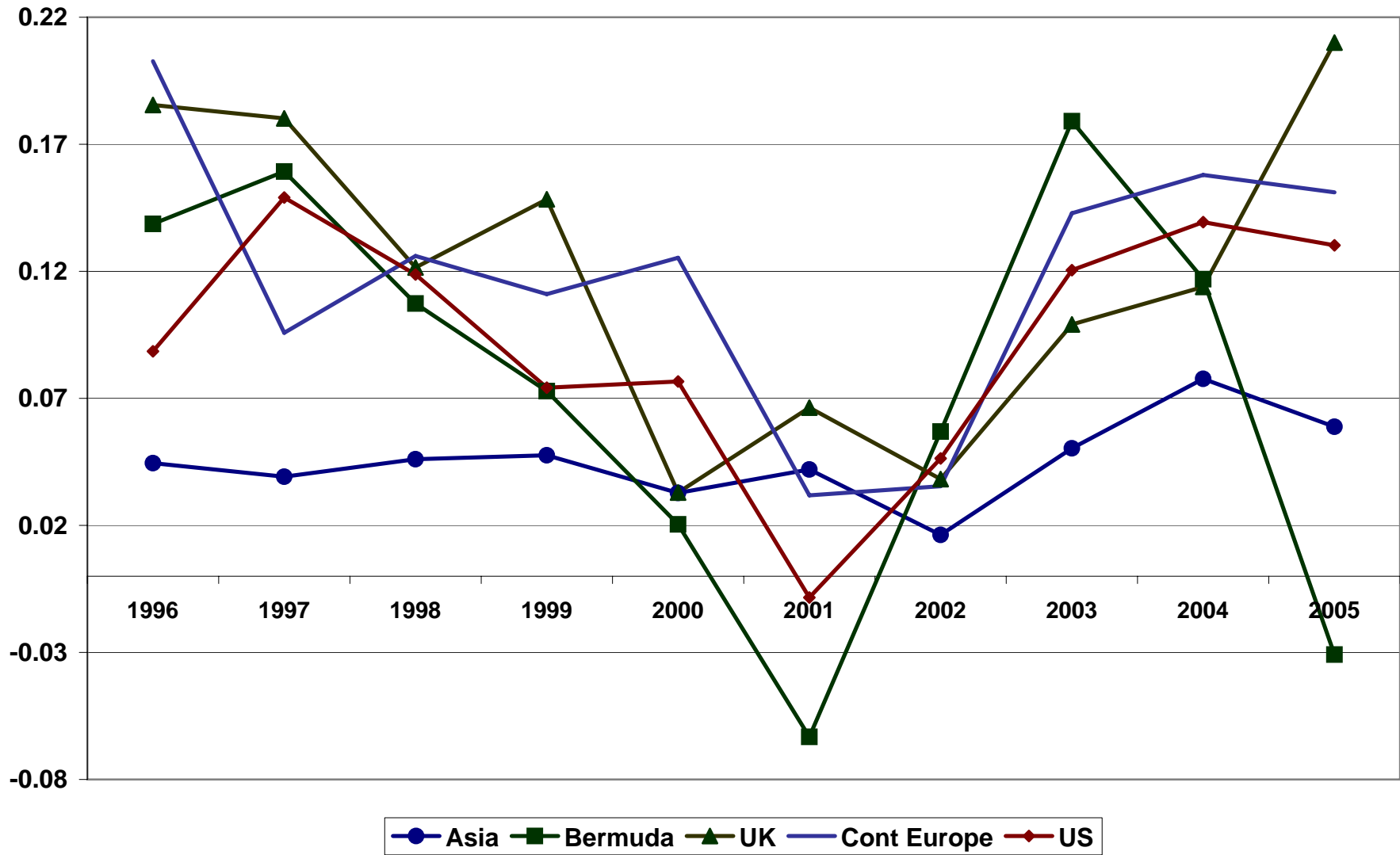
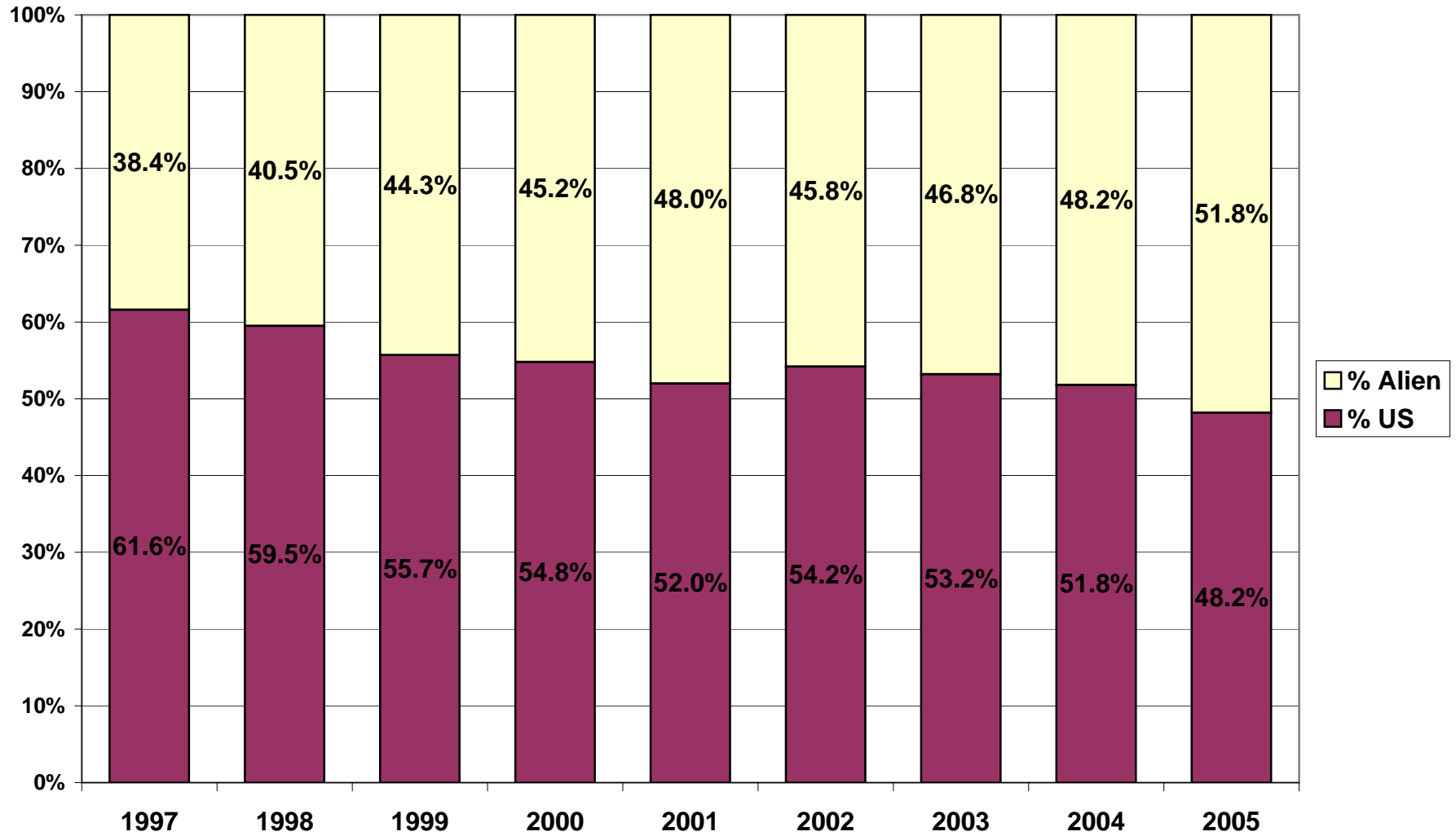


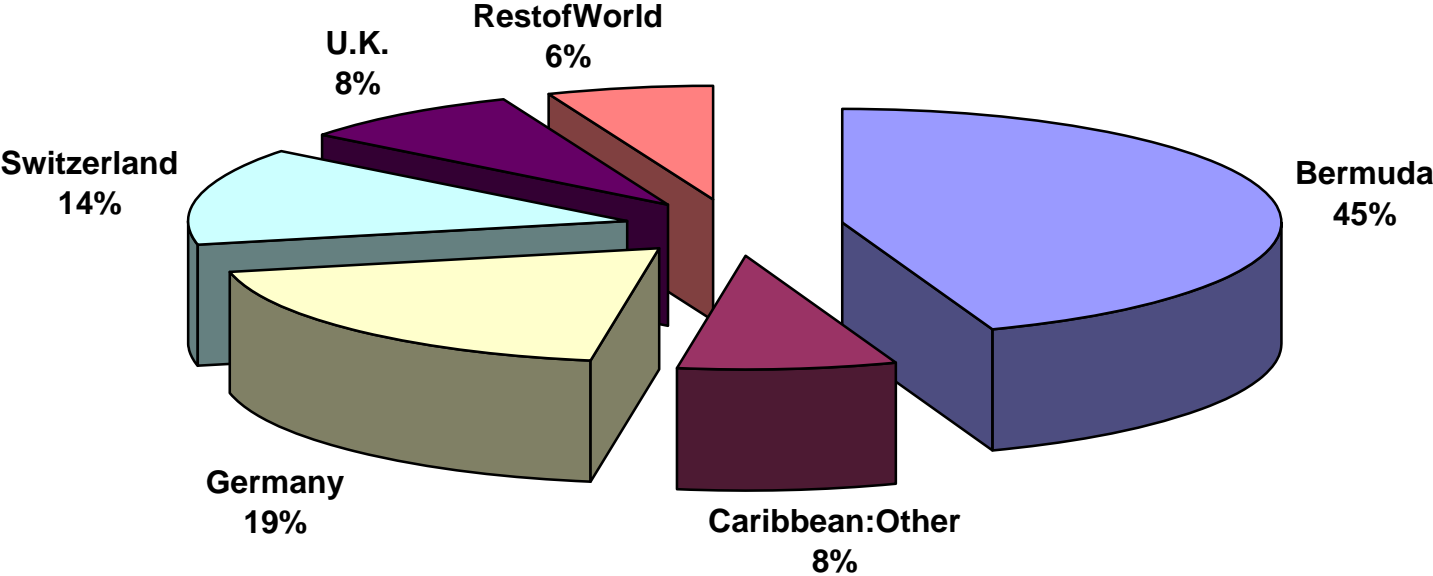
Figure 5.33: Pre-Tax Profit-to-Surplus Ratios By Region, 1996-2005



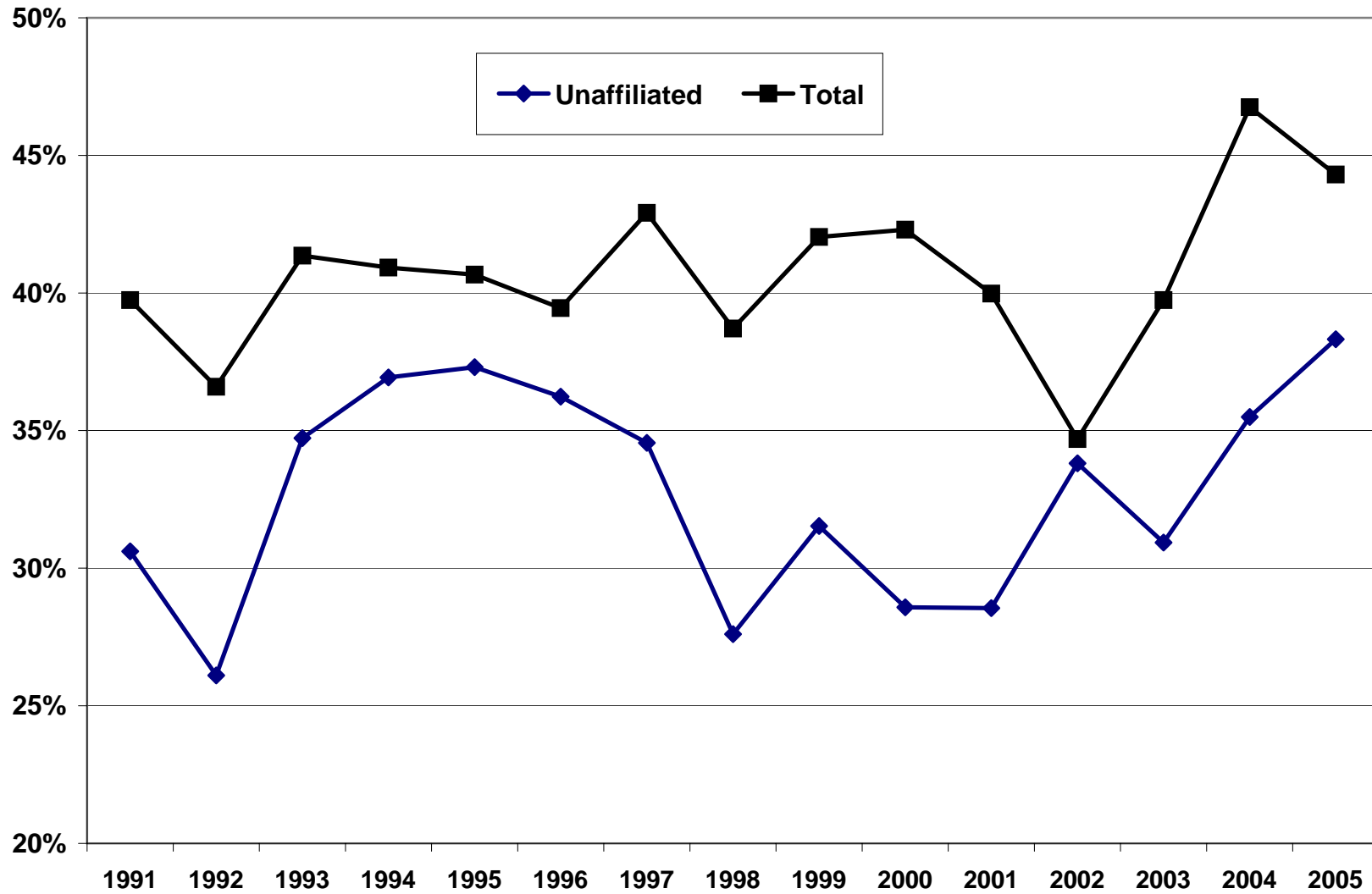
**Figure 6.1**  
**Reinsurance Premiums Ceded: US Professional Reinsurers vs. Alien Reinsurers**



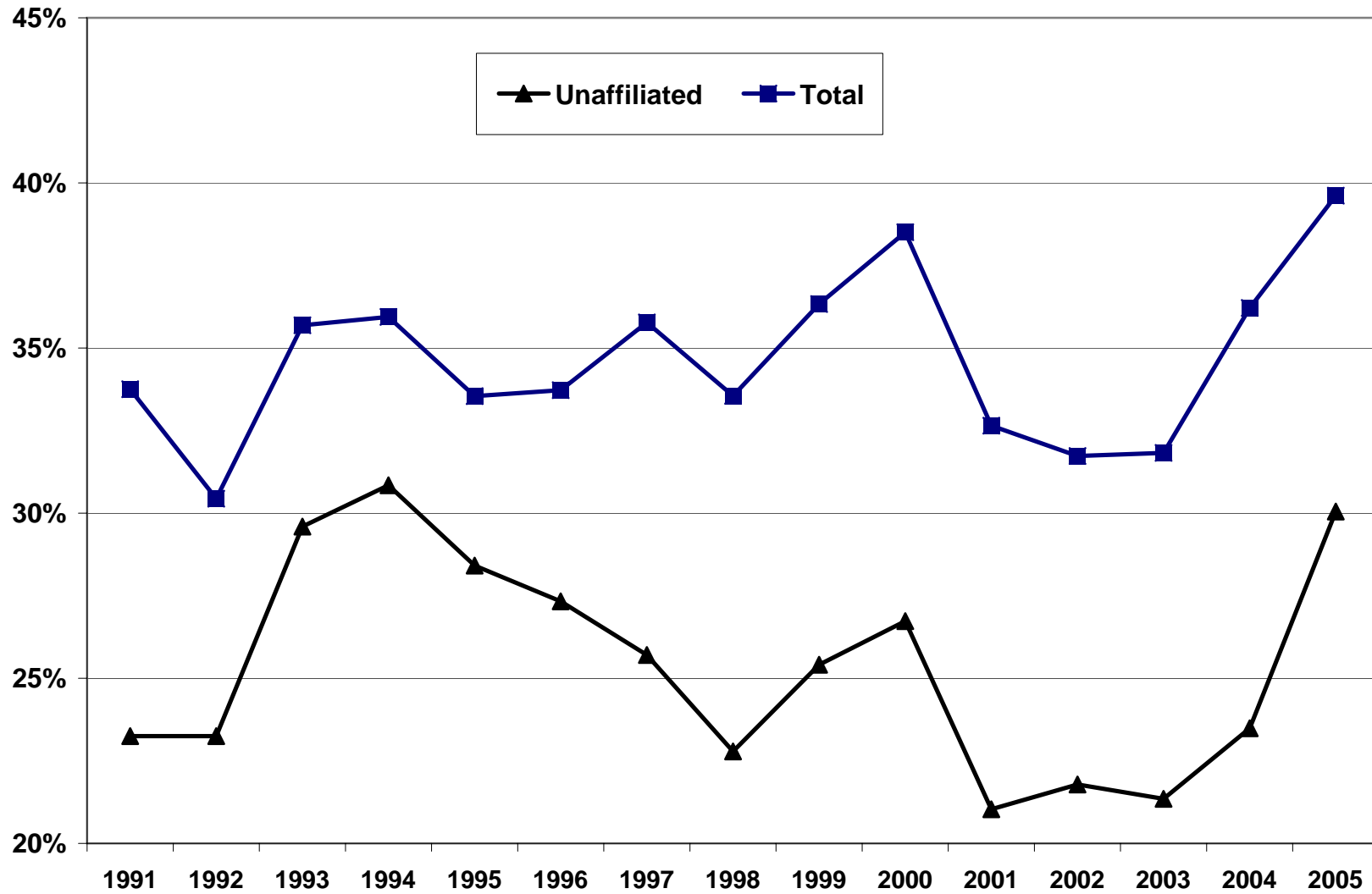
**Figure 6.2**  
**Premiums Ceded to Affiliated and Unaffiliated Alien Reinsurers By Jurisdiction in 2005**



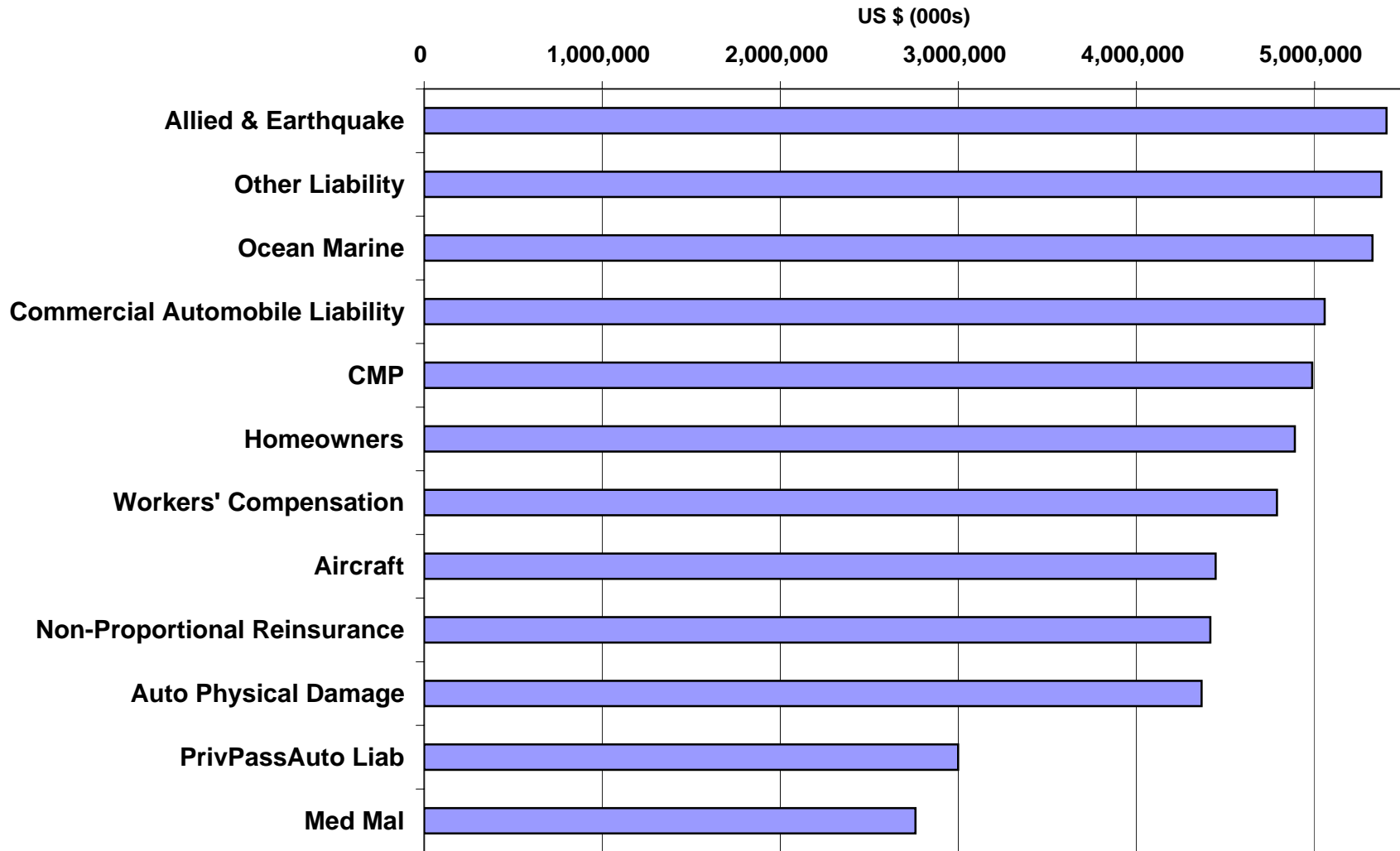
**Figure 6.3: Reinsurance Premiums Ceded by US Insurers to Alien Reinsurers:  
Bermuda Share**



**Figure 6.4: U.S. Insurer Reinsurance Recoverables from Alien Reinsurers:  
Bermuda Share**



**Figure 6.5: Reinsurance Premiums Ceded to Unaffiliated Bermuda Reinsurers  
By U.S. Insurers By Line, 2005**



Source: Reinsurance Association of America Schedule F database.

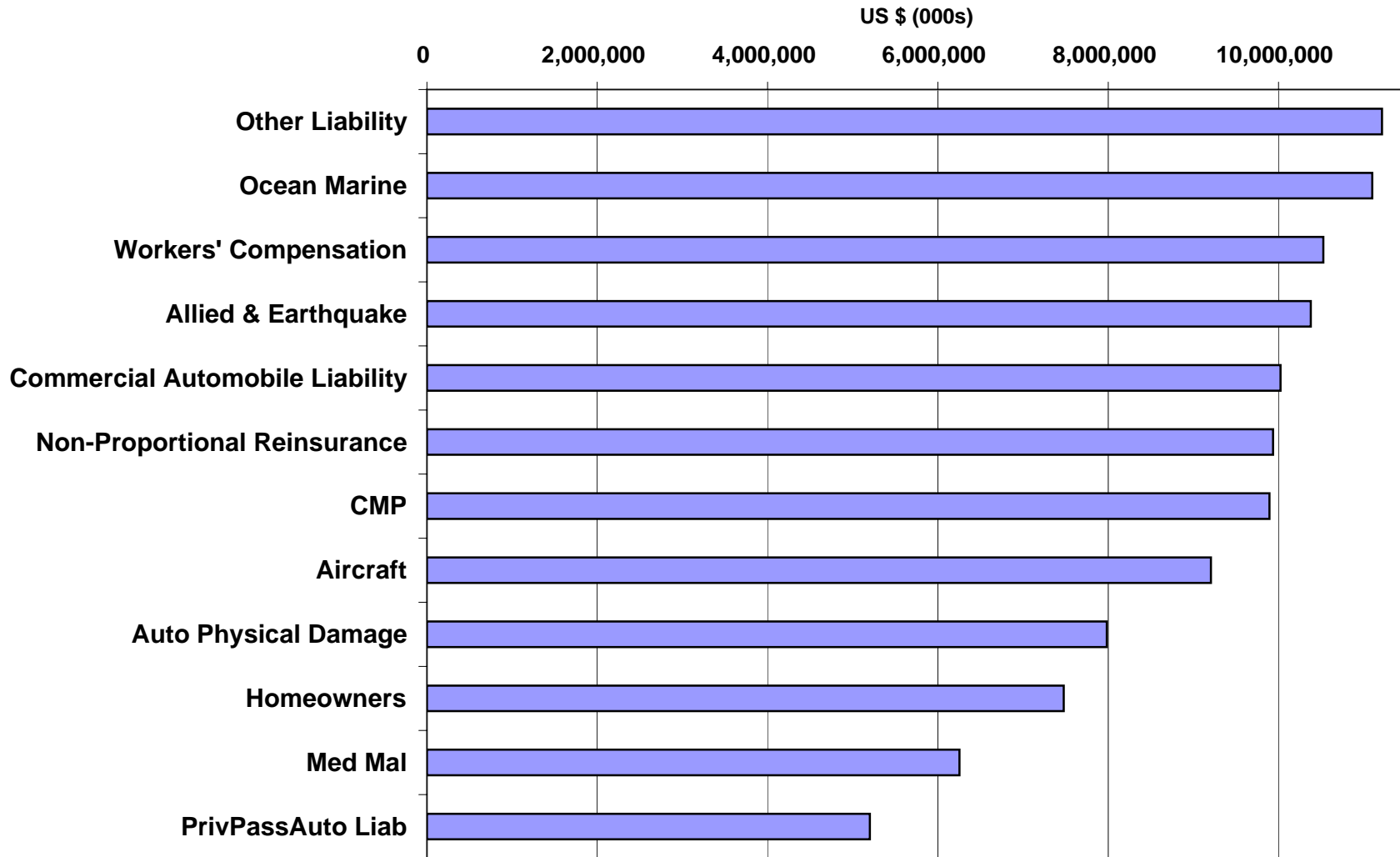
**Figure 6.6: Bermuda Percentage of Total Reinsurance Premiums Ceded By US Insurers to Unaffiliated Alien Reinsurers By Line, 2005**



Source: Reinsurance Association of America Schedule F database.

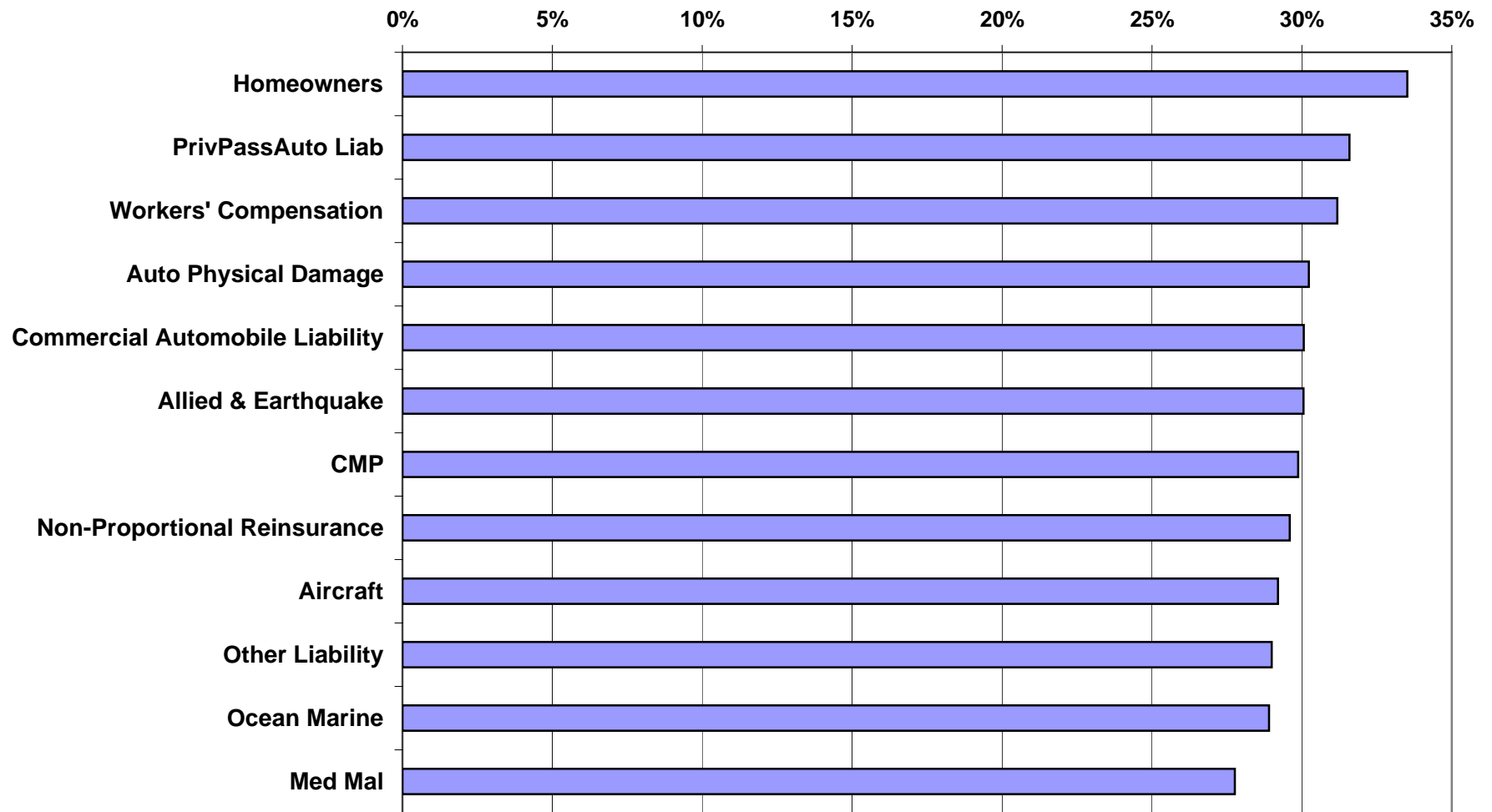


**Figure 6.7: Reinsurance Recoverables Owed to U.S. Insurers  
By Unaffiliated Bermuda Reinsurers By Line, 2005**



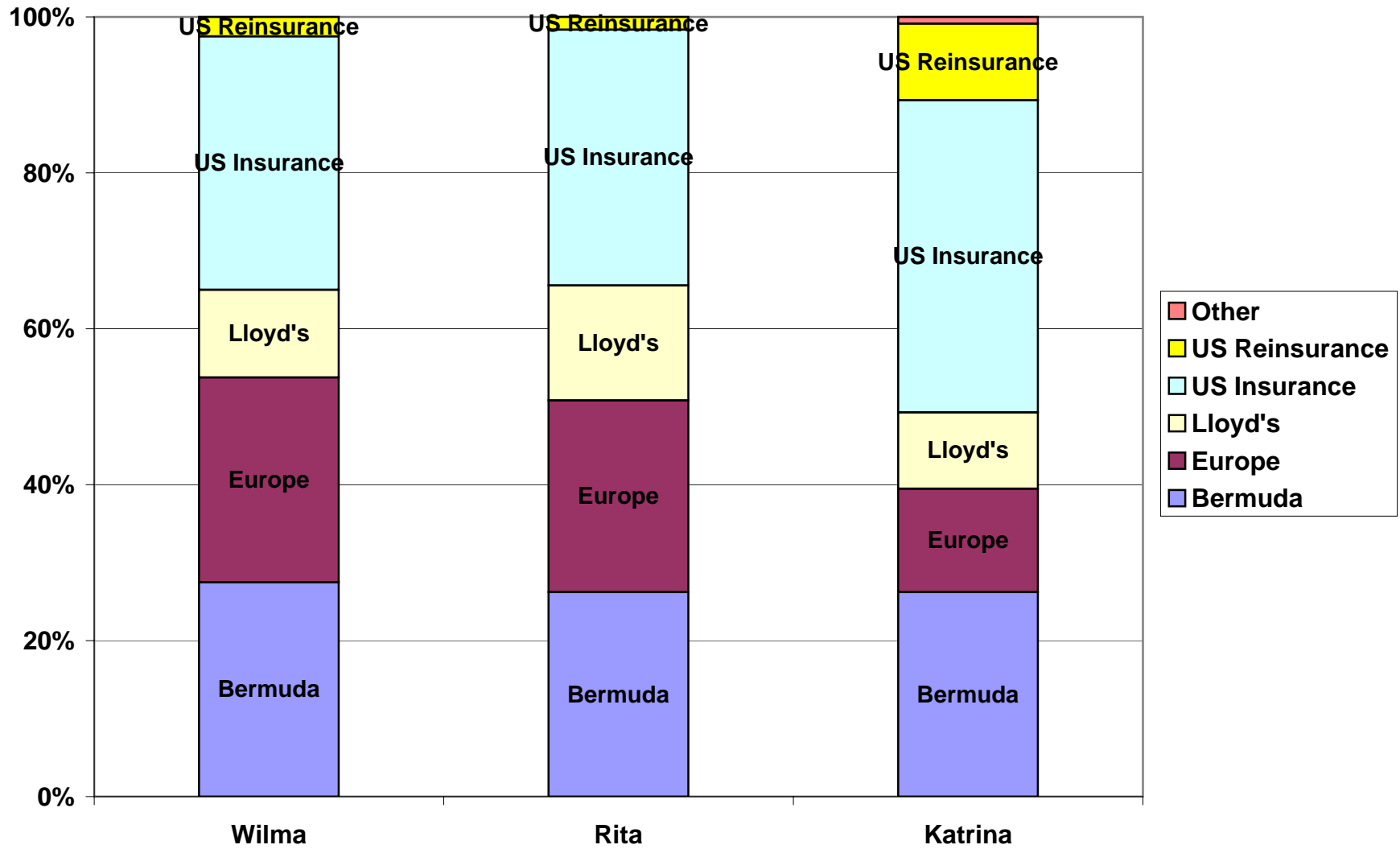
Source: Reinsurance Association of America Schedule F database.

**Figure 6.8: Bermuda Percentage of Total Reinsurance Recoverables Owed to US Insurers  
By Unaffiliated Alien Reinsurers By Line, 2005**

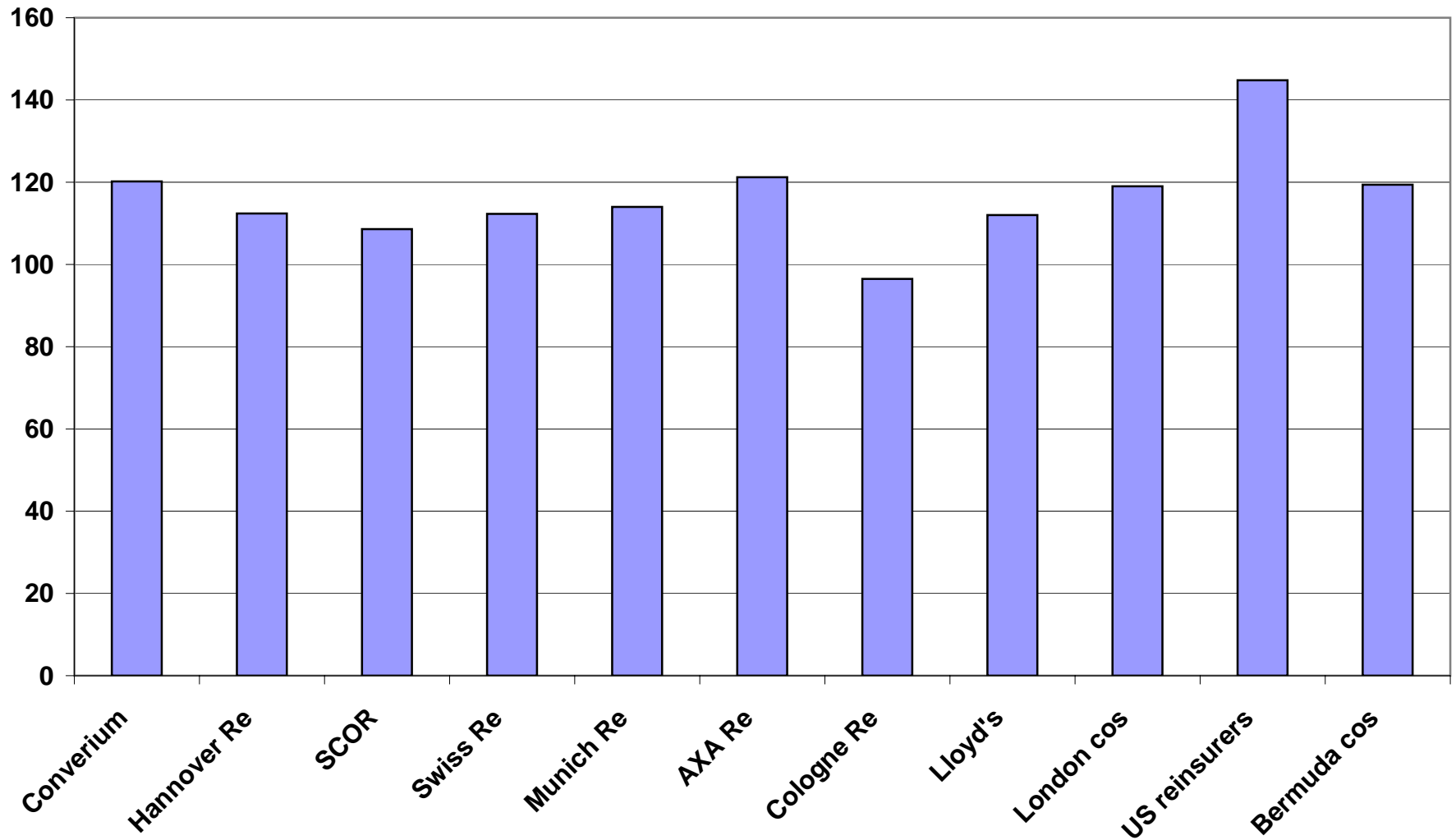


Source: Reinsurance Association of America Schedule F database.

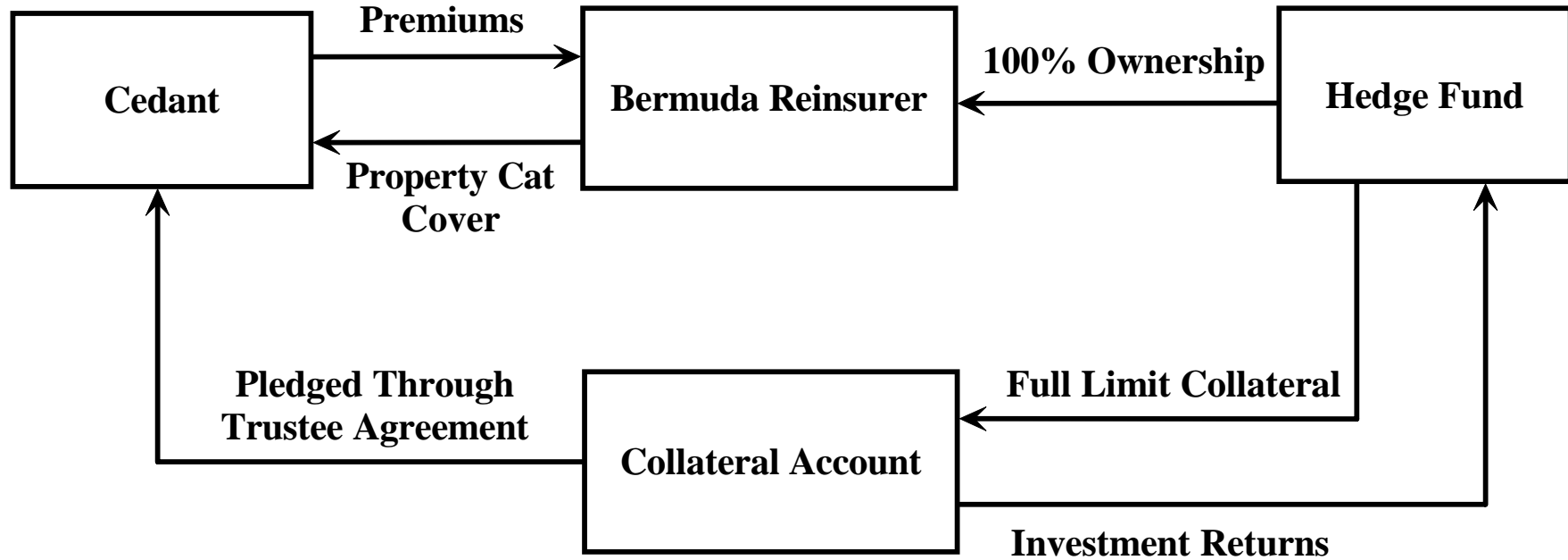
**Figure 6.9**  
**Regional Distribution of 2005 Hurricane Payments: Wilma, Rita, and Katrina**



**Figure 6.10**  
**Major Reinsurers' Combined Ratios for 2005**



**Figure 7.1: Collateralized Reinsurance Structure**



**Figure 7.2: Typical Sidecar Structure**

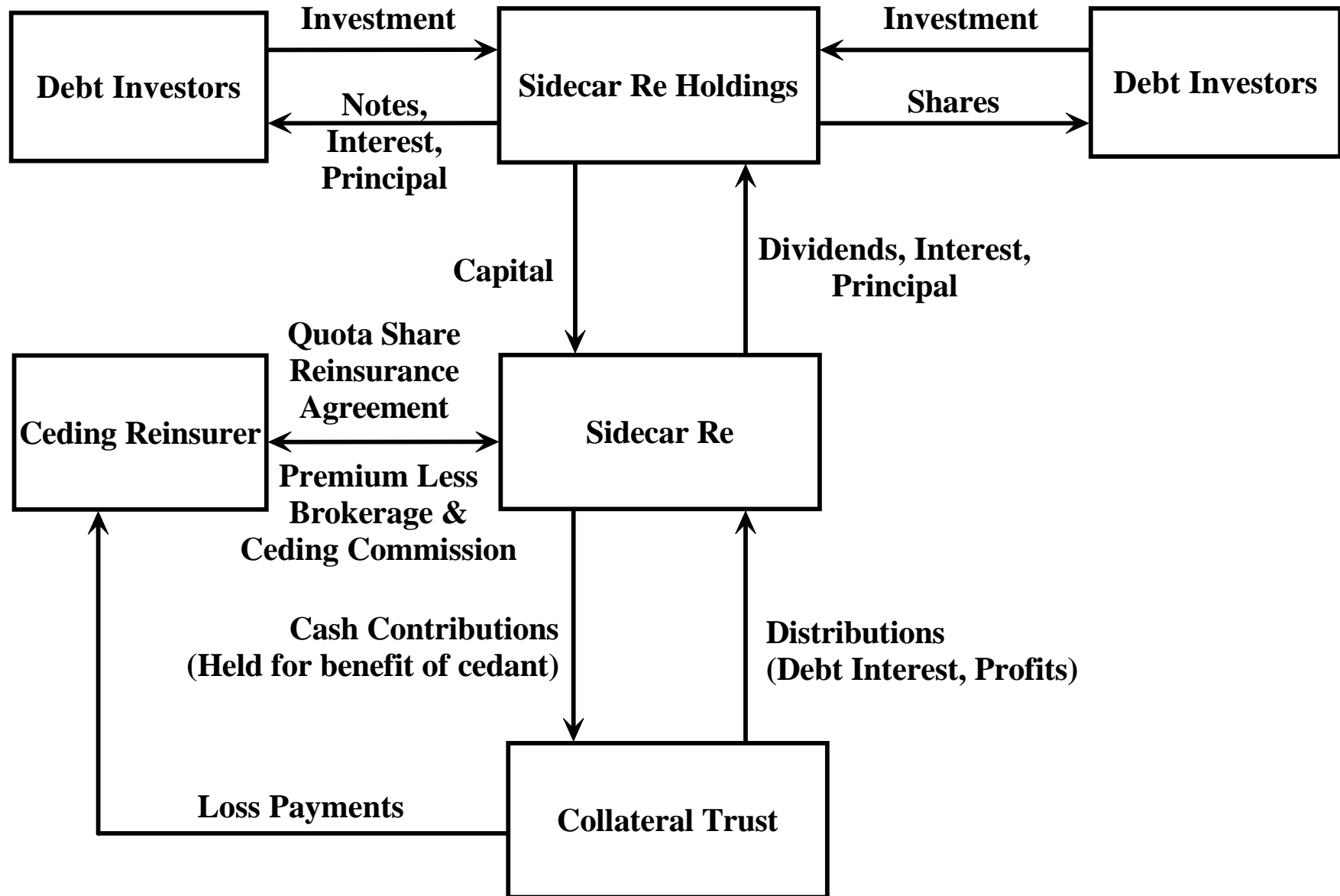
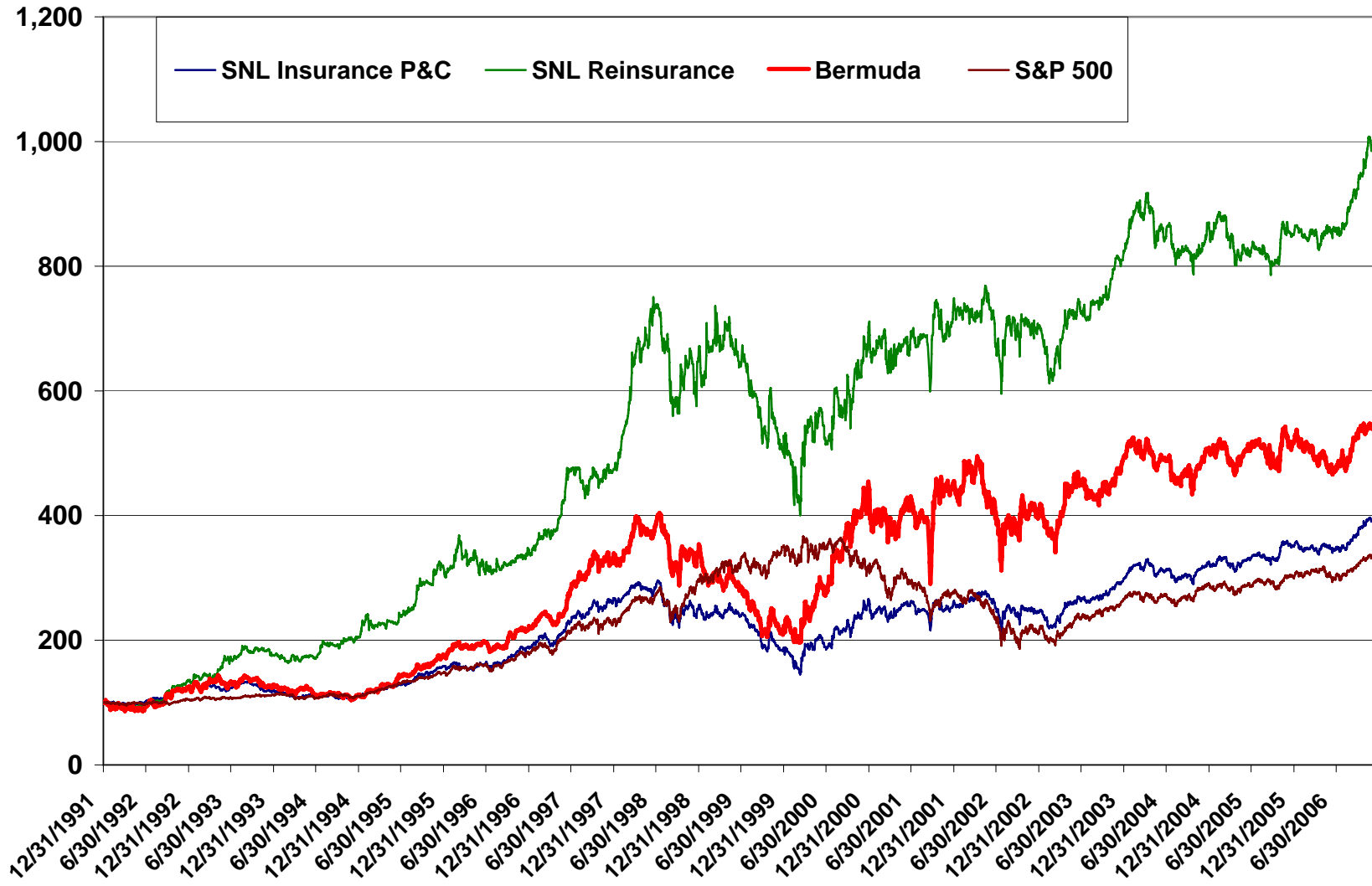


Figure 8.1: U.S. Insurance Stock Price Indices and the S&P 500



**Figure 8.2**  
**Stock Prices: Leading Bermuda Insurers**

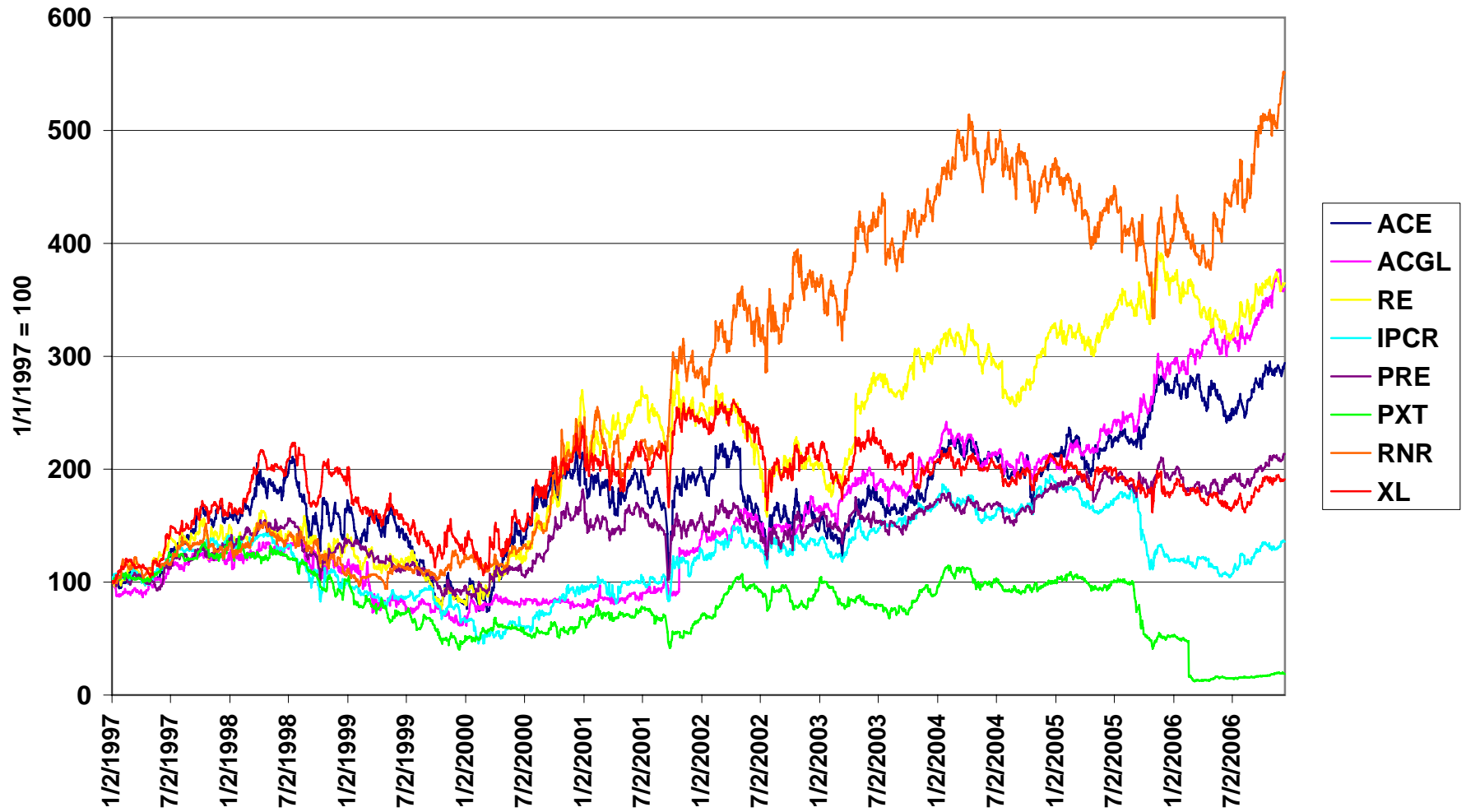




Figure 8.3: Bermudian, European, and US Insurers, 2004 Hurricanes

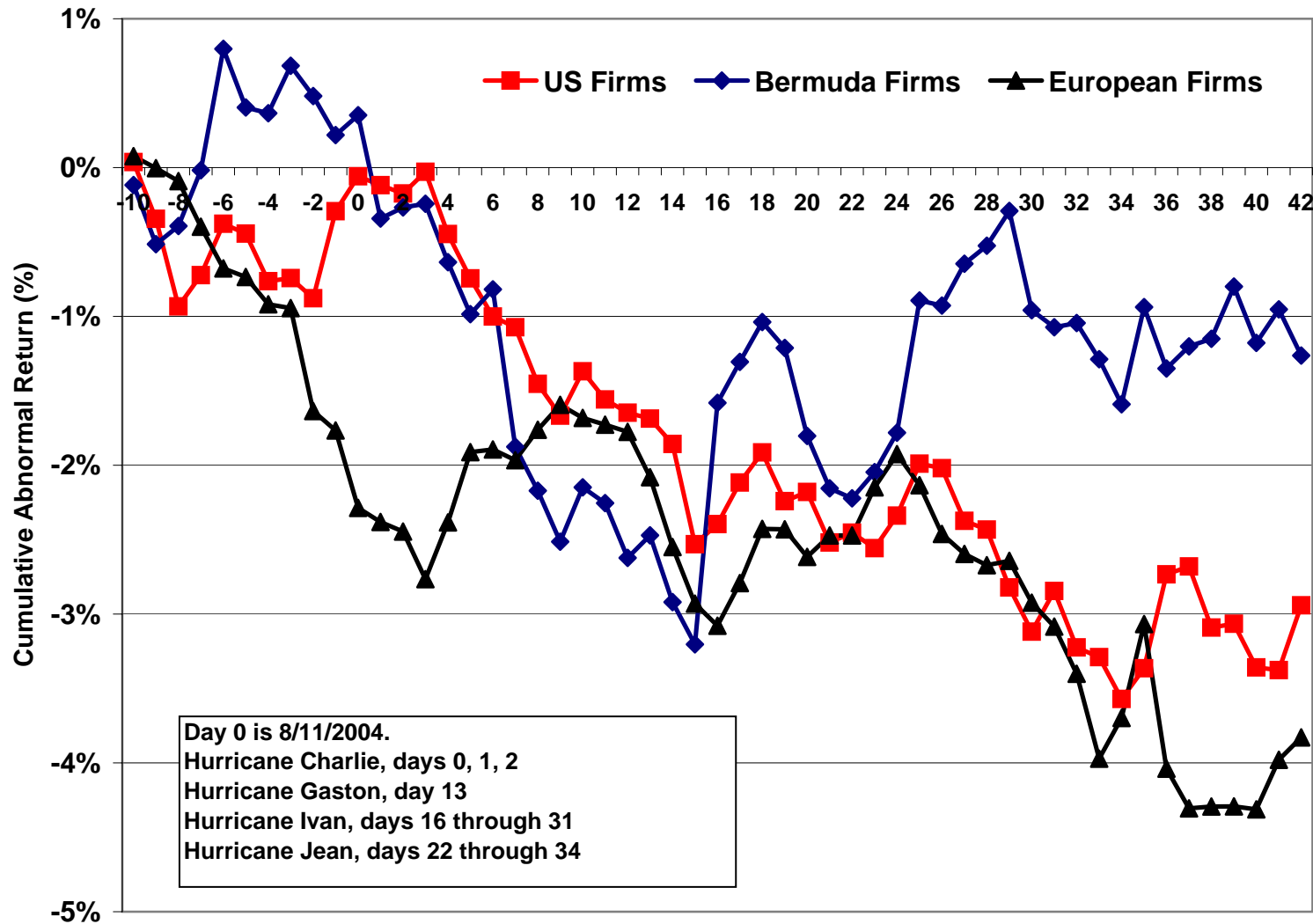


Figure 8.4: Bermudian, European, and US Insurers, 2005 Hurricanes

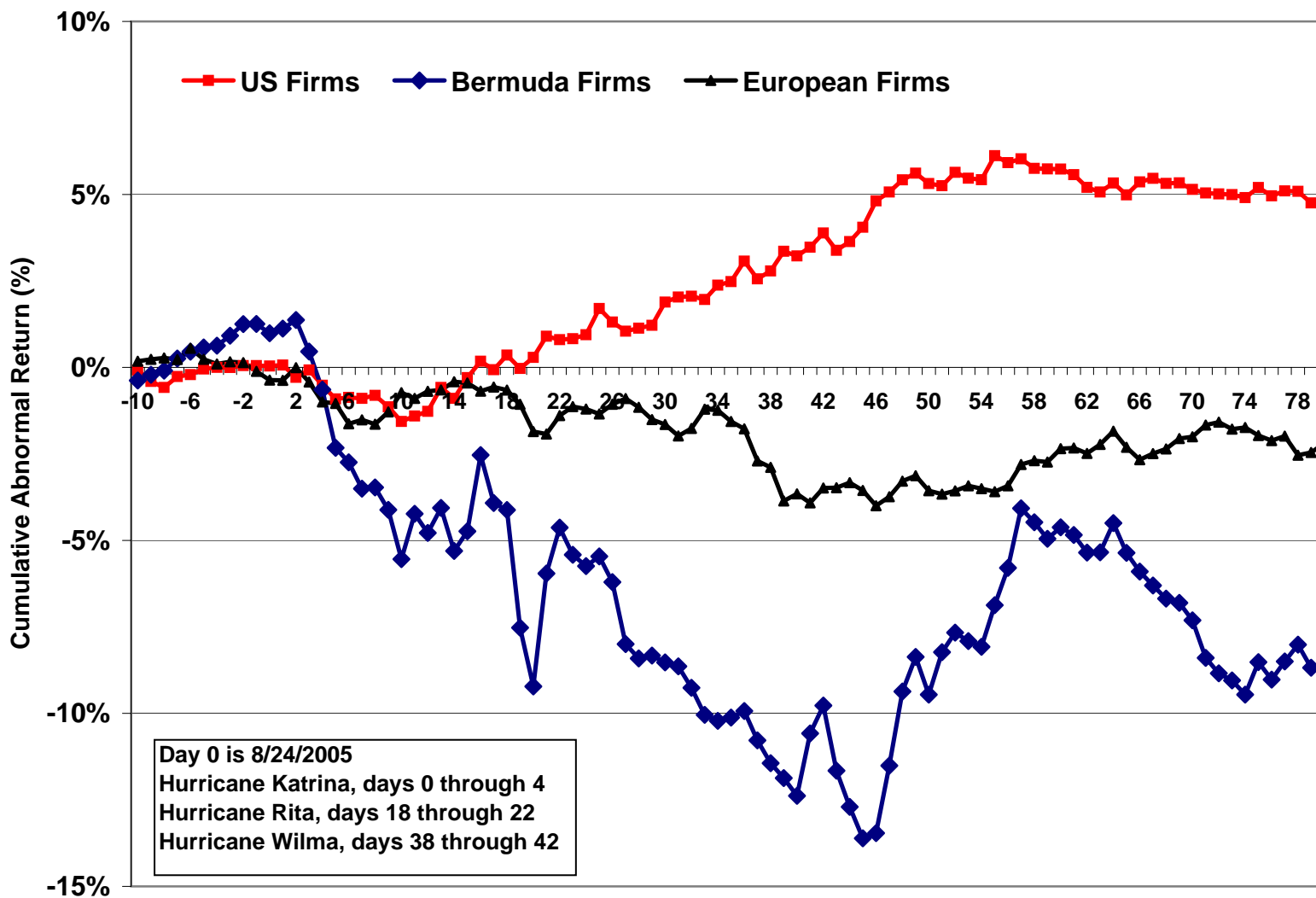


Figure 9.1: Cost Efficiency of Reinsurers By Country

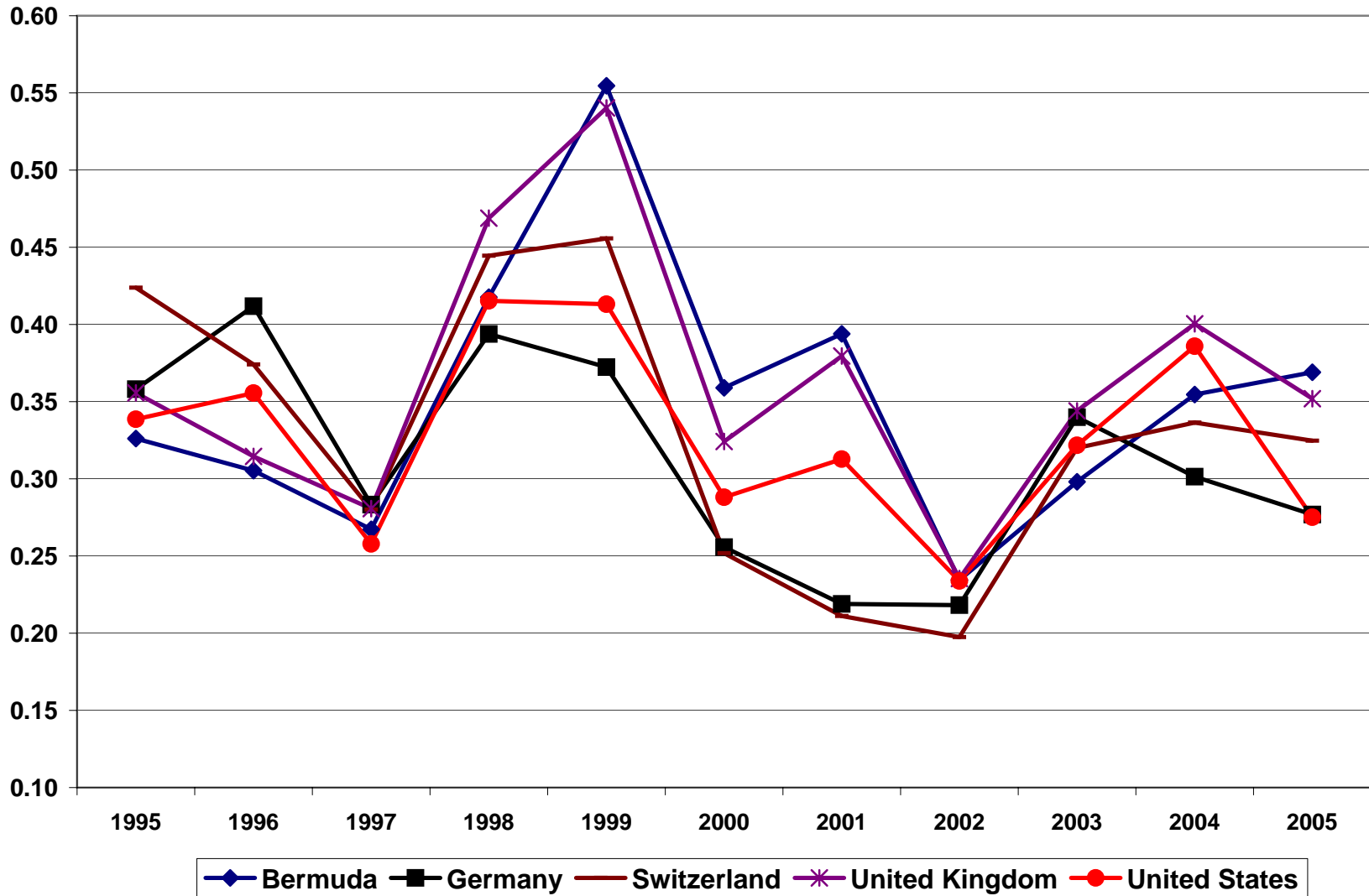


Figure 9.2: Technical Efficiency of Reinsurers By Country

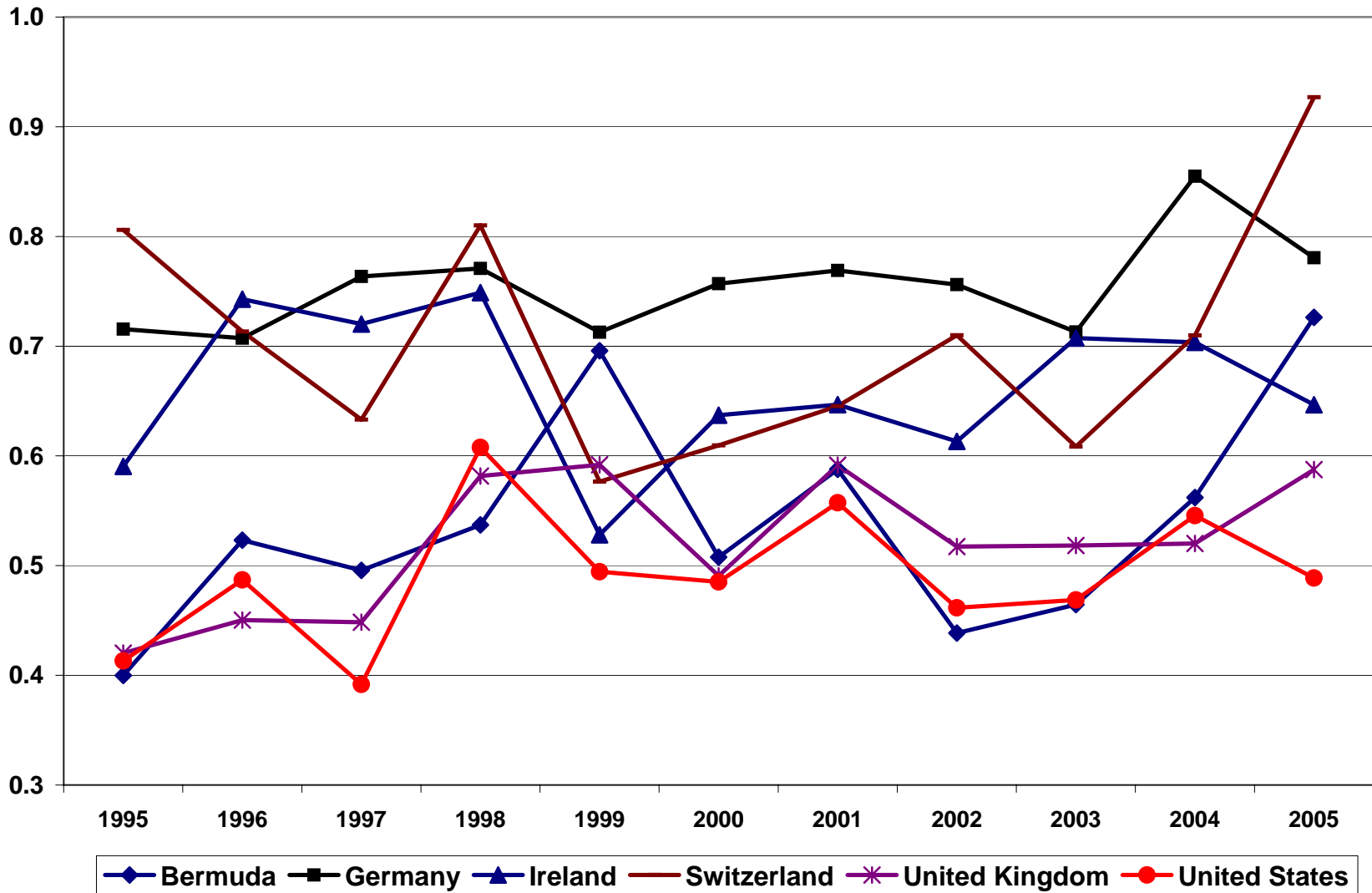
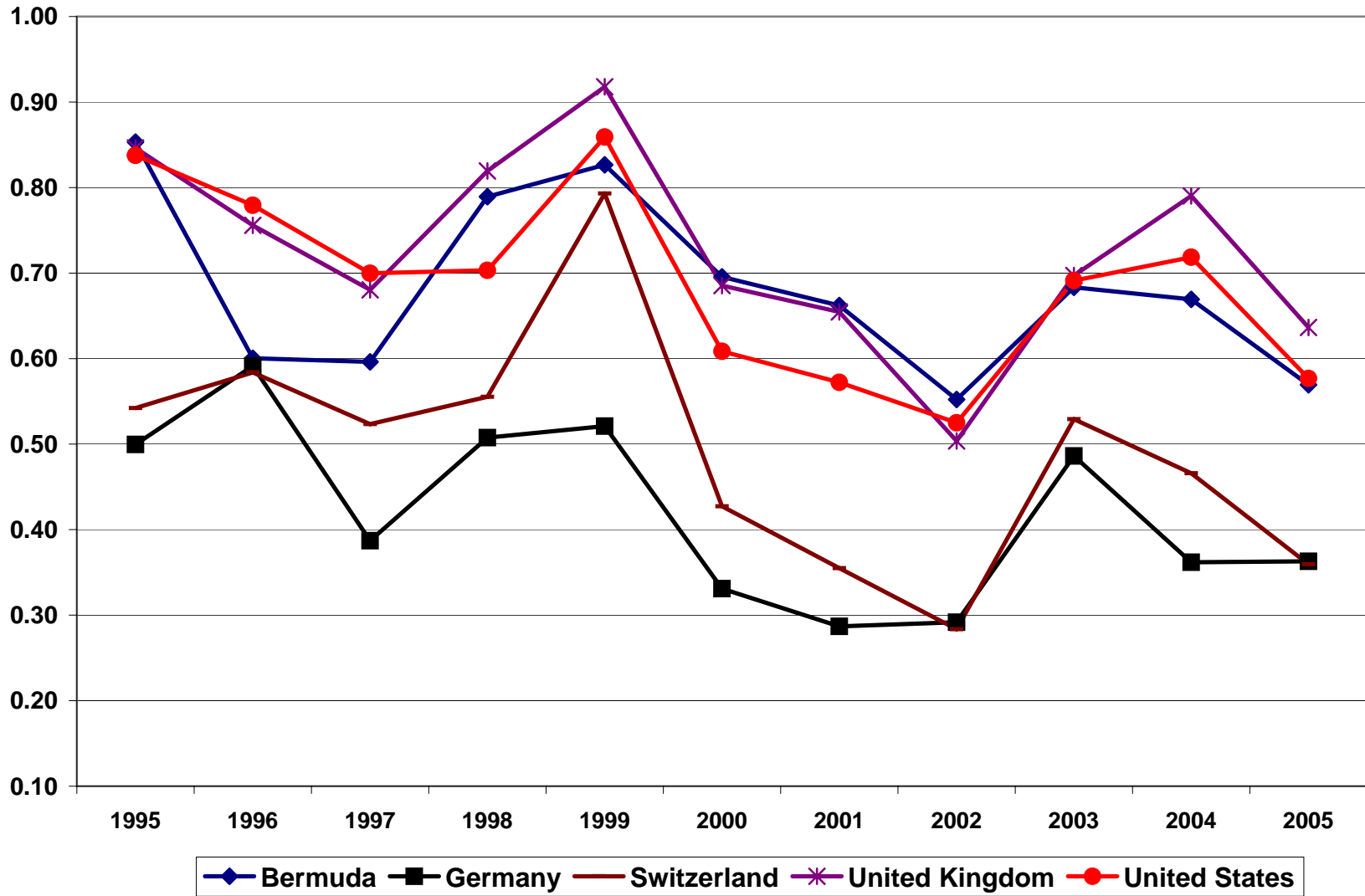


Figure 9.3: Allocative Efficiency of Reinsurers By Country



License category	Class 1	Class 2	Class 3	Class 4	Long-Term
Type of Firm	Single parent captives insuring risks of parent and affiliates only	Multi-owner captives and single parent captives writing up to 20% unrelated business	Insurers and reinsurers not included in classes 1, 2, or 4. E.g., captives where more than 20% of net premiums is unrelated business	Open market insurers and reinsurers underwriting for example direct excess liability insurance and property catastrophe reinsurance	Life insurers and long term accident and health
Minimum solvency margin Statutory capital and surplus must exceed greater of: (a) Minimum capital and surplus (b) Premium test First \$6 million NPW plus Excess of \$6 million NPW (c) (Net) loss reserve test	\$120,000  20 percent 10 percent 10 percent	\$250,000  20 percent 10 percent 10 percent	\$1,000,000  20 percent 15 percent 15 percent	\$100,000,000  50 percent <sup>1</sup> 50 percent <sup>1</sup> 15 percent	\$250,000
Liquidity ratio	Relevant assets <sup>1</sup> must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	No requirement
Information filed in annual return	Cover sheet Solvency certificate Declaration of ratios Auditor's report	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Auditor's report Loss reserve specialist opinion (triennial)	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Auditor's report Loss reserve specialist opinion (annual)	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Schedule of ceded reinsurance Auditor's report Loss reserve specialist opinion (annual)	Cover sheet Solvency certificate Actuarial opinion Statutory financial statements Auditor's report
Failure to meet solvency margin	Principal representative report to BMA with 30 days	Principal representative report to BMA with 30 days	Cease paying dividends. Report within 30 days on how company intends to comply with solvency margin.	Cease paying dividends. Report within 30 days on how company intends to comply with solvency margin. If capital and surplus falls below \$750,000, additional reporting rules.	Principal representative report to BMA with 30 days

<sup>1</sup>For class 4 insurers, the test is 50 percent of net premiums written with maximum deduction for reinsurance of 25 percent of gross premiums written.

<sup>2</sup>Relevant assets exclude investments in non-insurance advances to subsidiaries and affiliates, unquoted equity investments, and real estate.

Dividend restrictions	Must comply with minimum capital and surplus requirement after dividend	Must comply with minimum capital and surplus requirement after dividend	Must comply with minimum capital and surplus requirement after dividend	If dividend > 25% of statutory capital and surplus, affidavit required signed by 2 directors and principal representative stating that margins still met after dividend.	Dividend must not reduce long-term fund surplus below \$250,000
Reduction of statutory capital	Regulatory approval required to reduce capital by $\geq 15\%$ below prior year-end capital	Regulatory approval required to reduce capital by $\geq 15\%$ below prior year-end capital	Regulatory approval required to reduce capital by $\geq 15\%$ below prior year-end capital	Regulatory approval required to reduce capital by $\geq 15\%$ below prior year-end capital. Affidavit required signed by 2 directors and principal representative stating that margins still met after dividend.	Regulatory approval required to reduce capital by $\geq 15\%$ below prior year-end capital

Source: KPMG (2005). Bermuda Laws Online, <http://www.bermudalaws.bm/home.html>. Bermuda Insurance Development Council (2007).

**Table 5.1**  
**Number of International Insurers Registered**

<b>Class of Insurer</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Class 1	379	376	388	374	363
Class 2	432	437	428	415	403
Class 3	420	441	456	422	441
Class 4	18	21	20	21	30
Long-Term	76	73	106	76	84
Composites	103	107	83	102	100
Other	174	186	201	-	-
<b>Total</b>	<b>1,602</b>	<b>1,641</b>	<b>1,682</b>	<b>1,410</b>	<b>1,421</b>

**Table 5.2**  
**Number of Insurers Incorporated**

<b>Class of Insurer</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Class 1	23	35	33	28	12
Class 2	11	17	11	12	10
Class 3	54	34	33	24	31
Class 3 & Long-Term	0	0	0	1	1
Class 4	8	3	3	1	11
Class 4 & Long-Term	8	4	2	0	0
Long-Term	5	3	7	11	10
<b>Total</b>	<b>109</b>	<b>96</b>	<b>89</b>	<b>77</b>	<b>75</b>

**Table 5.3**  
**Market Statistics By Class of Insurer, December 31, 2005**

<b>Class of Insurer</b>	<b>Number of Companies</b>	<b>Gross Premiums</b>	<b>Net Premiums</b>	<b>Total Assets</b>	<b>Capital &amp; Surplus</b>
Class 1	344	4,703	3,704	16,149	8,026
Class 2	379	8,658	7,237	35,399	13,390
Class 3	474	33,768	25,023	117,165	38,344
Class 4	38	30,799	27,558	116,801	40,908
Long-Term	77	22,754	22,754	44,308	9,366
<b>Total</b>	<b>1,312</b>	<b>100,682</b>	<b>86,275</b>	<b>329,822</b>	<b>110,034</b>

Note: Monetary figures are in millions of dollars. These figures differ somewhat from those in Table 5.1 because the number of registered companies includes some inactive firms.



**Table 5.4**  
**Number of Captive Insurers By Domicile: 2004-2006**

<b>Domicile</b>	<b>Number by Domicile</b>		
	<b>2004</b>	<b>2005</b>	<b>2006</b>
Bermuda	1,000	987	989
Cayman	693	733	740
Vermont	524	542	563
BVI	340	383	383
Guernsey	379	382	381
Barbados	290	301	235
Luxembourg	219	208	208
Dublin	214	207	154
Turks&Caicos	164	166	169
Isle of Man	175	165	161
Hawaii	147	158	160
Other	103	122	131
S. Carolina	106	122	146
Other US St.	56	73	102
Singapore	57	60	60
District of Columbia	40	59	70
Nevada	39	58	97
Arizona	39	53	74
Switzerland	50	48	48
New York	28	33	39
Bahamas	19	22	26
<b>Total</b>	<b>4,507</b>	<b>4,668</b>	<b>4,652</b>

Source: Business Insurance, March 6, 2006, p. 11.  
 Business Insurance, March 12, 2007, p. 12. Business Insurance reports 2 years of data in each issue. The 2004 and 2005 data in this table are from the March 6, 2006 issue and the 2006 data are from the March 12, 2007 issue.

**Table 5.5: Top 40 Global Reinsurance Groups in 2005**

Group	Country	Net Reinsurance Premiums Written (Mil. \$)		Pretax Operating Income (Mil. \$)		Expense Ratio (%)		Loss Ratio (%)		Total Adjusted Shareholders' Funds (Mil. \$)		ROR	
		2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004
Munich Re	Germany	22,602.8	26,400.1	572.0	2,688.4	27.9	26.9	84.7	72.6	31,269.2	31,311.9	2.2	9.0
Swiss Re (1)	Switzerland	21,203.6	25,766.9	84.4	1,778.6	27.3	26.7	85.8	73.3	19,990.0	20,610.5	0.3	5.7
Berkshire Hathaway Re	U.S.	10,041.0	10,580.0	N.A.	N.A.	26.0	24.3	91.5	70.3	52,476.0	48,486.0	N.A.	N.A.
Hannover Re	Germany	9,190.8	10,125.9	-152.4	400.1	27.0	20.2	85.7	81.6	3,740.3	4,169.0	-1.5	3.4
GE Insurance Solutions (1)	U.S.	6,697.0	8,173.0	-3,253.0	-271.0	18.5	17.1	164.5	91.4	8,251.0	8,248.0	-37.5	-2.7
Lloyd's (2)	U.K.	6,566.8	6,375.7	-378.5	2,767.9	31.5	31.1	103.2	63.2	18,048.7	22,465.1	-1.7	11.1
XL Re	Bermuda	5,012.9	4,149.3	N.A.	N.A.	27.3	28.7	99.7	66.3	N.A.	N.A.	N.A.	N.A.
Everest Re	Bermuda	3,972.0	4,531.5	-371.2	470.1	26.2	24.5	94.0	74.4	4,139.7	3,712.5	-8.3	9.6
Reinsurance Group of America Inc.	U.S.	3,863.0	3,342.5	345.3	341.8	N.M.	N.M.	N.M.	N.M.	2,527.5	2,279.0	7.6	8.6
PartnerRe	Bermuda	3,615.9	3,852.7	-235.0	382.6	29.0	28.9	87.0	65.4	3,092.8	3,351.9	-5.9	9.4
Transatlantic Holdings Inc.	U.S.	3,466.4	3,749.3	-86.0	254.0	27.2	26.0	85.0	75.2	2,544.0	2,587.1	-2.3	6.4
Tokio Marine & Nichido Fire Insurance Co.	Japan	2,789.3	3,455.1	768.7	503.1	N.A.	N.A.	N.A.	N.A.	34,542.1	30,678.3	18.3	9.4
SCOR	France	2,691.8	3,329.5	56.8	136.4	33.3	33.6	74.1	69.4	2,035.7	1,820.9	1.9	3.5
Odyssey Re	U.S.	2,301.7	2,361.8	-244.5	185.3	27.1	27.3	90.5	69.9	1,623.4	1,555.0	-9.5	7.1
Korean Re	Korea	1,946.7	1,678.4	85.7	73.0	27.2	29.5	69.7	67.3	716.4	623.1	4.4	4.4
Scottish Re Group Ltd.	Cayman Islanc	1,933.9	589.4	113.6	55.5	N.M.	N.M.	N.M.	N.M.	1,271.7	862.7	4.9	6.8
Converium	Switzerland	1,815.7	3,726.1	58.8	-427.7	30.4	28.3	75.3	87.1	1,653.4	1,734.8	2.2	-10.2
Sompo Japan Insurance Inc.	Japan	1,803.9	2,052.8	596.5	738.2	31.9	32.6	25.3	68.3	19,615.6	15,613.9	21.3	21.6
Transamerica Re (AEGON) (3)	U.S.	1,741.0	953.8	959.5	1,402.3	N.M.	N.M.	N.M.	N.M.	7,079.0	7,328.2	4.4	5.3
Platinum Underwriters Holdings Ltd.	Bermuda	1,717.7	1,646.0	-159.4	113.2	27.5	27.2	87.6	70.4	1,540.2	1,133.0	-8.6	7.4
Mitsui Sumitomo Insurance Co. Ltd.	Japan	1,712.6	1,956.1	979.8	770.0	31.8	32.3	63.2	68.8	20,963.3	18,177.9	6.5	4.4
Arch Capital Group Ltd.	U.S.	1,657.5	1,588.0	272.2	186.5	31.2	28.9	66.3	63.5	2,116.4	2,005.1	15.2	11.0
ACE Tempest Re	Bermuda	1,545.7	1,524.6	-71.8	213.5	24.0	24.1	91.6	69.7	N.A.	N.A.	-4.2	14.0
Axis Capital Holdings Ltd.	Bermuda	1,491.2	1,060.4	N.A.	N.A.	19.7	21.1	86.4	63.4	3,512.4	3,238.1	N.A.	N.A.
Caisse Centrale de Réassurance	France	1,475.5	1,718.1	338.4	225.5	11.4	11.0	73.8	73.5	1,687.8	2,476.8	20.6	12.1
AXA Re	France	1,380.3	1,149.0	-42.0	142.3	33.1	40.1	88.3	61.0	1,406.0	1,521.9	-2.7	9.1
Endurance Specialty Holdings Ltd.	Bermuda	1,322.9	1,290.8	-263.4	339.7	31.3	30.4	96.8	57.3	1,872.5	1,862.7	-16.8	25.0
White Mountains Re	Bermuda	1,304.3	1,246.3	-93.6	66.4	28.2	31.2	90.2	72.6	1,971.3	1,873.3	-6.0	4.7
Revios Re (4)	Germany	1,272.8	1,420.6	89.1	66.4	N.M.	N.M.	N.M.	N.M.	707.5	722.1	5.9	4.0
Toa Re Co. Ltd.	Japan	1,210.6	1,310.3	-127.4	-12.6	28.9	29.7	90.4	88.5	2,309.4	2,143.5	-8.2	-0.8
QBE Insurance Group Ltd.	Australia	1,190.1	1,305.0	69.1	123.4	30.1	32.2	71.8	64.9	899.6	776.4	3.2	7.8
RenaissanceRe Holdings Ltd.	Bermuda	1,165.6	1,114.5	-274.5	109.7	23.1	22.5	116.6	81.9	1,753.8	2,144.0	-16.8	7.2
Aioi Insurance Co. Ltd.	Japan	1,152.1	1,370.4	154.5	20.0	34.0	34.1	60.9	64.8	7,233.6	6,243.1	N.A.	N.A.
Aspen Insurance Holdings Ltd.	Bermuda	1,129.0	1,009.1	-156.0	266.7	27.2	25.1	100.8	59.6	2,039.8	1,481.5	-9.5	20.5
General Insurance Corp. of India	India	1,120.5	1,053.6	131.6	182.7	28.4	28.4	94.5	84.7	1,049.1	973.6	9.1	13.9
Mapfre Re	Spain	1,081.9	1,053.1	63.0	103.8	32.0	33.2	67.6	58.5	737.4	732.5	6.0	11.3
Manulife Financial Corp. (reinsurance div)	Canada	1,043.7	815.1	-76.3	261.5	N.M.	N.M.	N.M.	N.M.	N.A.	N.A.	-6.2	26.1
Chubb Re (5)	U.S.	904.0	1,138.7	N.A.	N.A.	34.7	32.4	61.5	62.2	N.A.	N.A.	N.A.	N.A.
Alea Group Holdings (Bermuda) Ltd.	Bermuda	736.5	1,296.2	-213.9	6.7	39.7	32.7	84.6	71.9	490.4	716.5	-18.1	0.5
Montpelier Re Holdings Ltd.	Bermuda	723.1	749.3	-794.5	233.2	22.7	26.4	178.0	51.4	1,057.7	1,751.9	-85.8	27.0

- In 2006, Swiss Re acquired GE Insurance Solutions. 17.00%
  - Net premiums written and the combined ratio relate to reinsurance business only; all other items include direct business.
  - Figures are based on regulatory data and refer to the reinsurance division only.
  - Figures are based on unaudited financial data.
  - In 2006, Chubb Corp. sold its reinsurance business to Harbor Point Ltd.
- N.A. -- Not available. N.M. Not meaningful.

**Table 5.6**  
**Net Premiums Written By Global Reinsurers**

<b>Year</b>	<b>Bermuda</b>	<b>France</b>	<b>Germany</b>	<b>Ireland</b>	<b>Japan</b>	<b>Switzerland</b>	<b>UK</b>	<b>US</b>	<b>Rest of World</b>	<b>Total</b>
2005	16,227	5,733	34,591	3,651	10,301	15,651	10,571	36,523	16,266	149,515
2004	14,203	5,424	45,419	3,031	12,079	23,462	12,597	35,034	15,650	166,899
2003	13,830	5,823	46,707	3,934	11,781	20,205	13,145	35,084	13,040	163,550
2002	11,229	5,790	41,683	2,976	9,144	17,205	10,988	30,221	13,690	142,925
2001	7,475	3,519	28,416	2,512	4,987	9,092	8,534	26,278	11,897	102,710
2000	5,703	4,682	27,012	2,048	4,970	7,906	6,454	25,229	4,818	88,820
1999	3,878	4,454	25,429	1,606	5,995	7,995	6,719	22,527	8,902	87,505
1998	3,584	4,136	27,570	1,610	5,051	9,579	6,165	21,046	10,806	89,548
1997	4,123	4,919	25,101	1,485	5,971	8,615	6,361	21,953	9,828	88,355
1996	3,928	5,207	22,404	790	6,212	10,298	6,934	20,072	10,108	85,953

Note: Premiums are in millions of US dollars.

<b>Year</b>	<b>Bermuda</b>	<b>France</b>	<b>Germany</b>	<b>Ireland</b>	<b>Japan</b>	<b>Switzerland</b>	<b>UK</b>	<b>US</b>	<b>Rest of World</b>	<b>Total</b>
2005	10.9%	3.8%	23.1%	2.4%	6.9%	10.5%	7.1%	24.4%	10.9%	100.0%
2004	8.5%	3.2%	27.2%	1.8%	7.2%	14.1%	7.5%	21.0%	9.4%	100.0%
2003	8.5%	3.6%	28.6%	2.4%	7.2%	12.4%	8.0%	21.5%	8.0%	100.0%
2002	7.9%	4.1%	29.2%	2.1%	6.4%	12.0%	7.7%	21.1%	9.6%	100.0%
2001	7.3%	3.4%	27.7%	2.4%	4.9%	8.9%	8.3%	25.6%	11.6%	100.0%
2000	6.4%	5.3%	30.4%	2.3%	5.6%	8.9%	7.3%	28.4%	5.4%	100.0%
1999	4.4%	5.1%	29.1%	1.8%	6.9%	9.1%	7.7%	25.7%	10.2%	100.0%
1998	4.0%	4.6%	30.8%	1.8%	5.6%	10.7%	6.9%	23.5%	12.1%	100.0%
1997	4.7%	5.6%	28.4%	1.7%	6.8%	9.8%	7.2%	24.8%	11.1%	100.0%
1996	4.6%	6.1%	26.1%	0.9%	7.2%	12.0%	8.1%	23.4%	11.8%	100.0%

Source: Standard & Poor's Global Reinsurance Highlights, various years.

**Table 5.7**  
**Global Reinsurers: Adjusted Shareholders Funds**

<b>Year</b>	<b>Bermuda</b>	<b>France</b>	<b>Germany</b>	<b>Ireland</b>	<b>Japan</b>	<b>Switzerland</b>	<b>UK</b>	<b>US Rest of World</b>	<b>Total</b>	
2005	30,963	4,875	52,573	3,085	102,646	13,738	25,822	77,494	18,593	329,789
2004	27,177	7,440	118,777	2,563	83,457	14,238	32,606	73,944	17,174	377,375
2003	22,856	4,991	105,957	2,836	79,339	12,587	28,482	65,855	15,360	338,262
2002	16,859	4,166	73,832	2,065	56,374	12,587	19,652	47,026	12,241	244,801
2001	13,348	2,637	106,781	1,286	58,909	7,052	9,918	41,795	8,249	249,974
2000	11,277	2,395	118,408	1,467	69,930	6,238	11,252	51,111	9,463	281,541
1999	11,263	2,427	106,269	1,349	58,218	6,231	11,451	53,133	9,651	259,991
1998	11,765	6,688	75,541	1,616	69,331	6,352	13,148	56,277	-20,122	220,596
1997	11,718	6,877	48,850	1,260	80,444	5,583	14,612	64,487	12,155	245,985
1996	10,226	6,216	22,962	1,216	82,822	6,405	14,626	51,360	12,171	208,003

Note: Data are in millions of US dollars.

**Percentage of Adjusted Shareholders Funds By Jurisdiction**

<b>Year</b>	<b>Bermuda</b>	<b>France</b>	<b>Germany</b>	<b>Ireland</b>	<b>Japan</b>	<b>Switzerland</b>	<b>UK</b>	<b>US Rest of World</b>	<b>Total</b>	
2005	9.4%	1.5%	15.9%	0.9%	31.1%	4.2%	7.8%	23.5%	5.6%	100.0%
2004	7.2%	2.0%	31.5%	0.7%	22.1%	3.8%	8.6%	19.6%	4.6%	100.0%
2003	6.8%	1.5%	31.3%	0.8%	23.5%	3.7%	8.4%	19.5%	4.5%	100.0%
2002	6.9%	1.7%	30.2%	0.8%	23.0%	5.1%	8.0%	19.2%	5.0%	100.0%
2001	5.3%	1.1%	42.7%	0.5%	23.6%	2.8%	4.0%	16.7%	3.3%	100.0%
2000	4.0%	0.9%	42.1%	0.5%	24.8%	2.2%	4.0%	18.2%	3.4%	100.0%
1999	4.3%	0.9%	40.9%	0.5%	22.4%	2.4%	4.4%	20.4%	3.7%	100.0%
1998	5.3%	3.0%	34.2%	0.7%	31.4%	2.9%	6.0%	25.5%	-9.1%	100.0%
1997	4.8%	2.8%	19.9%	0.5%	32.7%	2.3%	5.9%	26.2%	4.9%	100.0%
1996	4.9%	3.0%	11.0%	0.6%	39.8%	3.1%	7.0%	24.7%	5.9%	100.0%

Source: Standard & Poor's Global Reinsurance Highlights, various years.

**Table 5.8**  
**Global Reinsurers: Combined Ratios**

Year	Bermuda	France	Germany	Ireland	Switzerland	UK	US	Total
1996	69.3	99.6	99.1	100.3	108.2	101.4	100.4	98.2
1997	76.1	100.5	102.5	105.3	104.2	108.0	97.3	100.8
1998	85.8	99.4	108.0	106.2	104.6	108.4	102.4	102.0
1999	105.8	130.5	113.7	110.8	119.6	123.3	112.1	113.1
2000	110.7	109.4	111.4	109.5	124.1	128.9	114.5	113.1
2001	119.3	112.7	125.1	112.3	129.7	151.1	139.2	128.4
2002	94.0	114.9	107.0	103.9	90.6	102.4	115.7	104.7
2003	79.3	115.7	97.2	113.5	97.0	91.9	101.0	95.4
2004	89.0	95.0	94.3	120.5	102.7	95.8	104.9	97.9
2005	137.6	100.3	108.7	104.7	113.0	129.3	128.3	116.6

Note: Combined ratios are often missing for Japan and hence Japan is omitted from this table.

Source: Standard & Poor's Global Reinsurance Highlights, various years.

**Table 5.9**  
**Global Reinsurers: Returns on Revenue**

Year	Bermuda	France	Germany	Ireland	Japan	Switzerland	UK	US	Total
2005	-19.8	12.4	1.3	6.6	11.1	0.6	1.8	-10.1	-1.5
2004	20.5	10.6	1.5	3.3	8.4	2.5	14.3	5.0	6.4
2003	27.1	-12.2	12.3	9.1	21.5	7.7	11.5	7.1	11.4
2002	22.4	-13.5	-13.5	9.7	9.7	17.1	11.6	63.3	4.4
2001	-1.4	-6.0	-9.3	7.3	5.1	-10.8	-32.4	-22.4	-8.9
2000	4.3	2.3	3.0	6.9	2.5	-2.5	-1.7	-1.5	3.3
1999	13.2	-6.2	7.8	12.2	1.8	-1.3	-8.7	0.6	3.3
1998	27.2	8.9	6.4	10.5	2.5	7.2	10.6	14.6	10.7
1997	44.0	14.7	9.1	13.0	4.2	14.1	20.0	18.3	13.1
1996	45.0	13.1	10.2	16.0	5.7	11.4	20.3	14.1	12.0

Source: Standard & Poor's Global Reinsurance Highlights, various years.

**Table 5.10**  
**Asia: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Total Assetsb	Total surplusb	Gross Premiums Writtenb	Net Premiums Writtenb	Net Premiums Earnedb	Underwriting Profitb	Pretax Profitb
1992	15	1,063,684	313,894	772,731	509,497	461,444	(26,300)	38,949
1993	81	19,546,528	5,359,464	10,172,005	7,429,017	6,781,448	378,028	1,045,580
1994	108	241,663,296	115,593,561	79,452,070	62,895,222	62,390,420	503,313	3,601,245
1995	113	287,902,339	112,080,515	94,788,924	75,478,910	74,722,431	2,700,776	4,935,712
1996	113	261,608,523	120,981,923	87,992,269	69,863,893	68,355,553	2,783,061	5,189,023
1997	110	228,332,965	91,089,640	75,437,996	60,218,170	59,651,929	1,128,075	4,012,301
1998	103	201,029,064	72,600,313	61,510,764	49,587,922	49,465,518	1,625,415	3,611,629
1999	109	273,761,760	89,761,162	79,057,340	65,128,827	62,327,090	584,840	4,074,732
2000	109	322,319,008	123,225,367	90,631,549	75,372,205	71,816,245	(1,262,873)	3,498,640
2001	99	832,791,794	116,409,614	149,448,986	134,925,426	128,670,859	2,475,639	5,631,202
2002	106	354,103,181	80,430,422	95,899,486	81,016,570	72,218,872	(3,972,259)	1,350,611
2003	95	354,295,655	79,953,973	108,590,228	88,708,951	83,399,575	(618,637)	3,988,877
2004	77	330,600,919	99,010,236	96,938,599	77,773,622	76,598,756	1,677,222	6,653,500
2005	42	316,455,760	99,285,278	90,199,536	73,109,222	72,618,884	(941,145)	5,487,173

**Asia: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Combined Ratio	Underwriting Expense Ratio	Loss Ratio	Overall Operating Ratio	Pretax profit/Avg. Total Surplus	Technical reserves/ Avg.Total Surplus	Financial Ratingc
1992	15	1.0408	0.3240	0.7168	0.9263	0.1234	1.6634	6.0000
1993	81	0.9183	0.2323	0.6861	0.7640	0.1979	1.9976	4.0792
1994	108	0.9578	0.3612	0.5966	0.8880	0.0312	1.6146	2.3260
1995	113	0.9298	0.3589	0.5709	0.8716	0.0433	1.9208	2.6462
1996	113	0.9143	0.3490	0.5654	0.8566	0.0445	1.6859	2.2296
1997	110	0.9476	0.3761	0.5714	0.8980	0.0391	1.6501	2.3835
1998	103	0.9374	0.3755	0.5619	0.8766	0.0460	1.8563	2.3553
1999	109	0.9750	0.3684	0.6066	0.9194	0.0476	2.3702	2.3714
2000	109	0.9704	0.3614	0.6090	0.9186	0.0328	2.1739	3.2698
2001	99	0.9847	0.2370	0.7477	0.9615	0.0420	4.9121	2.5904
2002	106	0.9335	0.3085	0.6250	0.8953	0.0162	2.6105	2.7569
2003	95	0.9074	0.3165	0.5909	0.8699	0.0504	3.1091	2.7611
2004	77	0.9066	0.3328	0.5738	0.8719	0.0777	2.3616	2.6034
2005	42	0.9855	0.3211	0.6644	0.9440	0.0588	2.0189	3.0073

Source: Standard & Poor's ClassicDirect and Eurothesys databases.

<sup>a</sup>Groups and unaffiliates. <sup>b</sup>U.S. dollars in thousands. <sup>c</sup>Ratings converted to numeric values. See report footnote.

**Table 5.11**  
**Bermuda: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Total Assets <sup>b</sup>	Total surplus <sup>b</sup>	Gross Premiums Written <sup>b</sup>	Net Premiums Written <sup>b</sup>	Net Premiums Earned <sup>b</sup>	Underwriting Profit <sup>b</sup>	Pretax Profit <sup>b</sup>
1992	10	14,661,583	3,914,058	5,788,852	4,885,179	5,001,653	53,352	482,584
1993	21	37,976,912	12,723,542	12,635,722	10,665,190	10,447,117	96,015	1,969,922
1994	23	26,546,284	11,066,293	7,787,667	6,282,618	6,029,130	(69,225)	932,467
1995	31	40,892,675	15,576,475	13,418,771	9,468,003	9,127,666	(20,408)	2,072,131
1996	30	46,066,897	18,332,808	13,924,506	9,578,612	9,334,529	(70,459)	2,373,631
1997	34	53,914,086	22,745,241	14,958,644	10,521,872	10,412,565	38,694	3,405,128
1998	32	69,921,992	27,384,604	20,390,627	13,424,178	12,865,477	(1,009,650)	2,681,438
1999	33	90,863,483	28,735,996	26,509,905	17,125,956	16,567,676	(1,448,007)	2,049,400
2000	33	94,870,657	28,838,134	34,033,155	21,556,756	20,879,396	(2,715,573)	583,504
2001	33	104,509,370	31,174,938	37,060,466	23,519,186	23,286,787	(5,823,565)	(1,974,905)
2002	41	139,364,356	43,189,492	51,591,371	37,344,459	31,793,894	(239,842)	2,342,341
2003	37	161,269,253	49,908,139	62,475,404	48,557,164	44,426,969	2,546,579	7,896,558
2004	38	197,964,870	61,152,081	72,261,866	56,806,697	54,543,602	1,195,731	6,790,654
2005	33	220,982,209	60,993,244	74,397,650	57,426,250	56,861,628	(7,364,645)	(1,824,543)

**Bermuda: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Combined Ratio	Underwriting Expense Ratio	Loss Ratio	Overall Operating Ratio	Pretax profit/Avg. Total Surplus	Technical reserves/ Avg.Total Surplus	Financial Rating <sup>c</sup>
1992	10	1.0743	0.2994	0.7749	1.0036	0.1322	2.6617	3.2972
1993	21	1.0341	0.2630	0.7711	0.9241	0.1616	1.7495	3.2008
1994	23	1.0032	0.2220	0.7813	0.8242	0.0826	1.1732	3.8663
1995	31	0.9890	0.2315	0.7575	0.8041	0.1447	1.4920	3.7084
1996	30	0.9990	0.2414	0.7576	0.8087	0.1387	1.3487	3.3941
1997	34	0.9993	0.2471	0.7522	0.8043	0.1593	1.2002	3.1514
1998	32	1.0630	0.2548	0.8082	0.8650	0.1073	1.3048	2.9525
1999	33	1.0866	0.2812	0.8054	0.9149	0.0728	1.5267	2.9060
2000	33	1.1299	0.2787	0.8512	0.9956	0.0204	1.6597	2.7725
2001	33	1.2533	0.2720	0.9813	1.1138	-0.0632	1.6317	2.6497
2002	41	0.9641	0.2367	0.7275	0.8639	0.0569	1.5159	2.3843
2003	37	0.9136	0.2385	0.6751	0.8255	0.1791	1.7609	2.8014
2004	38	0.9663	0.2484	0.7179	0.8820	0.1169	1.6067	2.7422
2005	33	1.1357	0.2388	0.8969	1.0347	-0.0308	1.8627	2.9621

Source: Standard & Poor's ClassicDirect and Eurothesys databases.

<sup>a</sup>Groups and unaffiliates. <sup>b</sup>U.S. dollars in thousands. <sup>c</sup>Ratings converted to numeric values. See report footnote.

**Table 5.12**  
**United Kingdom: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Total Assets <sup>b</sup>	Total surplus <sup>b</sup>	Gross Premiums Written <sup>b</sup>	Net Premiums Written <sup>b</sup>	Net Premiums Earned <sup>b</sup>	Underwriting Profit <sup>b</sup>	Pretax Profit <sup>b</sup>
1992	16	26,554,596	4,845,862	12,172,397	10,341,617	10,046,665	(1,903,965)	431,162
1993	14	56,599,287	13,560,873	21,911,774	16,302,447	16,136,110	(1,393,014)	1,575,246
1994	9	77,296,381	13,152,214	24,511,590	18,305,026	18,132,236	(995,992)	1,732,368
1995	115	832,807,236	84,790,830	160,260,932	139,904,173	139,005,000	(35,504,003)	15,736,675
1996	127	964,575,323	93,542,402	172,693,953	153,677,433	153,305,959	(46,286,779)	16,736,305
1997	137	1,214,012,684	116,745,952	163,880,439	147,852,994	147,052,074	(86,590,596)	20,570,996
1998	138	1,300,271,684	127,389,649	163,076,504	146,074,216	144,580,146	(122,781,458)	14,139,433
1999	132	1,533,897,560	130,227,851	189,359,638	171,582,642	170,094,507	(124,569,817)	19,044,983
2000	134	1,678,683,596	136,541,150	260,537,029	236,355,255	233,819,619	(54,096,403)	4,402,609
2001	130	1,775,354,196	131,425,578	231,204,428	200,234,306	198,093,922	(2,515,259)	9,495,605
2002	130	1,915,640,346	147,018,279	269,904,338	221,977,752	217,902,058	37,957,953	5,754,249
2003	130	2,347,509,752	177,391,126	299,255,359	246,993,239	246,355,812	(123,742,756)	16,580,542
2004	123	2,717,835,280	189,232,509	310,756,446	266,099,395	264,855,457	(141,154,990)	20,795,754
2005	82	1,335,941,608	115,305,695	142,691,869	115,819,891	115,647,008	(63,594,228)	23,631,721

**United Kingdom: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Combined Ratio	Underwriting Expense Ratio	Loss Ratio	Overall Operating Ratio	Pretax profit/Avg. Total Surplus	Technical reserves/ Avg.Total Surplus	Financial Rating <sup>c</sup>
1992	16	1.1804	0.3104	0.8700	1.0470	0.0876	3.7666	5.1792
1993	14	1.0838	0.3138	0.7699	0.9477	0.1236	2.9156	3.5156
1994	9	1.0512	0.3105	0.7407	0.9212	0.1256	3.9628	3.6695
1995	115	0.9788	0.2458	0.7330	0.8677	0.1876	5.9061	3.3963
1996	127	0.9910	0.2319	0.7591	0.8849	0.1855	5.9546	3.5110
1997	137	0.9759	0.2118	0.7642	0.8829	0.1802	5.5778	2.6922
1998	138	1.0385	0.2181	0.8205	0.9516	0.1215	5.7945	1.8205
1999	132	0.9717	0.1968	0.7749	0.9061	0.1484	5.4994	1.9537
2000	134	0.9207	0.1633	0.7574	0.8726	0.0329	5.9694	1.8304
2001	130	0.9823	0.1806	0.8017	0.9389	0.0664	6.6655	1.8588
2002	130	0.9796	0.1697	0.8099	0.9427	0.0382	7.1620	1.9190
2003	130	1.0196	0.1765	0.8431	0.9773	0.0991	7.6679	2.2277
2004	123	1.0167	0.1790	0.8377	0.9797	0.1139	7.6725	2.1364
2005	82	1.0807	0.2176	0.8631	0.9467	0.2100	4.8273	2.1316

Source: Standard & Poor's ClassicDirect and Eurothesys databases.

<sup>a</sup>Groups and unaffiliates. <sup>b</sup>U.S. dollars in thousands. <sup>c</sup>Ratings converted to numeric values. See report footnote.



**Table 5.13**  
**Continental Europe UK: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Total Assetsb	Total surplusb	Gross Premiums Writtenb	Net Premiums Writtenb	Net Premiums Earnedb	Underwriting Profitb	Pretax Profitb
1992	84	51,051,196	11,950,817	22,622,654	18,186,107	17,871,543	(3,152,064)	89,396
1993	226	294,867,514	75,427,457	130,044,947	100,883,816	98,575,302	(10,592,569)	6,746,482
1994	215	381,680,806	85,566,987	159,434,816	125,803,161	123,869,600	(9,230,881)	9,736,139
1995	463	2,529,511,188	270,826,476	532,236,706	468,716,703	463,393,583	(51,363,829)	42,692,176
1996	482	2,825,143,512	360,580,963	667,561,697	567,668,477	553,733,814	(61,525,262)	65,227,792
1997	487	3,095,653,566	442,202,940	559,423,226	498,291,193	496,776,986	(74,055,423)	53,894,382
1998	501	3,791,910,709	528,372,767	629,525,875	565,841,862	563,266,583	(86,931,982)	63,101,209
1999	503	4,165,720,204	548,607,992	660,789,570	594,107,490	588,969,758	(123,898,905)	73,585,597
2000	539	4,177,604,350	518,248,505	721,441,840	646,351,487	639,674,267	(51,806,959)	65,532,421
2001	542	3,561,943,706	431,021,249	645,020,076	564,040,856	556,424,234	(5,159,438)	20,394,303
2002	548	4,305,999,329	420,095,639	806,499,282	708,928,859	696,692,916	24,636,183	21,101,198
2003	555	5,375,823,415	539,156,205	965,233,548	855,871,352	849,964,948	(143,155,407)	70,482,148
2004	523	5,953,421,033	648,278,391	1,041,584,520	930,667,800	926,133,441	(121,419,393)	95,966,166
2005	332	3,538,347,904	502,589,644	592,229,164	512,762,224	509,316,156	(69,879,513)	71,230,658

**Continental Europe UK: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Combined Ratio	Underwriting Expense Ratio	Loss Ratio	Overall Operating Ratio	Pretax profit/Avg. Total Surplus	Technical reserves/ Avg.Total Surplus	Financial Ratingc
1992	84	1.1806	0.3070	0.8736	1.0330	0.0072	2.8342	4.5515
1993	226	1.1059	0.2891	0.8168	0.9706	0.0894	2.4873	3.4030
1994	215	1.0787	0.2828	0.7959	0.9563	0.1197	3.0547	3.2560
1995	463	0.8930	0.1816	0.7114	0.7680	0.1633	6.2134	2.8993
1996	482	0.9164	0.2143	0.7021	0.7827	0.2027	5.3133	2.5436
1997	487	0.9518	0.1867	0.7651	0.8058	0.0958	3.2604	2.6472
1998	501	0.9517	0.1881	0.7636	0.8045	0.1261	4.3868	2.5494
1999	503	0.9287	0.1787	0.7499	0.7783	0.1110	3.3406	2.4022
2000	539	0.9289	0.1900	0.7389	0.8214	0.1253	4.4861	2.4944
2001	542	0.9147	0.1898	0.7249	0.7851	0.0318	3.1785	3.3908
2002	548	0.9027	0.1796	0.7231	0.7975	0.0354	4.3945	2.9530
2003	555	0.8896	0.1760	0.7136	0.7494	0.1428	6.5035	2.9903
2004	523	0.8847	0.1736	0.7111	0.7549	0.1579	5.7559	3.0316
2005	332	0.8980	0.1660	0.7320	0.7540	0.1511	4.2861	2.8608

Source: Standard & Poor's ClassicDirect and Eurothesys databases.

<sup>a</sup>Groups and unaffiliates. <sup>b</sup>U.S. dollars in thousands. <sup>c</sup>Ratings converted to numeric values. See report footnote.

**Table 5.14**  
**United States: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Total Assets <sup>b</sup>	Total surplus <sup>b</sup>	Gross Premiums Written <sup>b</sup>	Net Premiums Written <sup>b</sup>	Net Premiums Earned <sup>b</sup>	Underwriting Profit <sup>b</sup>	Pretax Profit <sup>b</sup>
1992	15	23,271,933	6,407,461	11,047,273	7,569,591	7,441,758	(1,096,033)	1,193,524
1993	82	275,507,791	77,225,314	135,385,527	87,264,660	85,655,259	(7,660,079)	9,506,466
1994	81	291,658,670	82,775,207	142,091,120	92,165,279	89,765,051	(7,769,494)	6,164,029
1995	184	579,967,707	186,871,718	292,940,435	191,568,112	187,397,343	(10,687,839)	20,995,167
1996	198	806,030,079	236,933,308	430,600,889	319,807,639	311,749,731	(28,493,405)	18,761,541
1997	193	677,680,752	259,625,173	318,745,138	207,295,639	201,916,088	(5,017,457)	36,718,673
1998	804	824,295,749	325,763,865	388,798,076	249,741,275	245,517,024	(14,519,557)	37,480,424
1999	812	813,884,499	325,970,850	396,222,724	250,477,669	245,722,475	(18,558,659)	23,815,197
2000	815	890,727,748	325,691,059	425,627,944	263,356,772	258,132,122	(23,910,603)	25,599,984
2001	811	863,731,996	302,161,385	467,918,463	286,088,704	274,858,975	(41,454,830)	(2,675,846)
2002	819	920,478,814	298,212,410	540,622,176	336,877,995	317,226,892	(23,586,041)	13,875,147
2003	788	1,036,787,639	356,468,497	593,548,649	370,945,950	353,981,091	(2,457,166)	39,006,522
2004	773	1,141,589,794	411,078,538	616,285,351	382,564,210	372,912,706	7,376,496	53,618,596
2005	755	1,189,567,571	433,161,794	636,702,230	394,192,808	386,383,700	(2,089,616)	53,923,482

**United States: Key Insurance Operating Statistics 1992 - 2005**

year	# of Obs.a	Combined Ratio	Underwriting Expense Ratio	Loss Ratio	Overall Operating Ratio	Pretax profit/Avg. Total Surplus	Technical reserves/ Avg.Total Surplus	Financial Rating <sup>c</sup>
1992	15	1.1313	0.2848	0.8465	0.9603	0.1717	2.2030	4.0722
1993	82	1.0767	0.2659	0.8109	0.9259	0.1243	2.3193	3.5003
1994	81	1.0710	0.2620	0.8090	0.9221	0.0769	2.3421	3.5251
1995	184	1.0303	0.2493	0.7810	0.8910	0.1188	1.9352	3.5067
1996	198	1.0721	0.2979	0.7742	0.9404	0.0885	2.2994	3.1982
1997	193	0.9790	0.2556	0.7235	0.8184	0.1490	1.4366	2.1233
1998	804	1.0304	0.2690	0.7614	0.8894	0.1187	1.3063	2.1688
1999	812	1.0623	0.2744	0.7880	0.9276	0.0742	1.2577	1.9621
2000	815	1.0720	0.2684	0.8036	0.9302	0.0766	1.2290	1.8467
2001	811	1.1388	0.2614	0.8773	1.0166	-0.0084	1.3578	2.0353
2002	819	1.0543	0.2512	0.8031	0.9410	0.0463	1.6148	2.2176
2003	788	0.9867	0.2479	0.7388	0.8872	0.1205	1.6331	2.3852
2004	773	0.9668	0.2520	0.7148	0.8682	0.1394	1.4993	2.3034
2005	755	0.9956	0.2490	0.7466	0.8815	0.1302	1.4692	2.3578

Source: Standard & Poor's ClassicDirect and Eurothesys databases.

<sup>a</sup>Groups and unaffiliates. <sup>b</sup>U.S. dollars in thousands. <sup>c</sup>Ratings converted to numeric values. See report footnote.

**Table 6.1**  
**Dependence of U.S. Insurers on Alien Reinsurance**

<b>Year</b>	<b>No. Alien Jurisdictions</b>	<b>Total No. Alien Reinsurers</b>	<b>No. Alien Reinsurers*</b>	<b>Ceded Premiums</b>	<b>Net Recoverables</b>	<b>Policyholders Surplus</b>	<b>Recoverables/ Surplus</b>
1996	97	2,670	NA	14,719	41,471	311,900	13.3%
1997	101	2,822	1,846	15,753	42,834	384,136	11.2%
1998	96	2,830	2,009	17,345	46,416	419,868	11.1%
1999	98	3,336	2,132	22,861	52,873	424,056	12.5%
2000	105	3,371	2,155	25,118	57,703	396,189	14.6%
2001	98	4,013	2,287	37,317	80,662	370,464	21.8%
2002	96	4,164	2,290	46,169	93,937	372,097	25.2%
2003	102	4,305	2,344	53,509	102,362	445,313	23.0%
2004	100	4,113	2,330	53,102	106,661	499,610	21.3%
2005	105	4,007	2,321	62,062	123,938	540,163	22.9%

\*Number of alien reinsurers assuming reinsurance from U.S. insurers.

Source: Data on alien reinsurance from Reinsurance Association of America (2006); data on policyholders surplus from A.M. Best Company (2005, 2006e).

Note: Monetary statistics are in millions of U.S. dollars, not adjusted for price level changes.

**Table 6.2****Premiums Ceded to Unaffiliated Alien Reinsurers By Jurisdiction: Amount (\$ Millions)**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1990	1,027	1,945	318	161	143	250	63	122	7	1,113	5,149
1991	2,510	2,395	495	68	109	802	14	362	33	1,411	8,199
1992	2,198	2,919	694	159	224	448	76	354	13	1,335	8,420
1993	3,426	2,640	730	346	246	665	114	470	27	1,201	9,865
1994	3,977	2,695	775	183	191	792	455	410	59	1,232	10,769
1995	4,395	2,778	925	294	166	1,070	309	441	145	1,258	11,781
1996	3,884	2,513	961	466	179	122	613	331	239	1,411	10,719
1997	3,473	2,403	730	509	168	154	375	397	235	1,607	10,051
1998	3,010	2,892	815	569	636	230	399	461	291	1,601	10,904
1999	4,418	3,421	1,042	653	237	728	647	497	316	2,053	14,012
2000	4,401	3,694	1,472	661	513	1,126	829	630	341	1,732	15,399
2001	6,126	3,898	1,765	982	1,024	1,935	3,023	946	420	1,339	21,458
2002	7,193	3,854	2,659	1,205	1,192	1,001	1,423	896	442	1,410	21,275
2003	7,067	3,872	2,799	1,455	1,784	1,053	2,273	473	564	1,506	22,846
2004	7,795	4,144	2,869	1,618	1,533	841	852	401	447	1,461	21,961
2005	8,908	4,827	2,529	1,780	950	837	788	600	382	1,645	23,246

**Premiums Ceded to Unaffiliated Alien Reinsurers By Jurisdiction: Percentage**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1990	19.9%	37.8%	6.2%	3.1%	2.8%	4.9%	1.2%	2.4%	0.1%	21.6%	100.0%
1991	30.6%	29.2%	6.0%	0.8%	1.3%	9.8%	0.2%	4.4%	0.4%	17.2%	100.0%
1992	26.1%	34.7%	8.2%	1.9%	2.7%	5.3%	0.9%	4.2%	0.2%	15.9%	100.0%
1993	34.7%	26.8%	7.4%	3.5%	2.5%	6.7%	1.2%	4.8%	0.3%	12.2%	100.0%
1994	36.9%	25.0%	7.2%	1.7%	1.8%	7.4%	4.2%	3.8%	0.5%	11.4%	100.0%
1995	37.3%	23.6%	7.9%	2.5%	1.4%	9.1%	2.6%	3.7%	1.2%	10.7%	100.0%
1996	36.2%	23.4%	9.0%	4.3%	1.7%	1.1%	5.7%	3.1%	2.2%	13.2%	100.0%
1997	34.6%	23.9%	7.3%	5.1%	1.7%	1.5%	3.7%	3.9%	2.3%	16.0%	100.0%
1998	27.6%	26.5%	7.5%	5.2%	5.8%	2.1%	3.7%	4.2%	2.7%	14.7%	100.0%
1999	31.5%	24.4%	7.4%	4.7%	1.7%	5.2%	4.6%	3.5%	2.3%	14.7%	100.0%
2000	28.6%	24.0%	9.6%	4.3%	3.3%	7.3%	5.4%	4.1%	2.2%	11.2%	100.0%
2001	28.5%	18.2%	8.2%	4.6%	4.8%	9.0%	14.1%	4.4%	2.0%	6.2%	100.0%
2002	33.8%	18.1%	12.5%	5.7%	5.6%	4.7%	6.7%	4.2%	2.1%	6.6%	100.0%
2003	30.9%	16.9%	12.3%	6.4%	7.8%	4.6%	9.9%	2.1%	2.5%	6.6%	100.0%
2004	35.5%	18.9%	13.1%	7.4%	7.0%	3.8%	3.9%	1.8%	2.0%	6.7%	100.0%
2005	38.3%	20.8%	10.9%	7.7%	4.1%	3.6%	3.4%	2.6%	1.6%	7.1%	100.0%

Note: Data are taken from RAA (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2005, 2006). The RAA produced the report internally beginning in 2000. Before 2000, RAA contracted with ISO to produce the report. Thus, the 1996-2005 reports use a slightly different methodology than the earlier reports.

The report was not produced from 1997-1999. The numbers for 1997-2000 differ in the 2000 and 2001 reports. The 2001 report numbers are used for 1997-2001.

**Table 6.3****Recoverables from Unaffiliated Alien Reinsurers By Jurisdiction: Amount (\$ Millions)**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1991	6,808	7,606	2,042	362	555	2,664	81	955	103	4,153	25,329
1992	6,660	10,196	2,687	487	718	2,219	89	1,179	43	4,371	28,649
1993	9,294	8,969	2,557	702	708	3,213	599	1,368	44	3,950	31,404
1994	9,800	8,497	2,617	610	669	3,604	550	1,522	36	3,866	31,771
1995	9,294	9,494	2,606	408	636	3,290	760	1,523	47	4,652	32,710
1996	8,940	9,831	2,808	848	584	3,268	1,123	1,499	60	3,751	32,712
1997	6,639	8,815	2,268	945	530	3,030	1,207	1,450	NA	945	25,829
1998	6,319	9,894	2,385	978	1,082	3,066	1,463	1,583	NA	961	27,731
1999	7,695	10,653	2,435	1,176	1,118	3,102	2,203	1,613	136	154	30,285
2000	9,271	10,158	3,920	1,191	1,093	4,299	2,306	1,531	215	700	34,684
2001	10,386	13,583	5,537	1,447	1,876	5,693	6,164	2,373	327	1,995	49,381
2002	11,951	12,142	6,039	1,776	3,043	6,352	6,961	1,883	374	4,343	54,864
2003	11,735	11,903	6,499	2,240	5,597	4,632	7,857	1,290	393	2,820	54,966
2004	12,597	12,086	5,483	2,632	5,254	4,081	6,714	1,276	417	3,099	53,639
2005	16,673	15,972	5,800	3,082	3,131	2,525	2,591	1,602	472	3,634	55,482

**Recoverables from Unaffiliated Alien Reinsurers By Jurisdiction: Percentage**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1991	23.2%	35.6%	9.4%	1.7%	2.5%	7.7%	0.3%	4.1%	0.2%	15.3%	100.0%
1992	23.2%	35.6%	9.4%	1.7%	2.5%	7.7%	0.3%	4.1%	0.2%	15.3%	100.0%
1993	29.6%	28.6%	8.1%	2.2%	2.3%	10.2%	1.9%	4.4%	0.1%	12.6%	100.0%
1994	30.8%	26.7%	8.2%	1.9%	2.1%	11.3%	1.7%	4.8%	0.1%	12.2%	100.0%
1995	28.4%	29.0%	8.0%	1.2%	1.9%	10.1%	2.3%	4.7%	0.1%	14.2%	100.0%
1996	27.3%	30.1%	8.6%	2.6%	1.8%	10.0%	3.4%	4.6%	0.2%	11.5%	100.0%
1997	25.7%	34.1%	8.8%	3.7%	2.1%	11.7%	4.7%	5.6%	NA	3.7%	100.0%
1998	22.8%	35.7%	8.6%	3.5%	3.9%	11.1%	5.3%	5.7%	NA	3.5%	100.0%
1999	25.4%	35.2%	8.0%	3.9%	3.7%	10.2%	7.3%	5.3%	0.4%	0.5%	100.0%
2000	26.7%	29.3%	11.3%	3.4%	3.2%	12.4%	6.6%	4.4%	0.6%	2.0%	100.0%
2001	21.0%	27.5%	11.2%	2.9%	3.8%	11.5%	12.5%	4.8%	0.7%	4.0%	100.0%
2002	21.8%	22.1%	11.0%	3.2%	5.5%	11.6%	12.7%	3.4%	0.7%	7.9%	100.0%
2003	21.3%	21.7%	11.8%	4.1%	10.2%	8.4%	14.3%	2.3%	0.7%	5.1%	100.0%
2004	23.5%	22.5%	10.2%	4.9%	9.8%	7.6%	12.5%	2.4%	0.8%	5.8%	100.0%
2005	30.1%	28.8%	10.5%	5.6%	5.6%	4.6%	4.7%	2.9%	0.9%	6.5%	100.0%

Note: Data are taken from RAA (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2005, 2006). The RAA produced the report internally beginning in 2000. Before 2000, RAA contracted with ISO to produce the report. Thus, the 1996-2005 reports use a slightly different methodology than the earlier reports.

The report was not produced from 1997-1999. The numbers for 1997-2000 differ in the 2000 and 2001 reports. The 2001 report numbers are used for 1997-2001.

**Table 6.4****Premiums Ceded to Affiliated and Unaffiliated Alien Reinsurers By Jurisdiction: Amount (\$ millions)**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1990	2,030	2,008	394	167	277	363	63	131	7	1,392	6,832
1991	4,493	2,470	621	68	259	928	14	399	33	2,020	11,305
1992	4,368	3,126	882	160	503	631	79	432	13	1,743	11,937
1993	5,492	2,843	1,008	348	467	822	123	585	154	1,438	13,280
1994	6,155	2,926	1,058	254	834	1,175	469	517	227	1,426	15,041
1995	6,857	3,080	1,186	496	888	1,393	331	565	422	1,643	16,861
1996	6,010	2,805	1,245	639	861	318	666	451	524	1,714	15,233
1997	6,760	2,729	1,056	765	777	471	441	498	311	1,945	15,753
1998	6,714	3,228	1,170	1,152	1,364	488	485	553	391	1,800	17,345
1999	9,610	3,802	1,463	1,604	703	957	536	612	947	2,627	22,861
2000	10,626	4,111	1,956	1,545	1,183	1,345	854	846	641	2,011	25,118
2001	14,955	4,326	2,564	1,980	4,197	2,317	3,241	1,536	591	1,700	37,407
2002	16,018	4,343	8,912	2,277	7,360	1,842	1,696	1,318	575	1,828	46,169
2003	21,266	5,342	7,068	2,349	9,264	2,117	2,476	876	630	2,121	53,509
2004	24,826	4,444	6,163	2,247	9,328	1,766	1,029	599	625	2,074	53,101
2005	27,498	5,079	11,930	2,426	8,614	1,754	953	893	539	2,376	62,062

**Premiums Ceded to Affiliated and Unaffiliated Alien Reinsurers By Jurisdiction: Percentage**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1990	29.7%	29.4%	5.8%	2.4%	4.1%	5.3%	0.9%	1.9%	0.1%	20.4%	100.0%
1991	39.7%	21.8%	5.5%	0.6%	2.3%	8.2%	0.1%	3.5%	0.3%	17.9%	100.0%
1992	36.6%	26.2%	7.4%	1.3%	4.2%	5.3%	0.7%	3.6%	0.1%	14.6%	100.0%
1993	41.4%	21.4%	7.6%	2.6%	3.5%	6.2%	0.9%	4.4%	1.2%	10.8%	100.0%
1994	40.9%	19.5%	7.0%	1.7%	5.5%	7.8%	3.1%	3.4%	1.5%	9.5%	100.0%
1995	40.7%	18.3%	7.0%	2.9%	5.3%	8.3%	2.0%	3.4%	2.5%	9.7%	100.0%
1996	39.5%	18.4%	8.2%	4.2%	5.7%	2.1%	4.4%	3.0%	3.4%	11.3%	100.0%
1997	42.9%	17.3%	6.7%	4.9%	4.9%	3.0%	2.8%	3.2%	2.0%	12.3%	100.0%
1998	38.7%	18.6%	6.7%	6.6%	7.9%	2.8%	2.8%	3.2%	2.3%	10.4%	100.0%
1999	42.0%	16.6%	6.4%	7.0%	3.1%	4.2%	2.3%	2.7%	4.1%	11.5%	100.0%
2000	42.3%	16.4%	7.8%	6.2%	4.7%	5.4%	3.4%	3.4%	2.6%	8.0%	100.0%
2001	40.0%	11.6%	6.9%	5.3%	11.2%	6.2%	8.7%	4.1%	1.6%	4.5%	100.0%
2002	34.7%	9.4%	19.3%	4.9%	15.9%	4.0%	3.7%	2.9%	1.2%	4.0%	100.0%
2003	39.7%	10.0%	13.2%	4.4%	17.3%	4.0%	4.6%	1.6%	1.2%	4.0%	100.0%
2004	46.8%	8.4%	11.6%	4.2%	17.6%	3.3%	1.9%	1.1%	1.2%	3.9%	100.0%
2005	44.3%	8.2%	19.2%	3.9%	13.9%	2.8%	1.5%	1.4%	0.9%	3.8%	100.0%

Note: Data are taken from RAA (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2005, 2006). The RAA produced the report internally beginning in 2000. Before 2000, RAA contracted with ISO to produce the report. Thus, the 1996-2005 reports use a slightly different methodology than the earlier reports.

The report was not produced from 1997-1999. The numbers for 1997-2000 differ in the 2000 and 2001 reports. The 2001 report numbers are used for 1997-2001.

**Table 6.5****Recoverables from Affiliated and Unaffiliated Alien Reinsurers By Jurisdiction: Amount (\$ millions)**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1991	11,087	7,949	2,385	407	1,204	3,173	122	1,084	104	5,331	32,846
1992	11,282	10,741	3,236	527	1,631	2,527	107	1,398	43	5,574	37,066
1993	14,074	8,969	3,082	723	1,136	3,428	624	1,571	301	5,525	39,433
1994	15,077	9,052	3,214	817	1,704	4,616	581	1,737	448	4,702	41,948
1995	15,223	10,186	3,267	794	1,830	4,426	1,977	1,747	280	5,653	45,383
1996	15,647	10,426	3,624	1,370	1,902	4,366	2,494	1,732	163	4,673	46,397
1997	14,061	9,303	3,134	1,614	1,675	4,214	2,570	1,637	NA	1,094	39,302
1998	14,428	10,609	3,282	1,957	2,269	4,450	3,160	1,761	NA	1,085	43,001
1999	17,302	11,342	3,661	2,500	2,716	4,040	3,439	1,850	NA	634	47,620
2000	20,945	10,853	5,459	2,884	3,337	4,870	3,139	1,755	NA	936	54,393
2001	25,447	14,284	8,760	3,500	6,603	6,352	7,054	3,273	426	2,241	77,940
2002	29,809	13,044	14,274	4,110	9,562	7,265	7,445	2,920	467	5,041	93,937
2003	32,576	13,954	15,607	4,591	14,466	5,932	8,374	2,625	510	3,727	102,362
2004	38,627	14,104	13,066	4,774	16,204	5,366	7,358	2,509	560	4,092	106,660
2005	49,096	18,006	20,438	5,132	15,837	3,814	3,226	2,900	557	4,932	123,938

**Recoverables from Affiliated and Unaffiliated Alien Reinsurers By Jurisdiction: Percentage**

Year	Bermuda	UK	Germany	Cayman	Switzerland	Barbados	Ireland	France	Turks & Caicos	Other	Total
1991	33.8%	24.2%	7.3%	1.2%	3.7%	9.7%	0.4%	3.3%	0.3%	16.2%	100.0%
1992	30.4%	29.0%	8.7%	1.4%	4.4%	6.8%	0.3%	3.8%	0.1%	15.0%	100.0%
1993	35.7%	22.7%	7.8%	1.8%	2.9%	8.7%	1.6%	4.0%	0.8%	14.0%	100.0%
1994	35.9%	21.6%	7.7%	1.9%	4.1%	11.0%	1.4%	4.1%	1.1%	11.2%	100.0%
1995	33.5%	22.4%	7.2%	1.7%	4.0%	9.8%	4.4%	3.8%	0.6%	12.5%	100.0%
1996	33.7%	22.5%	7.8%	3.0%	4.1%	9.4%	5.4%	3.7%	0.4%	10.1%	100.0%
1997	35.8%	23.7%	8.0%	4.1%	4.3%	10.7%	6.5%	4.2%	NA	2.8%	100.0%
1998	33.6%	24.7%	7.6%	4.6%	5.3%	10.3%	7.3%	4.1%	NA	2.5%	100.0%
1999	36.3%	23.8%	7.7%	5.2%	5.7%	8.5%	7.2%	3.9%	NA	1.3%	100.0%
2000	38.5%	20.0%	10.0%	5.3%	6.1%	9.0%	5.8%	3.2%	NA	1.7%	100.0%
2001	32.6%	18.3%	11.2%	4.5%	8.5%	8.1%	9.1%	4.2%	0.5%	2.9%	100.0%
2002	31.7%	13.9%	15.2%	4.4%	10.2%	7.7%	7.9%	3.1%	0.5%	5.4%	100.0%
2003	31.8%	13.6%	15.2%	4.5%	14.1%	5.8%	8.2%	2.6%	0.5%	3.6%	100.0%
2004	36.2%	13.2%	12.3%	4.5%	15.2%	5.0%	6.9%	2.4%	0.5%	3.8%	100.0%
2005	39.6%	14.5%	16.5%	4.1%	12.8%	3.1%	2.6%	2.3%	0.4%	4.0%	100.0%

Note: Data are taken from RAA (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2005, 2006). The RAA produced the report internally beginning in 2000. Before 2000, RAA contracted with ISO to produce the report. Thus, the 1996-2005 reports use a slightly different methodology than the earlier reports. The report was not produced from 1997-1999. The numbers for 1997-2000 differ in the 2000 and 2001 reports. The 2001 report numbers are used for 1997-2001.

**Table 6.6A: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005**

Homeowners			Aircraft			Commercial Multiple Peril		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	4,889,062	42.0%	Bermuda	4,444,248	36.8%	Bermuda	4,986,698	38.9%
U.K.	2,017,851	17.3%	U.K.	2,263,335	18.7%	U.K.	2,368,004	18.5%
Cayman	1,194,374	10.3%	Germany	1,543,987	12.8%	Germany	1,495,788	11.7%
Germany	1,008,551	8.7%	Cayman Islands	1,229,227	10.2%	Cayman Islands	1,401,336	10.9%
Switz	416,016	3.6%	Switzerland	639,663	5.3%	Switzerland	466,409	3.6%
France	330,408	2.8%	Barbados	429,602	3.6%	Barbados	348,655	2.7%
Sweden	280,993	2.4%	Sweden	282,474	2.3%	France	310,745	2.4%
Ireland	271,251	2.3%	France	241,784	2.0%	Ireland	289,840	2.3%
Barbados	229,912	2.0%	Ireland	213,270	1.8%	Sweden	280,888	2.2%
Japan	180,868	1.6%	Japan	176,678	1.5%	Japan	189,706	1.5%
Turks & Caicos	165,749	1.4%	Luxembourg	133,815	1.1%	Luxembourg	141,342	1.1%
Luxembourg	136,849	1.2%	Isle Of Man	98,779	0.8%	Canada	121,536	0.9%
Canada	115,813	1.0%	Canada	97,662	0.8%	Isle Of Man	89,726	0.7%
British Virgin Isl	103,182	0.9%	Channel Isles	90,815	0.8%	Channel Isles	79,074	0.6%
Isle Of Man	89,726	0.8%	Turks & Caicos	30,590	0.3%	Turks & Caicos	53,009	0.4%
Channel Isles	63,286	0.5%	British Virgin Isl	27,187	0.2%	British Virgin Isl	26,894	0.2%
Island Of Nevis	27,555	0.2%	Belgium	17,754	0.1%	Italy	24,733	0.2%
Belgium	18,283	0.2%	Australia	15,141	0.1%	Belgium	18,364	0.1%
Australia	14,572	0.1%	Gibraltar	13,612	0.1%	Australia	15,329	0.1%
Gibraltar	13,612	0.1%	Hong Kong	12,631	0.1%	Korea	13,704	0.1%
Total: Top 20	11,567,913	99.3%	Total: Top 20	12,002,254	99.4%	Total: Top 20	12,721,780	99.3%
Overall Total	11,643,990	100.0%	Overall Total	12,078,105	100.0%	Overall Total	12,814,872	100.0%

Source: The Reinsurance Association of America's Schedule F Database.



**Table 6.6B: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Ocean Marine			Medical Malpractice			Allied Lines & Earthquake		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	5,325,285	36.9%	Bermuda	2,758,790	34.4%	Bermuda	5,404,113	37.8%
U.K.	2,836,627	19.7%	U.K.	1,499,615	18.7%	U.K.	2,655,703	18.6%
Germany	1,764,357	12.2%	Cayman Islands	1,064,662	13.3%	Germany	1,782,098	12.5%
Cayman Islands	1,624,145	11.3%	Germany	977,751	12.2%	Cayman Islands	1,578,668	11.0%
Switzerland	710,317	4.9%	Switzerland	505,992	6.3%	Switzerland	508,954	3.6%
Barbados	427,399	3.0%	Barbados	269,429	3.4%	Barbados	373,925	2.6%
Ireland	291,541	2.0%	Ireland	262,185	3.3%	France	306,267	2.1%
Sweden	291,434	2.0%	Japan	168,088	2.1%	Sweden	292,451	2.0%
France	287,035	2.0%	France	167,349	2.1%	Ireland	237,496	1.7%
Japan	197,902	1.4%	Channel Isles	83,003	1.0%	Japan	186,895	1.3%
Luxembourg	142,686	1.0%	Luxembourg	61,725	0.8%	Turks & Caicos	185,009	1.3%
Canada	106,956	0.7%	Isle Of Man	37,055	0.5%	Canada	181,652	1.3%
Isle Of Man	100,244	0.7%	Italy	23,889	0.3%	Luxembourg	141,532	1.0%
Channel Isles	89,233	0.6%	British Virgin Isl	18,759	0.2%	Isle Of Man	100,244	0.7%
Turks & Caicos	57,631	0.4%	Sweden	17,376	0.2%	British Virgin Isl	90,792	0.6%
Italy	24,950	0.2%	Canada	15,023	0.2%	Channel Isles	89,217	0.6%
Korea	21,990	0.2%	Turks & Caicos	13,500	0.2%	Island Of Nevis	31,138	0.2%
British Virgin Isl	18,978	0.1%	Australia	12,644	0.2%	Italy	24,863	0.2%
Australia	15,129	0.1%	Hong Kong	12,371	0.2%	Australia	15,288	0.1%
Gibraltar	13,612	0.1%	Taiwan	7,664	0.1%	Gibraltar	13,612	0.1%
Total: Top 20	14,347,451	99.4%	Total: Top 20	7,976,870	99.4%	Total: Top 20	14,199,917	99.3%
Overall Total	14,431,506	100.0%	Overall Total	8,024,442	100.0%	Overall Total	14,293,398	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.6C: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Workers' Compensation			Other Liability			Private Passenger Automobile Liability		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	4,788,535	37.2%	Bermuda	5,374,857	37.5%	Bermuda	2,998,810	39.3%
U.K.	2,264,106	17.6%	U.K.	2,634,674	18.4%	U.K.	1,059,536	13.9%
Germany	1,605,432	12.5%	Germany	1,785,152	12.4%	Cayman Islands	925,081	12.1%
Cayman Islands	1,557,750	12.1%	Cayman Islands	1,556,114	10.8%	Germany	573,194	7.5%
Switzerland	648,383	5.0%	Switzerland	774,003	5.4%	Switzerland	328,509	4.3%
Barbados	368,861	2.9%	Barbados	436,823	3.0%	Barbados	290,947	3.8%
Sweden	280,178	2.2%	France	305,836	2.1%	Sweden	263,500	3.5%
France	256,499	2.0%	Ireland	303,164	2.1%	France	243,801	3.2%
Ireland	251,894	2.0%	Sweden	284,812	2.0%	Turks & Caicos	222,628	2.9%
Japan	185,449	1.4%	Japan	188,924	1.3%	Ireland	184,496	2.4%
Luxembourg	137,562	1.1%	Luxembourg	142,055	1.0%	British Virgin Isl	142,161	1.9%
Isle Of Man	98,779	0.8%	Canada	102,078	0.7%	Luxembourg	139,213	1.8%
Channel Isles	90,461	0.7%	Isle Of Man	98,779	0.7%	Canada	102,048	1.3%
British Virgin Isl	80,996	0.6%	Channel Isles	90,588	0.6%	Isle Of Man	52,671	0.7%
Turks & Caicos	67,746	0.5%	Turks & Caicos	86,970	0.6%	Island Of Nevis	33,337	0.4%
Canada	43,614	0.3%	British Virgin Isl	25,997	0.2%	Japan	20,974	0.3%
Italy	24,766	0.2%	Italy	24,831	0.2%	Belgium	15,332	0.2%
Belgium	18,381	0.1%	Belgium	18,370	0.1%	Unknown	10,780	0.1%
Australia	15,283	0.1%	Australia	15,053	0.1%	Philippines	5,049	0.1%
Gibraltar	13,612	0.1%	Island Of Nevis	14,322	0.1%	Korea	5,036	0.1%
Total: Top 20	12,798,287	99.4%	Total: Top 20	14,263,402	99.4%	Total: Top 20	7,617,103	99.8%
Overall Total	12,878,067	100.0%	Overall Total	14,350,596	100.0%	Overall Total	7,630,622	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.6D: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Commercial Automobile Liability			Auto Physical Damage			Non-Proportional Reinsurance		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	5,057,009	38.1%	Bermuda	4,365,764	38.6%	Bermuda	4,414,879	38.7%
U.K.	2,263,512	17.1%	U.K.	1,785,282	15.8%	U.K.	2,144,064	18.8%
Germany	1,665,848	12.6%	Germany	1,166,624	10.3%	Germany	1,369,925	12.0%
Cayman Islands	1,577,258	11.9%	Cayman Islands	1,164,937	10.3%	Cayman Islands	916,430	8.0%
Switzerland	484,209	3.7%	Barbados	571,374	5.1%	Switzerland	633,220	5.6%
France	385,524	2.9%	Switzerland	416,368	3.7%	Barbados	410,304	3.6%
Barbados	347,261	2.6%	Sweden	279,237	2.5%	Sweden	282,972	2.5%
Ireland	282,855	2.1%	France	253,931	2.2%	France	244,205	2.1%
Sweden	281,560	2.1%	Turks & Caicos	210,492	1.9%	Ireland	227,884	2.0%
Japan	187,780	1.4%	Ireland	181,594	1.6%	Japan	189,696	1.7%
Luxembourg	140,901	1.1%	Japan	177,589	1.6%	Turks & Caicos	100,026	0.9%
Canada	118,443	0.9%	Canada	157,497	1.4%	Isle Of Man	98,779	0.9%
Isle Of Man	98,779	0.7%	Luxembourg	140,188	1.2%	Channel Isles	90,587	0.8%
Channel Isles	90,572	0.7%	British Virgin Isl	121,396	1.1%	Luxembourg	85,328	0.7%
Turks & Caicos	81,041	0.6%	Isle Of Man	89,726	0.8%	Canada	44,185	0.4%
British Virgin Isl	45,680	0.3%	Channel Isles	63,971	0.6%	Italy	24,573	0.2%
Italy	24,882	0.2%	Island Of Nevis	27,763	0.2%	British Virgin Isl	20,355	0.2%
Belgium	18,450	0.1%	Belgium	18,352	0.2%	Australia	14,762	0.1%
Australia	15,046	0.1%	Australia	15,104	0.1%	Gibraltar	13,612	0.1%
Gibraltar	13,612	0.1%	Gibraltar	13,612	0.1%	Hong Kong	13,329	0.1%
Total: Top 20	13,180,222	99.4%	Total: Top 20	11,220,801	99.3%	Total: Top 20	11,339,115	99.4%
Overall Total	13,259,365	100.0%	Overall Total	11,301,929	100.0%	Overall Total	11,404,394	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.7A: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005**

Homeowners			Aircraft			Commercial Multiple Peril		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	7,477,141	33.5%	Bermuda	9,205,904	29.2%	Bermuda	9,893,244	29.9%
U.K.	6,659,811	29.9%	U.K.	9,060,115	28.7%	U.K.	9,709,784	29.3%
Germany	2,186,913	9.8%	Germany	4,022,468	12.8%	Germany	3,745,852	11.3%
Cayman Islands	1,553,422	7.0%	Cayman Islands	2,126,162	6.7%	Cayman Islands	2,128,856	6.4%
Ireland	1,054,156	4.7%	Barbados	1,727,672	5.5%	Switzerland	1,762,024	5.3%
Switzerland	688,653	3.1%	Ireland	1,273,933	4.0%	Ireland	1,462,642	4.4%
Barbados	608,582	2.7%	Switzerland	1,236,315	3.9%	France	1,139,220	3.4%
France	530,222	2.4%	France	921,741	2.9%	Barbados	1,062,535	3.2%
Japan	270,014	1.2%	Japan	478,724	1.5%	Japan	385,592	1.2%
Canada	178,981	0.8%	Sweden	317,970	1.0%	Sweden	303,052	0.9%
Sweden	176,069	0.8%	Canada	301,906	1.0%	Canada	301,397	0.9%
Luxembourg	163,309	0.7%	Isle Of Man	209,987	0.7%	Isle Of Man	206,031	0.6%
Isle Of Man	157,543	0.7%	Luxembourg	164,651	0.5%	Luxembourg	170,258	0.5%
Turks & Caicos	137,843	0.6%	Channel Isles	152,657	0.5%	Channel Isles	137,160	0.4%
British Virgin Islands	120,487	0.5%	Belgium	92,302	0.3%	Unknown	136,165	0.4%
Channel Isles	86,745	0.4%	Australia	60,832	0.2%	Belgium	107,694	0.3%
Belgium	73,145	0.3%	British Virgin Islands	58,748	0.2%	Italy	62,506	0.2%
Island Of Nevis	54,278	0.2%	Italy	46,258	0.1%	Australia	44,225	0.1%
Australia	41,751	0.2%	Turks & Caicos	30,339	0.1%	Brazil	36,760	0.1%
Italy	31,491	0.1%	Denmark	26,153	0.1%	British Virgin Islands	35,889	0.1%
Total: Top 20	22,250,556	99.7%	Total: Top 20	31,514,837	100.0%	Total: Top 20	32,830,886	99.1%
Overall Total	22,307,845	100.0%	Overall Total	31,524,577	100.0%	Overall Total	33,116,552	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.7B: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Ocean Marine			Medical Malpractice			Allied Lines & Earthquake		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
U.K.	11,408,258	29.7%	Bermuda	6,252,609	27.8%	Bermuda	10,379,500	30.1%
Bermuda	11,100,405	28.9%	U.K.	6,130,200	27.2%	U.K.	10,190,954	29.5%
Germany	4,494,837	11.7%	Germany	2,520,975	11.2%	Germany	3,901,398	11.3%
Cayman Islands	2,575,110	6.7%	Ireland	1,791,506	8.0%	Cayman Islands	2,341,770	6.8%
Switzerland	2,246,754	5.9%	Cayman Islands	1,677,148	7.4%	Switzerland	2,002,690	5.8%
Barbados	1,700,682	4.4%	Switzerland	1,666,179	7.4%	Ireland	1,299,535	3.8%
Ireland	1,444,687	3.8%	Barbados	684,274	3.0%	France	1,154,109	3.3%
France	1,164,628	3.0%	France	550,663	2.4%	Barbados	966,172	2.8%
Japan	566,598	1.5%	Japan	336,857	1.5%	Japan	422,052	1.2%
Sweden	332,053	0.9%	Canada	141,163	0.6%	Canada	319,143	0.9%
Canada	319,863	0.8%	Channel Isles	138,000	0.6%	Sweden	310,664	0.9%
Isle Of Man	211,044	0.5%	Isle Of Man	91,882	0.4%	Isle Of Man	211,043	0.6%
Luxembourg	171,597	0.4%	Belgium	76,278	0.3%	Luxembourg	170,256	0.5%
Channel Isles	157,223	0.4%	Luxembourg	60,616	0.3%	Turks & Caicos	166,288	0.5%
Belgium	91,601	0.2%	Italy	52,258	0.2%	Channel Isles	147,471	0.4%
Italy	75,318	0.2%	Sweden	51,828	0.2%	Belgium	109,153	0.3%
Australia	65,787	0.2%	Australia	37,238	0.2%	British Virgin Islands	84,521	0.2%
Korea	46,512	0.1%	Taiwan	25,938	0.1%	Island Of Nevis	65,203	0.2%
Brazil	40,775	0.1%	Norway	21,342	0.1%	Italy	64,241	0.2%
British Virgin Islands	40,564	0.1%	Brazil	20,264	0.1%	Australia	60,419	0.2%
Total: Top 20	38,254,296	99.6%	Total: Top 20	22,327,218	99.1%	Total: Top 20	34,366,582	99.5%
Overall Total	38,405,435	100.0%	Overall Total	22,520,508	100.0%	Overall Total	34,537,920	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.7C: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Workers' Compensation			Other Liability			Private Passenger Automobile Liability		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	10,525,891	31.2%	U.K.	11,780,825	30.5%	Bermuda	5,200,931	31.6%
U.K.	9,762,228	28.9%	Bermuda	11,214,384	29.0%	U.K.	4,276,843	26.0%
Germany	3,555,446	10.5%	Germany	4,455,571	11.5%	Germany	1,287,631	7.8%
Cayman Islands	2,570,115	7.6%	Cayman Islands	2,447,545	6.3%	Ireland	1,101,031	6.7%
Switzerland	2,054,568	6.1%	Switzerland	2,404,930	6.2%	Barbados	1,053,683	6.4%
Ireland	1,379,019	4.1%	Barbados	1,451,214	3.8%	Cayman Islands	1,017,881	6.2%
Barbados	1,196,631	3.5%	Ireland	1,433,787	3.7%	Switzerland	560,542	3.4%
France	733,907	2.2%	France	1,175,467	3.0%	France	402,415	2.4%
Japan	455,898	1.4%	Japan	550,296	1.4%	Japan	275,602	1.7%
Sweden	306,081	0.9%	Canada	346,766	0.9%	Sweden	267,040	1.6%
Canada	242,155	0.7%	Sweden	322,495	0.8%	Turks & Caicos	261,658	1.6%
Isle Of Man	209,986	0.6%	Isle Of Man	209,986	0.5%	Luxembourg	158,829	1.0%
Luxembourg	167,938	0.5%	Luxembourg	171,573	0.4%	British Virgin Islands	154,688	0.9%
Channel Isles	144,200	0.4%	Channel Isles	149,783	0.4%	Isle Of Man	114,149	0.7%
British Virgin Islands	96,797	0.3%	Belgium	124,396	0.3%	Canada	93,529	0.6%
Belgium	86,239	0.3%	Italy	111,000	0.3%	Island Of Nevis	62,244	0.4%
Italy	65,853	0.2%	Turks & Caicos	80,707	0.2%	Belgium	45,491	0.3%
Turks & Caicos	61,401	0.2%	Australia	67,902	0.2%	Italy	24,140	0.1%
Australia	55,054	0.2%	British Virgin Islands	42,839	0.1%	Korea	23,255	0.1%
Korea	34,028	0.1%	Korea	40,903	0.1%	Australia	23,105	0.1%
Total: Top 20	33,703,435	99.8%	Total: Top 20	38,582,369	99.8%	Total: Top 20	16,404,687	99.6%
Overall Total	33,755,829	100.0%	Overall Total	38,677,700	100.0%	Overall Total	16,465,650	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 6.7D: Reinsurance Premiums Ceded to Unaffiliated Alien Reinsurers by U.S. Insurers By Jurisdiction in 2005 (continued)**

Commercial Automobile Liability			Auto Physical Damage			Non-Proportional Reinsurance		
Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent	Jurisdiction	Amount	Percent
Bermuda	10,023,813	30.1%	Bermuda	7,983,511	30.2%	Bermuda	9,936,149	29.6%
U.K.	9,263,548	27.8%	U.K.	6,919,252	26.2%	U.K.	9,893,987	29.5%
Germany	3,957,948	11.9%	Germany	3,132,813	11.9%	Germany	3,599,598	10.7%
Cayman Islands	2,461,234	7.4%	Cayman Islands	1,743,609	6.6%	Switzerland	2,352,700	7.0%
Switzerland	1,888,851	5.7%	Barbados	1,525,818	5.8%	Cayman Islands	2,068,223	6.2%
Ireland	1,383,542	4.1%	Ireland	1,148,416	4.3%	Barbados	1,807,236	5.4%
France	1,122,178	3.4%	France	863,335	3.3%	Ireland	846,575	2.5%
Barbados	987,643	3.0%	Switzerland	828,232	3.1%	France	790,818	2.4%
Japan	384,957	1.2%	Japan	337,496	1.3%	Japan	524,661	1.6%
Sweden	305,358	0.9%	Sweden	289,373	1.1%	Sweden	312,157	0.9%
Canada	296,395	0.9%	Canada	245,675	0.9%	Isle Of Man	209,845	0.6%
Isle Of Man	209,986	0.6%	Turks & Caicos	228,660	0.9%	Canada	198,835	0.6%
Luxembourg	169,662	0.5%	Isle Of Man	181,944	0.7%	Channel Isles	134,799	0.4%
Channel Isles	145,292	0.4%	Luxembourg	168,587	0.6%	Unknown	132,043	0.4%
Unknown	112,708	0.3%	British Virgin Islands	147,675	0.6%	Luxembourg	124,514	0.4%
Belgium	103,709	0.3%	Channel Isles	127,814	0.5%	Turks & Caicos	112,548	0.3%
British Virgin Islands	68,854	0.2%	Belgium	90,814	0.3%	Belgium	78,206	0.2%
Turks & Caicos	67,682	0.2%	Italy	75,035	0.3%	Italy	73,447	0.2%
Italy	62,700	0.2%	Unknown	72,919	0.3%	Australia	46,513	0.1%
Australia	44,712	0.1%	Island Of Nevis	56,188	0.2%	British Virgin Islands	38,728	0.1%
Total: Top 20	33,060,772	99.2%	Total: Top 20	26,167,166	99.1%	Total: Top 20	33,281,582	99.1%
Overall Total	33,341,509	100.0%	Overall Total	26,406,850	100.0%	Overall Total	33,575,787	100.0%

Source: The Reinsurance Association of America's Schedule F Database.

**Table 7.1 A: Initial Public Offerings of Equity by Property-Liability Insurers (\$ millions)**

Breakdown by Region							
Year	U.S.	U.K.	Cont Europe*	Asia/Pacific*	Bermuda	Non-Bermuda	Bermuda Percent
1992	924	0	9	151	0	1,084	0.0%
1993	4539	0	235	273	1094	5,047	17.8%
1994	1021	124	4409	37	0	5,590	0.0%
1995	1934	123	17	90	248	2,164	10.3%
1996	1490	150	47	77	112	1,764	6.0%
1997	740	5625	19	24	66	6,408	1.0%
1998	291	0	62	33	251	386	39.4%
1999	360	0	105	60	0	525	0.0%
2000	4275	0	150	86	0	4,511	0.0%
2001	5566	0	311	0	192	5,877	3.2%
2002	4221	305	0	0	866	4,526	16.1%
2003	678	376	0	1	1131	1,054	51.8%
2004	2499	0	0	0	882	2,499	26.1%
2005	494	0	1164	143	1032	1,802	36.4%
2006	1392	63	0	0	882	1,456	37.7%
Total	30,424	6,766	6,527	975	6,756	44,692	13.1%

**Table 7.1 B: Seasoned Public Offerings of Equity by Property-Liability Insurers (\$ millions)**

Breakdown by Region							
Year	U.S.	U.K.	Cont Europe*	Asia/Pacific*	Bermuda	Non-Bermuda	Bermuda Percent
1992	1,435	-	1,721	14	402	3,170	11.2%
1993	4,264	-	810	55	512	5,129	9.1%
1994	26	1,048	3,521	346	226	4,940	4.4%
1995	655	339	3,242	-	128	4,236	2.9%
1996	1,397	97	2,070	153	292	3,717	7.3%
1997	1,474	-	626	242	240	2,341	9.3%
1998	989	252	4,411	18	606	5,670	9.7%
1999	-	10	997	70	73	1,076	6.3%
2000	451	234	5,835	263	360	6,783	5.0%
2001	3,977	554	1,466	116	2,457	6,113	28.7%
2002	3,484	2,807	2,203	80	496	8,575	5.5%
2003	4,309	2,845	13,293	116	818	20,563	3.8%
2004	3,074	3,496	2,054	33	1,812	8,656	17.3%
2005	4,776	1,907	10,442	54	8,564	17,180	33.3%
2006	2,104	8,693	2,067	379	852	13,243	6.0%
Total	32,417	22,281	54,757	1,939	17,837	111,394	13.8%

Source: Thomson Financial, SDC Platinum database.

Note: Figures shown are for property-liability insurers, defined as firms with Standard Industrial Classification (SIC) code 6311 or North American Industry Classification System (NAICS) codes 524126, 524128, or 524130.



**Table 7.2 A: Initial Public Offerings of Equity by Property-Liability Insurers (\$ millions)**

Breakdown by Region							
Year	U.S.	U.K.	Cont Europe*	Asia/Pacific*	Bermuda	Non-Bermuda	Bermuda Percent
1992	13	0	1	3	0	17	0.0%
1993	22	0	1	5	3	28	9.7%
1994	8	2	4	1	0	15	0.0%
1995	10	1	1	3	3	15	16.7%
1996	9	2	1	3	1	15	6.3%
1997	3	1	1	1	1	6	14.3%
1998	5	0	2	2	1	9	10.0%
1999	3	0	1	2	0	6	0.0%
2000	3	0	2	4	0	9	0.0%
2001	5	0	1	0	1	6	14.3%
2002	4	2	0	0	2	6	25.0%
2003	4	1	0	1	4	6	40.0%
2004	6	0	0	0	1	6	14.3%
2005	7	0	3	1	4	11	26.7%
2006	6	1	0	0	3	7	30.0%
Total	108	10	18	26	24	162	12.9%

**Table 7.2 B: Seasoned Public Offerings of Equity by Property-Liability Insurers (\$ millions)**

Breakdown by Region							
Year	U.S.	U.K.	Cont Europe*	Asia/Pacific*	Bermuda	Non-Bermuda	Bermuda Percent
1992	14	0	13	1	2	28	6.7%
1993	28	0	12	2	2	42	4.5%
1994	2	1	17	4	1	24	4.0%
1995	11	1	13	0	1	25	3.8%
1996	11	1	4	2	4	18	18.2%
1997	10	0	4	2	2	16	11.1%
1998	4	3	9	2	1	18	5.3%
1999	0	1	4	3	1	8	11.1%
2000	2	4	8	3	1	17	5.6%
2001	21	6	5	6	5	38	11.6%
2002	16	13	6	7	2	42	4.5%
2003	18	5	11	6	3	40	7.0%
2004	14	4	6	10	7	34	17.1%
2005	10	8	10	3	22	31	41.5%
2006	8	6	5	5	6	24	20.0%
Total	169	53	127	56	60	405	12.9%

Source: Thomson Financial, SDC Platinum database.

Note: Figures shown are for property-liability insurers, defined as firms with Standard Industrial Classification (SIC) code 6311 or North American Industry Classification System (NAICS) codes 524126, 524128, or 524130.

**Table 7.3: Public Issuance of Initial Public Offerings By Bermuda Insurers**

<b>Date</b>	<b>Issuer</b>	<b>Amount (\$ millions)</b>	<b>Total Shares Offered</b>	<b>Offer Price</b>	<b>IPO</b>	<b>Exchange Listed</b>	<b>Type of Security</b>	<b>Ticker Symbol</b>	<b>Industry</b>
09/22/93	Sphere Drake Holdings Ltd	141.12	6,720,000	21.0	Yes	NYSE	Common Shares	SD	Insurance
10/28/93	PartnerRe Holdings Ltd	520.0	26,000,000	20.0	Yes	NASDQ	Common Shares	PRE	Insurance
07/26/95	RenaissanceRe Holdings Ltd	52.65	2,700,000	19.5	Yes	NASDQ	Common Shares	RNREF	Insurance
11/21/95	Lasalle Re Holdings Ltd	57.75	3,000,000	19.3	Yes	NASDQ	Common Shares	LSREF	Insurance
12/18/95	GCR Holdings Ltd	122.563	6,625,000	18.5	Yes	NASDQ	Ordinary Shares	GCREF	Insurance
04/16/96	Terra Nova(Bermuda)Holdings	89.76	5,280,000	17.0	Yes	NYSE	Class A Ord Shs	TNA	Insurance
11/25/97	Stirling Cooke Brown Holdings	65.45	2,975,000	22.0	Yes	NASDQ	Ordinary Shares	SCBHF	Insurance
08/13/01	Max Re Capital LTD	192.0	12,000,000	16.0	Yes	NASDQ	Common Shares	MXRE	Insurance
10/09/02	Montpelier Re Holdings Ltd	174.48	8,723,984	20.0	Yes	NYSE	Common Shares	MRH	Insurance
10/28/02	Platinum Underwriters Holdings	631.426	28,063,368	22.5	Yes	NYSE	Common Shares	PTP	Insurance
02/27/03	Endurance Specialty Holdings	211.968	9,216,000	23.0	Yes	NYSE	Ordinary Shares	ENH	Insurance
07/01/03	Axis Capital Holdings Ltd	473.0	21,500,000	22.0	Yes	NYSE	Common Shares	AXS	Insurance
12/03/03	Aspen Insurance Holdings Ltd	236.79	10,524,000	22.5	Yes	NYSE	Ordinary Shares	AHL	Insurance
04/22/04	Assured Guaranty Ltd	882.0	49,000,000	18.0	Yes	NYSE	Common Shares	AGO	Insurance
12/20/05	CRM Holdings Ltd	115.05	8,850,000	13.0	Yes	NASDQ	Common Shares	CRMH	Insurance
04/27/06	RAM Holdings Ltd	122.322	9,409,405	13.0	Yes	NASDQ	Common Shares	RAMR	Insurance

**Table 7.4: Seasoned Equity Offerings By Bermuda Insurers**

<b>Date</b>	<b>Issuer</b>	<b>Amount (\$ millions)</b>	<b>Total Shares Offered</b>	<b>Offer Price</b>	<b>Exchange Listed</b>	<b>Type of Security</b>	<b>Pre Offer Price</b>	<b>Pre Offer Shs Outstanding</b>	<b>Ticker Symbol</b>
01/16/92	Mutual Risk Management Ltd	87.0	2,400,000	36.25	NYSE	Common Shares	36.25	29,937,237	MM
03/24/93	ACE Ltd	511.5	18,600,000	27.50	NYSE	Ordinary Shares	-	-	ACE
01/26/94	ACE Ltd	180.8	6,400,000	28.25	NYSE	Ordinary Shares	28.38	149,431,122	ACE
09/26/95	Mid Ocean Ltd	128.269	3,800,000	33.76	NASDQ	Ordinary Shares	33.88	-	MOCNF
02/28/96	RenaissanceRe Holdings Ltd	67.2	2,400,000	28.00	NASDQ	Common Shares	28.00	-	RNREF
04/04/96	Mutual Risk Management Ltd	20.25	500,000	40.50	NYSE	Common Shares	39.75	34,913,603	MM
07/18/96	GCR Holdings Ltd	104.5	4,750,000	22.00	NASDQ	Common Shares	22.50	-	GCREF
11/25/96	Lasalle Re Holdings Ltd	66.64	2,720,000	24.50	NASDQ	Common Shares	25.38	19,327,000	LSREF
06/23/97	RenaissanceRe Holdings Ltd	91.2	2,400,000	38.00	NYSE	Common Shares	38.63	70,591,848	RNR
11/17/97	RenaissanceRe Holdings Ltd	100.8	2,400,000	42.00	NYSE	Common Shares	42.63	70,591,848	RNR
04/14/98	ACE Ltd	606.375	16,500,000	36.75	NYSE	Ordinary Shares	37.88	165,879,654	ACE
09/06/00	ACE Ltd	359.535	11,000,000	32.69	NYSE	Ordinary Shares	33.44	217,654,930	ACE
03/07/01	RenaissanceRe Holdings Ltd	113.297	1,569,215	72.20	NYSE	Common Shares	72.20	58,863,801	RNR
10/15/01	RenaissanceRe Holdings Ltd	223.491	2,370,000	94.30	NYSE	Common Shares	97.30	59,598,000	RNR
10/25/01	ACE Ltd	1,001.0	28,600,000	35.00	NYSE	Common Shares	35.50	226,390,282	ACE
11/01/01	XL Capital Ltd	712.0	8,000,000	89.00	NYSE	Class A Ord Shs	89.55	124,513,107	XL
12/06/01	IPC Holdings Ltd	395.2	15,200,000	26.00	NASDQ	Common Shares	26.50	25,065,572	IPCR
11/07/02	PartnerRe Ltd	386.16	8,000,000	48.27	NYSE	Common Shares	48.27	50,329,712	PRE
05/06/03	PartnerRe Ltd	438.722	8,340,731	52.60	NYSE	Common Shares	52.20	52,410,728	PRE
06/25/03	Montpelier Re Holdings Ltd	213.5	7,000,000	30.50	NYSE	Common Shares	30.65	63,392,600	MRH
03/03/04	Endurance Specialty Holdings	308.423	8,850,000	34.85	NYSE	Ordinary Shares	35.07	63,912,000	ENH
03/12/04	Montpelier Re Holdings Ltd	169.887	4,785,540	35.50	NYSE	Common Shares	36.43	63,392,597	MRH
03/31/04	Montpelier Re Holdings Ltd	145.0	4,000,000	36.25	NYSE	Common Shares	37.24	63,442,597	MRH
04/15/04	Axis Capital Holdings Ltd	558.2	20,000,000	27.91	NYSE	Common Shares	27.91	152,480,904	AXS
06/25/04	Platinum Underwriters Holdings	180.0	6,000,000	30.00	NYSE	Common Shares	30.20	43,268,025	PTP
11/16/04	Montpelier Re Holdings Ltd	129.5	3,500,000	37.00	NYSE	Common Shares	37.68	61,853,732	MRH
12/02/04	Endurance Specialty Holdings	320.46	9,800,000	32.70	NYSE	Ordinary Shares	34.50	61,680,352	ENH
03/07/05	Montpelier Re Holdings Ltd	154.866	3,704,924	41.80	NYSE	Common Shares	43.00	62,131,232	MRH

**Table: Seasoned Equity Offerings By Bermuda Insurers (continued)**

Date	Issuer	Amount (\$ millions)	Total Shares Offered	Offer Price	Exchange Listed	Type of Security	Pre Offer Price	Pre Offer Shs Outstanding	Ticker Symbol
03/09/05	Axis Capital Holdings Ltd	103.6	3,700,000	28.00	NYSE	Common Shares	28.14	152,764,917	AXS
03/22/05	Aspen Insurance Holdings Ltd	161.25	6,450,000	25.00	NYSE	Ordinary Shares	25.99	69,174,303	AHL
05/04/05	Endurance Specialty Holdings	292.4	8,000,000	36.55	NYSE	Ordinary Shares	38.00	60,578,708	ENH
05/09/05	Axis Capital Holdings Ltd	301.661	11,580,080	26.05	NYSE	Common Shares	27.07	140,139,501	AXS
08/08/05	Axis Capital Holdings Ltd	230.671	7,819,362	29.50	NYSE	Common Shares	30.12	140,139,501	AXS
08/09/05	Endurance Specialty Holdings	293.385	7,741,030	37.90	NYSE	Ordinary Shares	39.26	59,924,687	ENH
08/17/05	Axis Capital Holdings Ltd	55.537	1,850,000	30.02	NYSE	Common Shares	30.25	140,139,501	AXS
09/15/05	Montpelier Re Holdings Ltd	620.422	25,850,926	24.00	NYSE	Common Shares	24.69	63,327,564	MRH
09/22/05	Platinum Underwriters Holdings	163.5	5,839,286	28.00	NYSE	Common Shares	28.18	43,406,788	PTP
10/03/05	ACE Ltd	1,304.348	28,616,670	45.58	NYSE	Ordinary Shares	45.58	288,073,439	ACE
10/03/05	Endurance Specialty Holdings	201.519	6,079,000	33.15	NYSE	Ordinary Shares	33.03	59,935,738	ENH
10/04/05	Aspen Insurance Holdings Ltd	403.686	17,551,558	23.00	NYSE	Ordinary Shares	23.47	69,342,486	AHL
10/11/05	Max Re Capital LTD	258.5	11,000,000	23.50	NASDQ	Common Shares	23.61	46,112,212	MXRE
10/25/05	PartnerRe Ltd	412.725	6,656,849	62.00	NYSE	Common Shares	63.01	54,054,247	PRE
10/31/05	IPC Holdings Ltd	275.074	10,479,000	26.25	NASDQ	Common Shares	26.33	48,486,985	IPCR
10/31/05	IPC Holdings Ltd	87.701	3,341,000	26.25	NASDQ	Common Shares	26.33	48,486,985	IPCR
11/15/05	Axis Capital Holdings Ltd	199.92	6,800,000	29.40	NYSE	Common Shares	29.71	140,139,501	AXS
11/30/05	Platinum Underwriters Holdings	219.394	7,276,750	30.15	NYSE	Common Shares	30.46	49,604,759	PTP
12/06/05	Aspen Insurance Holdings Ltd	344.0	14,333,333	24.00	NYSE	Common Shares	24.67	69,342,486	AHL
12/06/05	XL Capital Ltd	2,199.99	33,846,000	65.00	NYSE	Class A Ord Shs	65.65	140,525,466	XL
12/14/05	Quanta Capital Holdings Ltd	54.261	11,423,340	4.75	NASDQ	Common Shares	5.16	56,810,020	QNTA
12/15/05	Scottish RE Group Ltd	225.6	9,400,000	24.00	NYSE	Ordinary Shares	24.10	45,627,372	SCT
02/15/06	Axis Capital Holdings Ltd	98.753	3,150,000	31.35	NYSE	Common Shares	31.80	148,868,759	AXS
05/31/06	Montpelier Re Holdings Ltd	236.207	15,694,800	15.05	NYSE	Common Shares	15.58	89,179,407	MRH

Source: Thomson Financial, SDC Platinum database.

**Table 7.5**  
**New Capital In Bermuda: The Classes of 1993, 2001, and 2005**

<b>Company/Instrument</b>	<b>Initial Capital (\$ Millions)</b>	<b>Lead Investors</b>
<b>Class of 2005</b>		
Amlin Bermuda Ltd	1,000	Merrill Lynch, Goldman Sachs
Ariel Re	1,000	Blackstone, Texas Pacific, Thomas H. Lee
Arrow Capital Re	500	Goldman Sachs
Ascendant Re	NA	David Whiting, Richard Black, Rick Pagnani
Flagstone Re	750	West End Capital
Harbor Point	1,500	Stone Point, Chubb
Hiscox Ins. Co.	500	Hiscox Plc
Lancashire	1,000	Capital Z
New Castle Re	500	Citadel Investment
Omega Specialty	170	Omega Underwriting Holdings Plc
Validus	1,000	Aquiline, Merrill Lynch, Goldman Sachs
Total: Class of 2005	7,920	
<b>Sidecars</b>		
Avalon Re	405	Oil Casualty Insurance
Bay Point Re	250	Golden Tree Asset Management
Blue Ocean	300	Montpelier Re and other investors
CastlePoint Re	265	Tower Group
Champlain Ltd	90	Montpelier Re and other investors
Concord Re	375	Lexington (AIG)
Cyrus Re	500	Highfields Management and others
Flatiron Re	600	Goldman subsidiary
Olympus Re/Helicon	330	
Monte Fort Re	200	Lehman
Petrel Re	200	First Reserve Corporation
Rockridge Re	91	West End Capital, Montpelier
Shackleton Re	235	Endurance Specialty Insurance
Sirocco Re	95	Lancashire
Starbound Re	300	Merrill Lynch
Timicuan Re	50	Renaissance Re
Total: Sidecars	4,286	
Total Sidecars&Reinsurers	12,206	
<b>Class of 2001</b>		
Allied World Assur Co Ltd	1,500	AIG, Chubb, Goldman Sachs
Arch Capital Group Ltd	1,000	Warburg Pincus, Hellman & Friedman
Aspen	200	Aspen Insurance Holdings Ltd
Axis Capital Holdings	1,700	MMC Capital
Catlin Bermuda Re	500	Catlin Group Ltd.
DaVinci Rein Ltd	400	RenaissanceRe, State Farm
Endurance Speciality Ins Ltd	1,200	Aon, Texas Pacific, Thomas H. Lee
Montpelier Re Hldgs Ltd	900	White Mountains, Cypress, Benfield
Platinum Underwriters*	1,000	Initial Public Offering, St. Paul, RenaissanceRe
Olympus Reins Co Ltd	500	Leucadia National, Gilbert Global, Franklin Mutual
Total	8,900	
<b>Class of 1993</b>		
Centre Cat Ltd.	309	Centre Reinsurance Holdings, Morgan Stanley
Global Capital Re	440	Goldman Sachs, Johnson & Higgins, Underwriters Re
IPC (International Property Catast	300	AIG
LaSalle Re	371	Aon, CNA Insurance and Corporate Partners
Mid-Ocean Re	770	Marsh & McLennan, JP Morgan
Partner Re	1,000	Swiss Re, John Head and Partners
Renaissance Re	308	USF&G, Warburg Pincus
Tempest Re	500	General Re
Compass Re**	300	SCOR
Total	4,298	

Sources: A.M Best Company (2006b), Marsh (2006a), Covaleski (1994), Thiele (2006), Benfield (2006d).

\*Formed in 2002. \*\*Never activated.

**Table 9.1: Efficiency of Reinsurers By Country, 1995-2005**

	<b>Country</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Average</b>
<b>Cost</b>	Bermuda	0.326	0.305	0.267	0.418	0.555	0.359	0.394	0.234	0.298	0.355	0.369	0.353
	Denmark	0.332	0.369	0.225	0.394	0.369	0.228	0.239	0.201	0.358	0.311	0.268	0.299
	France	0.510	0.418	0.257	0.468	0.512	0.276	0.304	0.235	0.303	0.397	0.326	0.364
	Germany	0.358	0.412	0.283	0.394	0.372	0.256	0.219	0.218	0.340	0.301	0.277	0.312
	Ireland	0.421	0.487	0.445	0.521	0.399	0.355	0.453	0.338	0.396	0.370	0.234	0.402
	Italy	0.453	0.454		0.324	0.330	0.221	0.268	0.234	0.289	0.475	0.277	0.332
	Netherlands		1.000						0.478	0.806	0.435		0.680
	Spain	0.274	0.288	0.306	0.363	0.412	0.227	0.214	0.176	0.227	0.326	0.224	0.276
	Switzerland	0.424	0.374	0.280	0.445	0.456	0.252	0.211	0.198	0.320	0.336	0.325	0.329
	United Kingdom	0.356	0.315	0.281	0.469	0.540	0.324	0.380	0.235	0.344	0.400	0.352	0.363
	United States	0.339	0.356	0.258	0.415	0.413	0.288	0.313	0.234	0.322	0.386	0.275	0.327
	<b>Average</b>	0.379	0.434	0.289	0.421	0.436	0.279	0.299	0.253	0.364	0.372	0.293	0.367
<b>Technical</b>	Bermuda	0.400	0.523	0.496	0.537	0.696	0.508	0.588	0.439	0.464	0.562	0.726	0.540
	Denmark	0.502	0.453	0.336	0.508	0.391	0.357	0.618	0.574	0.509	0.375	0.470	0.463
	France	0.670	0.618	0.372	0.572	0.609	0.565	0.547	0.483	0.518	0.613	0.622	0.563
	Germany	0.716	0.707	0.764	0.771	0.713	0.757	0.769	0.756	0.713	0.855	0.781	0.755
	Ireland	0.590	0.743	0.720	0.749	0.528	0.637	0.647	0.613	0.707	0.704	0.647	0.662
	Italy	0.795	0.901		0.479	0.383	0.566	0.616	0.668	0.728	0.836	0.652	0.662
	Netherlands		1.000						0.973	1.000	0.478		0.863
	Spain	0.494	0.572	0.645	0.622	0.495	0.511	0.557	0.466	0.553	0.666	0.841	0.584
	Switzerland	0.806	0.713	0.633	0.810	0.577	0.610	0.645	0.710	0.608	0.710	0.927	0.704
	United Kingdom	0.420	0.450	0.448	0.582	0.592	0.491	0.592	0.517	0.518	0.520	0.588	0.520
	United States	0.413	0.487	0.392	0.608	0.494	0.485	0.557	0.462	0.469	0.546	0.489	0.491
	<b>Average</b>	0.581	0.652	0.534	0.624	0.548	0.549	0.614	0.606	0.617	0.624	0.674	0.619
<b>Allocative</b>	Bermuda	0.853	0.600	0.596	0.789	0.826	0.696	0.662	0.552	0.683	0.669	0.569	0.682
	Denmark	0.787	0.812	0.713	0.797	0.946	0.655	0.466	0.478	0.703	0.837	0.577	0.707
	France	0.788	0.729	0.759	0.825	0.877	0.537	0.554	0.502	0.601	0.664	0.547	0.671
	Germany	0.500	0.591	0.387	0.508	0.521	0.331	0.287	0.292	0.486	0.362	0.363	0.421
	Ireland	0.793	0.686	0.648	0.732	0.808	0.556	0.676	0.549	0.590	0.557	0.404	0.636
	Italy	0.570	0.503		0.718	0.866	0.472	0.450	0.370	0.434	0.572	0.428	0.538
	Netherlands		1.000						0.491	0.806	0.910		0.802
	Spain	0.555	0.504	0.474	0.584	0.808	0.440	0.381	0.375	0.405	0.486	0.269	0.480
	Switzerland	0.542	0.584	0.523	0.555	0.793	0.427	0.355	0.284	0.529	0.466	0.360	0.493
	United Kingdom	0.846	0.756	0.680	0.819	0.918	0.685	0.655	0.504	0.697	0.790	0.636	0.726
	United States	0.838	0.779	0.700	0.703	0.859	0.608	0.572	0.525	0.691	0.719	0.577	0.688
	<b>Average</b>	0.707	0.686	0.609	0.703	0.822	0.541	0.506	0.447	0.603	0.639	0.473	0.622

**Table 9.1: Efficiency of Reinsurers By Country, 1995-2005**

	<b>Country</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Average</b>
<b>Scale</b>	Bermuda	0.666	0.976	0.806	0.854	0.862	0.894	0.907	0.804	0.856	0.799	0.827	0.841
	Denmark	0.718	0.730	0.761	0.890	0.781	0.895	0.914	0.838	0.866	0.816	0.792	0.818
	France	0.752	0.755	0.689	0.824	0.766	0.892	0.899	0.787	0.814	0.772	0.751	0.791
	Germany	0.852	0.846	0.846	0.830	0.837	0.819	0.878	0.860	0.807	0.897	0.868	0.849
	Ireland	0.733	0.904	0.851	0.962	0.883	0.906	0.890	0.955	0.980	0.967	0.957	0.908
	Italy	0.986	0.988		0.963	0.903	0.990	0.976	0.935	0.984	0.988	0.912	0.962
	Netherlands		1.000						0.973	1.000	0.995		0.992
	Spain	0.989	0.959	0.991	0.987	0.785	0.988	0.988	0.983	0.962	0.957	0.934	0.957
	Switzerland	0.878	0.872	0.807	0.932	0.810	0.959	0.932	0.927	0.870	0.799	0.927	0.883
	United Kingdom	0.975	0.970	0.879	0.917	0.937	0.953	0.947	0.898	0.913	0.871	0.864	0.920
	United States	0.799	0.828	0.800	0.839	0.804	0.833	0.866	0.747	0.759	0.765	0.749	0.799
	<b>Average</b>	<b>0.835</b>	<b>0.893</b>	<b>0.826</b>	<b>0.900</b>	<b>0.837</b>	<b>0.913</b>	<b>0.920</b>	<b>0.882</b>	<b>0.892</b>	<b>0.875</b>	<b>0.858</b>	<b>0.884</b>
<b>Pure Technical</b>	Bermuda	0.611	0.538	0.642	0.628	0.810	0.581	0.648	0.555	0.555	0.698	0.869	0.649
	Denmark	0.775	0.683	0.490	0.585	0.515	0.400	0.660	0.638	0.593	0.457	0.632	0.585
	France	0.894	0.822	0.615	0.721	0.816	0.652	0.615	0.658	0.674	0.817	0.816	0.736
	Germany	0.847	0.845	0.913	0.933	0.860	0.932	0.884	0.885	0.879	0.947	0.890	0.892
	Ireland	0.740	0.789	0.790	0.781	0.614	0.691	0.741	0.636	0.713	0.721	0.675	0.717
	Italy	0.806	0.912		0.492	0.425	0.573	0.628	0.721	0.736	0.844	0.714	0.685
	Netherlands		1.000						1.000	1.000	0.481		0.870
	Spain	0.500	0.596	0.651	0.630	0.643	0.518	0.564	0.474	0.573	0.693	0.902	0.613
	Switzerland	0.895	0.797	0.769	0.870	0.753	0.632	0.694	0.764	0.704	0.882	1.000	0.796
	United Kingdom	0.431	0.464	0.530	0.635	0.632	0.519	0.630	0.590	0.582	0.619	0.686	0.574
	United States	0.558	0.608	0.543	0.728	0.636	0.607	0.651	0.629	0.638	0.717	0.668	0.635
	<b>Average</b>	<b>0.706</b>	<b>0.732</b>	<b>0.660</b>	<b>0.700</b>	<b>0.670</b>	<b>0.610</b>	<b>0.672</b>	<b>0.686</b>	<b>0.695</b>	<b>0.716</b>	<b>0.785</b>	<b>0.705</b>
<b>Non-Increasing Returns Technical</b>	Bermuda	0.565	0.532	0.623	0.624	0.810	0.568	0.641	0.552	0.550	0.683	0.858	0.637
	Denmark	0.510	0.518	0.357	0.583	0.507	0.362	0.644	0.600	0.522	0.389	0.477	0.497
	France	0.855	0.788	0.580	0.721	0.815	0.644	0.611	0.653	0.667	0.816	0.816	0.724
	Germany	0.805	0.800	0.885	0.907	0.836	0.911	0.857	0.859	0.850	0.912	0.884	0.864
	Ireland	0.598	0.751	0.741	0.777	0.566	0.662	0.661	0.631	0.707	0.715	0.670	0.680
	Italy	0.795	0.901		0.491	0.420	0.566	0.624	0.718	0.736	0.844	0.714	0.681
	Netherlands		1.000						1.000	1.000	0.481		0.870
	Spain	0.497	0.596	0.651	0.629	0.643	0.511	0.562	0.470	0.571	0.691	0.902	0.611
	Switzerland	0.842	0.737	0.724	0.868	0.751	0.624	0.689	0.757	0.696	0.844	1.000	0.776
	United Kingdom	0.431	0.460	0.498	0.629	0.627	0.507	0.604	0.568	0.575	0.606	0.684	0.563
	United States	0.524	0.584	0.514	0.679	0.579	0.531	0.593	0.534	0.538	0.618	0.568	0.569
	<b>Average</b>	<b>0.642</b>	<b>0.697</b>	<b>0.619</b>	<b>0.691</b>	<b>0.655</b>	<b>0.589</b>	<b>0.649</b>	<b>0.667</b>	<b>0.674</b>	<b>0.691</b>	<b>0.757</b>	<b>0.679</b>

**Table 9.2: Efficiency of Property-Casualty Insurers By Country, 1995-2005**

	<b>Country</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Average</b>
<b>Cost</b>	Bermuda	0.207	0.319	0.154	0.134	0.115	0.096	0.249	0.081	0.204	0.279	0.193	0.185
	Denmark	0.181	0.335	0.252	0.162	0.153	0.185	0.240	0.111	0.227	0.235	0.184	0.206
	France	0.205	0.269	0.252	0.176	0.090	0.181	0.257	0.120	0.238	0.225		0.201
	Germany	0.190	0.240	0.186	0.133	0.072	0.113	0.183	0.091	0.172	0.180	0.100	0.151
	Ireland	0.226	0.343	0.335	0.217	0.115	0.229	0.333	0.181	0.245	0.215	0.104	0.231
	Italy	0.160	0.263	0.305	0.220	0.103	0.217	0.288	0.124	0.243	0.232	0.122	0.207
	Netherlands	0.206	0.245	0.192	0.149	0.071	0.130	0.195	0.085	0.168	0.160	0.080	0.153
	Spain	0.156	0.200	0.185	0.174	0.122	0.179	0.263	0.110	0.231	0.242	0.119	0.180
	Switzerland	0.126	0.177	0.179	0.143	0.093	0.118	0.199	0.087	0.165	0.191	0.099	0.143
	United Kingdom	0.125	0.222	0.189	0.149	0.092	0.109	0.196	0.087	0.169	0.161	0.087	0.144
	United States	0.146	0.235	0.188	0.124	0.074	0.121	0.184	0.079	0.160	0.162	0.087	0.142
	<b>Average</b>	<b>0.175</b>	<b>0.259</b>	<b>0.220</b>	<b>0.162</b>	<b>0.100</b>	<b>0.153</b>	<b>0.235</b>	<b>0.105</b>	<b>0.202</b>	<b>0.207</b>	<b>0.118</b>	<b>0.176</b>
<b>Technical</b>	Bermuda	0.498	0.486	0.324	0.318	0.275	0.160	0.448	0.166	0.303	0.409	0.250	0.331
	Denmark	0.259	0.398	0.333	0.228	0.218	0.261	0.301	0.198	0.290	0.292	0.255	0.276
	France	0.335	0.401	0.390	0.249	0.239	0.266	0.411	0.298	0.377	0.336		0.330
	Germany	0.371	0.416	0.304	0.357	0.116	0.183	0.266	0.141	0.208	0.248	0.133	0.249
	Ireland	0.389	0.568	0.546	0.351	0.321	0.386	0.593	0.359	0.435	0.371	0.189	0.410
	Italy	0.256	0.557	0.558	0.375	0.354	0.372	0.501	0.316	0.427	0.371	0.220	0.391
	Netherlands	0.381	0.419	0.312	0.236	0.169	0.208	0.347	0.241	0.321	0.276	0.138	0.277
	Spain	0.258	0.365	0.309	0.338	0.418	0.366	0.545	0.368	0.478	0.505	0.312	0.387
	Switzerland	0.438	0.534	0.585	0.617	0.139	0.284	0.369	0.158	0.268	0.293	0.134	0.347
	United Kingdom	0.269	0.371	0.314	0.241	0.221	0.210	0.324	0.207	0.282	0.270	0.174	0.262
	United States	0.208	0.334	0.266	0.193	0.138	0.176	0.266	0.149	0.222	0.221	0.121	0.208
	<b>Average</b>	<b>0.333</b>	<b>0.441</b>	<b>0.386</b>	<b>0.319</b>	<b>0.237</b>	<b>0.261</b>	<b>0.397</b>	<b>0.236</b>	<b>0.328</b>	<b>0.327</b>	<b>0.192</b>	<b>0.314</b>
<b>Allocative</b>	Bermuda	0.546	0.666	0.524	0.522	0.593	0.649	0.622	0.529	0.736	0.705	0.742	0.621
	Denmark	0.701	0.806	0.728	0.748	0.657	0.818	0.804	0.639	0.795	0.822	0.799	0.756
	France	0.679	0.694	0.656	0.717	0.433	0.693	0.645	0.482	0.683	0.698		0.638
	Germany	0.504	0.587	0.668	0.393	0.728	0.603	0.703	0.695	0.820	0.743	0.823	0.661
	Ireland	0.633	0.606	0.636	0.653	0.501	0.609	0.559	0.500	0.581	0.587	0.617	0.589
	Italy	0.667	0.498	0.540	0.617	0.342	0.620	0.590	0.423	0.594	0.646	0.581	0.556
	Netherlands	0.609	0.583	0.643	0.675	0.503	0.654	0.606	0.441	0.576	0.614	0.644	0.595
	Spain	0.661	0.584	0.626	0.564	0.309	0.540	0.510	0.325	0.512	0.510	0.433	0.507
	Switzerland	0.373	0.365	0.361	0.305	0.715	0.460	0.560	0.580	0.636	0.678	0.742	0.525
	United Kingdom	0.590	0.606	0.629	0.642	0.496	0.606	0.630	0.464	0.626	0.621	0.561	0.588
	United States	0.777	0.718	0.723	0.690	0.630	0.737	0.723	0.598	0.739	0.765	0.784	0.717
	<b>Average</b>	<b>0.613</b>	<b>0.610</b>	<b>0.612</b>	<b>0.593</b>	<b>0.537</b>	<b>0.635</b>	<b>0.632</b>	<b>0.516</b>	<b>0.663</b>	<b>0.672</b>	<b>0.673</b>	<b>0.614</b>



**Table 9.2: Efficiency of Property-Casualty Insurers By Country, 1995-2005**

	<b>Country</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Average</b>
<b>Scale</b>	Bermuda	0.894	0.922	0.813	0.751	0.835	0.684	0.845	0.734	0.819	0.884	0.778	0.814
	Denmark	0.913	0.936	0.892	0.777	0.737	0.880	0.897	0.650	0.683	0.874	0.900	0.831
	France	0.765	0.889	0.850	0.690	0.732	0.785	0.875	0.620	0.755	0.876		0.784
	Germany	0.722	0.739	0.674	0.807	0.364	0.474	0.563	0.345	0.379	0.431	0.501	0.545
	Ireland	0.783	0.957	0.948	0.796	0.745	0.809	0.872	0.764	0.845	0.948	0.775	0.840
	Italy	0.676	0.881	0.823	0.719	0.775	0.804	0.917	0.653	0.805	0.849	0.760	0.787
	Netherlands	0.799	0.919	0.877	0.763	0.761	0.900	0.918	0.664	0.782	0.820	0.772	0.816
	Spain	0.753	0.806	0.823	0.729	0.858	0.860	0.937	0.761	0.875	0.888	0.835	0.830
	Switzerland	0.689	0.738	0.804	0.810	0.394	0.549	0.557	0.382	0.462	0.506	0.601	0.590
	United Kingdom	0.694	0.872	0.802	0.759	0.762	0.816	0.893	0.724	0.834	0.882	0.767	0.800
	United States	0.769	0.884	0.810	0.730	0.684	0.780	0.836	0.691	0.750	0.814	0.745	0.772
	<b>Average</b>	<b>0.769</b>	<b>0.868</b>	<b>0.829</b>	<b>0.757</b>	<b>0.695</b>	<b>0.758</b>	<b>0.828</b>	<b>0.635</b>	<b>0.726</b>	<b>0.797</b>	<b>0.743</b>	<b>0.764</b>
<b>Pure Technical</b>	Bermuda	0.528	0.535	0.475	0.441	0.351	0.325	0.532	0.239	0.369	0.481	0.311	0.417
	Denmark	0.279	0.423	0.380	0.302	0.291	0.299	0.349	0.330	0.440	0.329	0.277	0.336
	France	0.435	0.459	0.464	0.393	0.354	0.364	0.474	0.500	0.520	0.409		0.437
	Germany	0.544	0.586	0.476	0.458	0.419	0.435	0.494	0.466	0.571	0.590	0.410	0.495
	Ireland	0.471	0.591	0.577	0.453	0.454	0.501	0.672	0.513	0.527	0.384	0.266	0.492
	Italy	0.380	0.644	0.638	0.539	0.472	0.479	0.551	0.517	0.551	0.461	0.309	0.504
	Netherlands	0.451	0.459	0.366	0.329	0.237	0.246	0.390	0.384	0.428	0.345	0.190	0.348
	Spain	0.353	0.521	0.412	0.467	0.506	0.443	0.583	0.503	0.564	0.585	0.400	0.485
	Switzerland	0.641	0.743	0.737	0.746	0.558	0.613	0.722	0.594	0.665	0.650	0.370	0.640
	United Kingdom	0.419	0.441	0.415	0.335	0.297	0.283	0.374	0.322	0.353	0.309	0.242	0.345
	United States	0.285	0.397	0.352	0.292	0.228	0.247	0.332	0.243	0.317	0.289	0.187	0.288
	<b>Average</b>	<b>0.435</b>	<b>0.527</b>	<b>0.481</b>	<b>0.432</b>	<b>0.379</b>	<b>0.385</b>	<b>0.497</b>	<b>0.419</b>	<b>0.482</b>	<b>0.439</b>	<b>0.296</b>	<b>0.434</b>
<b>Non-Increasing Returns Technical</b>	Bermuda	0.521	0.527	0.469	0.439	0.348	0.325	0.532	0.239	0.368	0.481	0.311	0.415
	Denmark	0.279	0.413	0.371	0.301	0.286	0.299	0.348	0.330	0.440	0.329	0.276	0.334
	France	0.420	0.448	0.446	0.392	0.351	0.363	0.473	0.499	0.520	0.409		0.432
	Germany	0.514	0.567	0.451	0.455	0.418	0.435	0.494	0.465	0.571	0.590	0.409	0.488
	Ireland	0.461	0.583	0.571	0.450	0.427	0.475	0.653	0.507	0.524	0.380	0.264	0.481
	Italy	0.339	0.623	0.584	0.539	0.472	0.479	0.551	0.517	0.550	0.461	0.308	0.493
	Netherlands	0.440	0.445	0.341	0.328	0.234	0.244	0.389	0.384	0.427	0.344	0.189	0.342
	Spain	0.352	0.518	0.410	0.467	0.505	0.442	0.582	0.503	0.564	0.585	0.399	0.484
	Switzerland	0.622	0.719	0.724	0.738	0.547	0.613	0.722	0.594	0.665	0.650	0.370	0.633
	United Kingdom	0.373	0.427	0.347	0.322	0.276	0.272	0.363	0.312	0.349	0.303	0.230	0.325
	United States	0.274	0.366	0.316	0.229	0.168	0.206	0.296	0.202	0.288	0.256	0.145	0.250
	<b>Average</b>	<b>0.418</b>	<b>0.512</b>	<b>0.457</b>	<b>0.424</b>	<b>0.366</b>	<b>0.378</b>	<b>0.491</b>	<b>0.414</b>	<b>0.479</b>	<b>0.435</b>	<b>0.290</b>	<b>0.424</b>

**Table 9.3A: Sample Size for Reinsurer Efficiency Analysis**

<b>Country</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Sum</b>
Bermuda	13	14	16	15	13	17	17	15	16	13	15	164
Denmark	3	3	3	3	3	3	3	3	2	2	2	30
France	11	10	11	11	12	11	7	8	8	6	3	98
Germany	19	20	24	22	23	21	20	20	19	15	13	216
Ireland	7	8	8	9	11	13	10	15	13	13	10	117
Italy	1	1		2	2	2	2	3	2	2	2	19
Netherlands		1						1	1	1		4
Spain	2	2	2	2	2	2	2	2	2	2	2	22
Switzerland	9	8	9	8	8	8	9	8	9	7	2	85
United Kingdom	2	4	23	24	22	18	18	19	17	14	16	177
United States	44	45	41	76	68	62	59	68	61	61	56	641
<b>Sum</b>	<b>111</b>	<b>116</b>	<b>137</b>	<b>172</b>	<b>164</b>	<b>157</b>	<b>147</b>	<b>162</b>	<b>150</b>	<b>136</b>	<b>121</b>	<b>1,573</b>

**Table 9.3B: Sample Size for Property-Casualty Insurer Efficiency Analysis**

<b>Country</b>	<b>Year</b>											<b>Sum</b>
	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	
Bermuda	11	14	13	9	13	11	11	11	11	11	9	124
Denmark	15	18	18	19	18	19	20	18	18	17	17	197
France	56	56	58	53	47	46	47	41	40	35		479
Germany	69	75	87	89	84	83	80	75	77	75	69	863
Ireland	9	11	9	13	14	15	14	17	13	14	11	140
Italy	10	8	4	32	33	31	32	31	31	27	25	264
Netherlands	36	37	34	32	31	29	28	27	29	27	24	334
Spain	39	38	34	31	29	29	30	29	26	22	22	329
Switzerland	21	20	17	18	19	19	18	16	16	15	5	184
United Kingdom	14	13	90	103	101	94	89	86	85	82	76	833
United States	445	526	536	1,572	1,552	1,596	1,541	1,505	1,432	1,422	1,383	13,510
<b>Sum</b>	<b>725</b>	<b>816</b>	<b>900</b>	<b>1,971</b>	<b>1,941</b>	<b>1,972</b>	<b>1,910</b>	<b>1,856</b>	<b>1,778</b>	<b>1,747</b>	<b>1,641</b>	<b>17,257</b>

**Appendix A: Bermuda Companies Listed in Standard & Poor's Global Reinsurance Highlights: 1993-2005**

1993	1994	1995 & 1996	1997	1998	1999
American Int'l Reins.	Centre Reinsurance (Bermuda)	Partner Reinsurance	Centre Solutions(Bermuda)	Centre Solutions	Centre Solutions (Bermuda)
Overseas Partners	Scandinavian Reins	Centre Reinsurance(Bermuda)	Mid Ocean Reinsurance	European Specialty Re Bermuc	mmercial Risk Reinsurance
PartnerRe	Overseas Partners	Mid Ocean Reinsurance	Partner Re	Inter-Ocean Reins.	European Specialty Reinsurance (Ber
Centre Reinsurance(Bermuda)	Sphere Drake Ins. (Bda)	Overseas Partners	X.L. Global Reinsurance , 3	IPC Re	IPCRe
Mid Ocean Re	Tate & Lyle Reinsurance	International Property Catastro	Overseas Partners	LaSalle Reinsurance ,	LaSalle Reinsurance
Tempest Reins.	PartnerRe	Global Capital Reinsurance	IPCRe	Odyssey Re (Bermuda)	Latin American Reinsurance
Global Capital Reins.	Mid Ocean Re	Scandinavian Reinsurance	Tempest Reinsurance	Overseas Partners	Odyssey Re (Bermuda)
LaSalle Reins.	Tempest Reins.	Tempest Reinsurance	Scandinavian Reinsurance	Partner Re	Overseas Partners
Int'l. Property Cat Reins.	Global Capital Reins.	Renaissance Reinsurance	Inter-Ocean Reins.	Renaissance Reinsurance	Partner Reinsurance
Center Cat	LaSalle Reins.	LaSalle Reinsurance	LaSalle Reinsurance ,	Scandinavian Reinsurance	Renaissance Reinsurance
Renaissance Re	Renaissance Re	Terra Nova (Bda) Ins	Renaissance Reinsurance	Stockton Reinsurance	Scandinavian Reinsurance
CentreLine Reinsurance	Intl. Property Cat Reins.	Sphere Drake Ins. (Bda)	Terra Nova(Bda) Ins	Tempest Reinsurance	Stockton Reinsurance
Scandinavian Reins	CAT Limited	Tate & Lyle Reinsurance	Odyssey Re (Bermuda)	Terra Nova (BDA) Ins.	Tempest Reinsurance
Sphere Drake Ins. (Bda)		CAT Limited	Tate & Lyle Reinsurance	XL Mid Ocean Re.	Terra Nova (Bermuda) Insurance
Tate & Lyle Reinsurance		Stockton Reinsurance	CAT Limited		XL Mid Ocean Reinsurance
			Stockton Reinsurance		
2000	2001	2002	2003	2004	2005
Inter-Ocean Reinsurance	Inter-Ocean Re	ACE Tempest Re	Arch Reinsurance (Bermuda)	XL Re	XL Re
Latin American Reinsurance	XL Re	Centre Solutions (Bermuda)	Partner Reinsurance	Partner Re	PartnerRe
LaSalle Reinsurance	ACE Tempest Re	Arch Reinsurance (Bermuda)	XL Re	Everest Re (Bermuda)	Everest Re (Bermuda)
IPCRe	Partner Re	Endurance Specialty	Everest Reinsurance (Bermuda)	ACE Tempest Re	ACE Tempest Re
ACE Tempest Reinsurance	Centre Solutions (Bermuda)	Inter-Ocean Re	ACE Tempest Reinsurance	Arch Re (Bermuda)	Platinum Underwriters Bermuda
Renaissance Reinsurance	mmercial Risk Re	Max Re	Montpelier Reinsurance	Montpelier Re	Arch Re
Centre Solutions (Bermuda)	Max Re Capital	Everest Re (Bermuda)	Max Re (4)	Renaissance Re	Renaissance Re
XL Mid Ocean Reinsurance	Imagine Insurance	Renaissance Re	Renaissance Reinsurance	Olympus Re (2)	Montpelier Re
Partner Reinsurance	Renaissance Re	Axis Specialty Limited	Olympus Re	AXIS Specialty	AXIS Specialty
Everest Reinsurance (Bermuda)	Everest Re (Bermuda)	IPCRe	Endurance Specialty Insurance	Max Re	Max Re
Scandinavian Reinsurance	IPC Re	Alea (Bermuda)	Axis Specialty	Endurance Specialty Insurance	Allied World Assurance
mmercial Risk Reinsurance	XL LA Re	Goshawk Re	IPCRe	Alea (Bermuda)	Endurance Specialty Insurance
Overseas Partners	Alea (Bermuda)	XL Re Latin America	Alea (Bermuda)	IPCRe	IPCRe
ESG Re 6	LaSalle Re	Security Life of Denver Ins	Sttish Annuity & Life Insurance	Catlin Group	Aspen Insurance
Stockton Reinsurance	Stockton Re	Catlin Group	Catlin Group	Aspen Insurance	PXRE Re
Harrington International Insurar	Axis Specialty	Grand Central Re	Aspen Insurance	PXRE Re	Hannover Re Bermuda
	Top Layer Re	Top Layer Re	PXRE Reinsurance	Hannover Re Bermuda	ACE Tempest Life Re
	Tokio Millennium Re	RAM Reinsurance	Hannover Re Bermuda	ACE Tempest Life Re	Transamerica International Re (Berm)
		Tokio Millennium Re	DaVinci Reinsurance	DaVinci Re	DaVinci Re
		Sttish Annuity & Life Ins (Caym	Rosemont Re (5)	Rosemont Re	Catlin Insurance
		Stockton Re	Tokio Millennium Re	Transamerica International Re	Tokio Millennium Re
		MS Frontier Reinsurance	Inter-Ocean Reinsurance	Tokio Millennium Re	MS Frontier Re
		Aspen Insurance	Grand Central Re	ESG Re Bermuda	Top Layer Re
		Montpelier Re	Security Life of Denver Internat	RAM Re	ESG Re Bermuda
		Olympus Re	ESG Reinsurance Bermuda	Top Layer Re	
		Da Vinci Re	Top Layer Reinsurance	MS Frontier Re	
			MS Frontier Reinsurance		

**Appendix B.1: Bermuda Insurance Groups and Unaffiliates: Key Insurance Operating Statistics, 2005**

Insurer	Year	Total Assets <sup>b</sup>	Total surplus <sup>b</sup>	Gross Premiums	Net Premiums	Net Premiums	Underwriting	Pretax Profit <sup>b</sup>
				Written <sup>b</sup>	Written <sup>b</sup>	Earned <sup>b</sup>	Profit <sup>b</sup>	
ACE Ltd.	2005	\$ 44,701,000	11,812,000	16,811,000	11,792,000	11,748,000	278,000	1,301,000
Alea Group Holdings (Bermuda) Ltd	2005	\$ 3,123,835	490,429	997,528	736,502	1,086,742	-	(152,101)
Alea Group Holdings Ltd	2005	\$ 1,552,223	362,431	832,661	234,824	369,690	(113,542)	(77,089)
Allied World Assurance Holdings Ltd	2005	\$ 5,202,211	1,420,266	1,560,326	1,221,951	1,271,511	(310,786)	(160,220)
Arch Capital Group Ltd.	2005	\$ 8,484,549	2,480,527	4,014,817	3,138,772	2,977,716	83,809	285,435
Arch Reinsurance Ltd	2005	\$ 8,346,934	2,639,292	2,807,127	2,807,127	2,670,854	-	287,438
Argus Group	2005	\$ 454,175	148,466	116,904	86,455	86,151	-	26,982
Argus Ins. Co. Ltd.	2005	\$ 447,175	168,990	90,996	70,960	70,960	(1,939)	17,741
Aspen Insurance Holdings Ltd.	2005	\$ 5,116,200	2,039,800	2,092,600	1,651,600	1,508,400	(261,100)	(160,400)
Associated Electric & Gas Ins. Services Ltd.	2005	\$ 3,927,608	950,195	1,144,079	905,193	820,355	(167,385)	56,030
Attorneys' Liability Assurance Society (Bermuda) Ltd.	2005	\$ 1,232,601	426,410	363,149	217,690	218,013	(4,495)	68,564
AXIS Capital Holdings Ltd.	2005	\$ 10,877,025	4,431,298	4,190,430	2,661,548	2,554,369	(113,131)	21,972
BF&M Ltd	2005	\$ 454,375	84,554	118,657	86,978	86,296	-	16,847
Catlin Insurance Co. Ltd.	2005	\$ 2,262,086	889,574	737,184	694,659	551,581	1,080	31,885
DaVinci Re Holdings Ltd and Subsidiary	2005	\$ 1,109,207	576,788	227,375	226,547	217,693	-	(209,254)
EIC Corporation	2005	\$ 88,140	48,074	27,603	13,561	12,759	-	2,712
Endurance Specialty Holdings Ltd.	2005	\$ 6,141,437	1,830,138	1,668,877	1,619,349	1,723,694	(404,977)	(271,632)
ESG Re Ltd.	2005	\$ 318,470	37,631	149,801	150,339	184,903	(14,685)	(9,727)
Fondiarria-SAI	2005	\$ 11,825,211	3,496,784	4,587,046	4,463,863	4,422,354	351,475	496,320
Glencoe Insurance Ltd & Subsidiary	2005	\$ 927,687	408,518	470,187	378,385	338,488	-	(81,500)
IPC Holdings Ltd.	2005	\$ 2,766,696	1,621,593	472,387	450,806	452,522	(684,796)	(626,690)
London Steamship Owners' Mutual Insurance Association (Berr	2005	\$ 336,670	110,478	95,402	78,255	78,255	-	11,016
Max Re Ltd.	2005	\$ 4,680,455	1,165,721	1,246,031	1,032,963	1,039,405	(109,282)	4,141
Montpelier Re Holdings Ltd.	2005	\$ 3,245,578	1,057,659	978,730	756,995	848,486	(872,256)	(752,879)
Oil Casualty Insurance Ltd.	2005	\$ 878,641	426,449	77,231	26,261	32,102	(69,213)	(51,238)
Oil Insurance Ltd.	2005	\$ 6,607,069	875,929	2,620,806	2,620,806	2,620,806	(236,249)	(118,478)
PartnerRe Ltd.	2005	\$ 13,088,441	3,092,787	3,665,238	3,615,878	3,599,189	(607,759)	(37,869)
Platinum Underwriters Holdings Ltd.	2005	\$ 4,947,466	1,540,249	1,765,155	1,717,722	1,714,723	(249,506)	(162,454)
PXRE Group Ltd	2005	\$ 2,002,790	465,318	542,325	407,005	388,324	-	(691,651)
R.V.I. Guaranty Co. Ltd.	2005	\$ 262,344	61,657	42,428	40,006	40,835	10,919	21,650
RAM Holdings Ltd	2005	\$ 551,685	360,341	68,147	68,147	42,609	-	22,363
RenaissanceRe Holdings Ltd.	2005	\$ 6,090,120	2,253,840	1,809,128	1,543,287	1,402,709	(518,654)	(403,212)
sEnergy Insurance Ltd	2005	\$ 868,018	367,058	127,476	127,476	127,476	-	(165,337)
Standard Steamship Owners' P&I Association (Bermuda) Ltd. (	2005	\$ 636,983	192,277	170,378	139,632	139,632	-	20,022
Steamship Mutual Underwriting Association (Bermuda) Ltd. (T	2005	\$ 605,143	137,367	210,780	157,394	154,022	(21,750)	11,121
Tate & Lyle PLC	2005	\$ 61,807	20,646	9,779	8,912	8,912	(1,952)	(611)
Through Transport Mutual Ins. Assoc. Ltd.	2005	\$ 342,750	112,726	204,475	138,445	117,646	26,183	34,046
Through Transport Mutual Insurance Association (EurAsia) Ltd	2005	\$ 118,457	48,403	177,875	28,981	26,331	-	7,458
White Mountains Insurance Group Ltd.	2005	\$ 13,111,821	5,283,960	7,764,607	3,831,240	3,797,705	(317,834)	366,991
XL Capital Ltd.	2005	\$ 50,079,623	8,471,811	11,849,497	9,515,150	9,365,495	(2,756,273)	(1,251,156)

Source: Standard & Poor's Eurothesys database, Standard & Poor's Classic Direct Ratings database.

**Appendix B.1: Bermuda Insurance Groups and Unaffiliates: Key Insurance Operating Statistics, 2005 (continued)**

Insurer	Combined	Underwriting	Loss Ratio	Overall	Pretax profit/Avg.	Technical reserves/	Financial
	Ratio	Expense Ratio		Operating Ratio	Total Surplus	Avg.Total Surplus	Rating <sup>c</sup>
ACE Ltd.	0.9754	0.2458	0.7296	0.8826	0.1202	2.1434	2.9986
Alea Group Holdings (Bermuda) Ltd	1.4314	0.5855	0.8459	1.2840	-0.2542	3.0327	0.0000
Alea Group Holdings Ltd	1.5539	0.6764	0.8775	1.4942	-0.1833	1.3302	4.0000
Allied World Assurance Holdings Ltd	1.2520	0.1945	1.0575	1.1239	-0.1128	2.2488	0.0000
Arch Capital Group Ltd.	0.9589	0.2866	0.6723	0.8807	0.1209	2.1353	3.0000
Arch Reinsurance Ltd	0.9474	0.2859	0.6615	0.8471	0.1158	1.9154	0.0000
Argus Group	0.9154	0.0351	0.8804	0.5615	0.1817	0.9319	0.0000
Argus Ins. Co. Ltd.	1.0273	0.1089	0.9185	0.7500	0.1040	0.8264	0.0000
Aspen Insurance Holdings Ltd.	1.1483	0.2477	0.9006	1.0786	-0.0911	1.4131	3.0000
Associated Electric & Gas Ins. Services Ltd.	1.1244	0.1835	0.9409	1.0066	0.0583	2.6479	0.0000
Attorneys' Liability Assurance Society (Bermuda) Ltd.	0.8832	0.1584	0.7248	0.5481	0.1681	1.3973	2.0000
AXIS Capital Holdings Ltd.	1.0325	0.2253	0.8072	0.9255	0.0054	1.1444	3.0000
BF&M Ltd	0.6408	-0.1431	0.7839	0.5287	0.2057	1.8105	0.0000
Catlin Insurance Co. Ltd.	1.0160	0.1536	0.8624	0.9312	0.0358	1.1304	0.0000
DaVinci Re Holdings Ltd and Subsidiary	1.9194	0.0793	1.8402	1.7600	-0.4015	0.7979	0.0000
EIC Corporation	0.8120	0.5886	0.2235	0.5642	0.0505	0.4592	0.0000
Endurance Specialty Holdings Ltd.	1.2528	0.2950	0.9578	1.1478	-0.1468	1.7275	3.0000
ESG Re Ltd.	1.1685	0.7247	0.4438	1.1406	-0.2163	4.0407	0.0000
Fondiarria-SAI	0.9079	0.2051	0.7028	0.8380	0.1575	2.2910	4.1739
Glencoe Insurance Ltd & Subsidiary	1.2231	0.3095	0.9136	1.1340	-0.2243	1.2283	0.0000
IPC Holdings Ltd.	2.5138	0.1434	2.3704	2.3555	-0.3809	0.6840	3.0000
London Steamship Owners' Mutual Insurance Association (Berm)	0.9609	0.0000	0.9609	0.7229	0.1045	1.8845	0.0000
Max Re Ltd.	1.1059	0.1256	0.9803	1.0345	0.0040	2.5263	0.0000
Montpelier Re Holdings Ltd.	2.0344	0.2539	1.7805	1.9318	-0.5359	1.1007	0.0000
Oil Casualty Insurance Ltd.	3.2553	0.5458	2.7096	2.6954	-0.1133	0.3259	3.0000
Oil Insurance Ltd.	1.0911	0.0254	1.0656	1.0718	-0.1267	4.1484	3.0000
PartnerRe Ltd.	1.1674	0.3098	0.8576	1.0753	-0.0118	2.2401	2.0000
Platinum Underwriters Holdings Ltd.	1.1450	0.2671	0.8779	1.0812	-0.1215	1.9595	0.0000
PXRE Group Ltd	2.7274	0.1226	2.6048	2.5769	-1.1906	2.1334	0.0000
R.V.I. Guaranty Co. Ltd.	0.7954	0.5358	0.2595	0.5342	0.3832	2.9141	3.0000
RAM Holdings Ltd	0.5671	0.3981	0.1691	0.0984	0.0630	0.5098	0.0000
RenaissanceRe Holdings Ltd.	1.3756	0.2096	1.1661	1.2409	-0.1646	0.9535	3.0000
sEnergy Insurance Ltd	2.3667	0.0000	2.3667	2.3095	-0.3369	0.3528	0.0000
Standard Steamship Owners' P&I Association (Bermuda) Ltd. (	1.1197	0.0959	1.0238	0.8438	0.1100	2.2136	0.0000
Steamship Mutual Underwriting Association (Bermuda) Ltd. (T	1.1570	0.2119	0.9451	1.0771	0.0810	2.9006	4.0000
Tate & Lyle PLC	1.2190	0.1588	1.0603	1.0068	-0.0289	1.8425	0.0000
Through Transport Mutual Ins. Assoc. Ltd.	0.7397	0.2470	0.4927	0.6743	0.3367	2.0470	4.0000
Through Transport Mutual Insurance Association (EurAsia) Ltd	1.1109	0.9491	0.1617	1.0231	0.1672	0.4880	0.0000
White Mountains Insurance Group Ltd.	1.0809	0.3207	0.7602	0.9704	0.0691	1.2379	3.0000
XL Capital Ltd.	1.2906	0.2288	1.0618	1.1597	-0.1544	2.5639	2.9810

Source: Standard & Poor's Eurothesys database, Standard & Poor's Classic Direct Ratings database.

Appendix Table C.1: Top 50 Groups Ceding Homeowners Multi-peril Premium to Unaffiliated Alien Reinsurers in 2005

Ceding Co Group	Total	Bermuda	U.K.	Cayman	Germany	Switz	France	Sweden	Ireland	Barbados	Japan
American International Group	3,416,643	1,177,940	649,274	242,552	505,685	236,195	40,814	15,230	49,922	144,744	159,710
Poe Financial Grp	93,999	89,586	3,306	0	0	0	1,107	0	0	0	0
Allstate Insurance Group	167,615	97,223	28,023	0	11,939	0	1,146	0	0	(6,812)	0
United Services Automobile Asn Grp	233,829	62,957	53,720	108,456	5,384	110	2,384	714	0	104	0
Tower Hill Ins Grp	199,641	121,310	70,896	0	0	3,297	4,239	(101)	0	0	0
State Farm II	83,502	43,045	5,875	0	14,250	0	0	0	0	0	3,000
Vesta Ins Grp	89,364	17,770	15,964	0	(12)	(36)	1,872	(3)	53,643	19	(49)
Zurich Ins Grp	1,608,402	622,405	147,933	567,092	100,519	57,632	20,176	513	23,281	2,184	1,351
Hannover Grp	365,378	229,930	48,827	20,665	588	4,048	21,020	(880)	5,219	2,888	0
Liberty Mutual Insurance Group	748,911	269,035	114,533	6,218	40,531	80,633	42,445	28,557	4	14,053	0
Palisades Group	73,425	47,741	(1,859)	0	9,181	0	18,362	0	0	0	0
Universal Ins Co Grp	139,599	116,449	5,660	0	9,792	4,757	2,060	14	0	0	0
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
Chubb & Son Inc	452,816	204,310	168,957	1,233	40,530	5,257	13,298	994	7,828	3,093	847
St Paul Travelers Grp	1,030,415	460,942	201,633	151,489	129,169	8,292	9,914	241	2,869	11,302	15,796
Nc Farm Bureau Insurance Grp	79,131	0	0	0	0	0	79,131	0	0	0	0
Gulfstream Prop & Cas Ins Co	56,939	39,699	499	0	0	0	16,741	0	0	0	0
Sunshine State Insurance Co	60,658	12,501	48,150	0	879	244	(1,116)	0	0	0	0
Geovera Holdings Inc Grp	31,563	12,062	9,368	0	9,158	0	975	0	0	0	0
Hartford Fire & Casualty Group	504,636	159,486	130,819	93,674	64,057	14,499	29,343	1,338	0	0	(1)
Assurant Inc Grp	635,660	292,715	2,326	2,993	0	0	650	0	14,815	56,289	0
Metropolitan Group	76,671	49,627	19,968	0	0	0	5,798	1,278	0	0	0
Nationwide Corp	140,776	39,415	55,022	0	39,415	214	5,227	1,248	0	0	0
Vanguard Fire & Cas Co	28,652	26,848	1,804	0	0	0	0	0	0	0	0
Cypress Holdings Grp	77,341	6,261	10,531	0	0	0	0	0	60,549	0	0
Tx Farm Bur Mut	0	0	0	0	0	0	0	0	0	0	0
Universal Property & Casualty Ins	13,752	3,120	9,121	0	0	0	1,511	0	0	0	0
Atlantic Companies	9,466	2,014	5,032	0	1,980	43	396	0	0	0	0
St Johns Ins Co Inc	22,565	4,621	2,241	0	0	0	0	0	15,703	0	0
Southern Farm Bureau Casualty	77,043	35,616	38,864	0	250	0	2,246	0	0	67	0
Kingsway Grp	9,710	1,251	4,371	117	3,453	141	313	0	0	0	0
Florida Peninsula Ins Co	26,616	11,323	15,293	0	0	0	0	0	0	0	0
Arx Holding Corp Grp	34,392	18,195	14,137	0	1,920	0	0	140	0	0	0
United Prop & Cas Ins Co	35,730	6,500	29,134	0	96	0	0	0	0	0	0
White Mountain Group	695,910	432,790	18,926	0	11,538	208	5	229,965	542	1,982	9
Mississippi Farm Bureau Mut Ins Co	7,404	6,015	1,389	0	0	0	0	0	0	0	0
The Hanover Ins Grp	59,616	23,711	25,818	0	3,715	480	5,011	765	104	0	0
Florida Family Mutual Insurance Co	46,625	9,745	111	0	0	0	0	0	36,769	0	0
Louisiana Farm Bureau Mutual Ins Co	13,657	9,497	4,133	0	0	0	27	0	0	0	0
Axa Insurance Group	43,106	29,735	10,932	0	1,153	2	0	840	3	(1)	205
21st Century Holding Grp	22,142	12,571	7,348	0	0	0	2,223	0	0	0	0
Virginia Farm Bur	0	0	0	0	0	0	0	0	0	0	0
First Home Ins Co	6,016	4,101	1,076	0	0	0	839	0	0	0	0
Balboa Ins Grp	31,577	22,053	8,053	(115)	265	0	0	0	0	0	0
Preferred Mutual Insurance Co	2,107	464	1,480	0	0	0	163	0	0	0	0
Philadelphia Consolidated Holding Gr	56,566	40,457	13,049	0	1,161	0	1,759	140	0	0	0
Oklahoma Farm Bur	0	0	0	0	0	0	0	0	0	0	0
California Cas Mgmt	1,015	504	511	0	0	0	0	0	0	0	0
South Carolina Farm Bureau Mutual	1,651	1,483	168	0	0	0	0	0	0	0	0
American Family Ins Grp	31,758	14,039	15,435	0	1,955	0	329	0	0	0	0
<b>Total</b>	<b>11,643,990</b>	<b>4,889,062</b>	<b>2,017,851</b>	<b>1,194,374</b>	<b>1,008,551</b>	<b>416,016</b>	<b>330,408</b>	<b>280,993</b>	<b>271,251</b>	<b>229,912</b>	<b>180,868</b>

Appendix Table C.2: Top Groups Ceding Aircraft Premiums to Unaffiliated Alien Reinsurers in 2005

Ceding Co Group	Total	CAYMAN ISLANDS SWITZERLAND									
		BERMUDA	U.K.	GERMANY	ISLANDS	LANDARBADOS	SWEDEN	FRANCE	IRELAND	JAPAN	
American International Group	3,416,943	1,177,940	649,274	505,685	242,552	236,195	144,744	15,230	40,814	49,922	159,710
Berkshire Hathaway	257,766	69,307	9,644	10,563	0	168,347	278	74	0	0	241
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	285	11,016	85,283	3,222
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	1,338	29,343	0	(1)
Old Republic Grp	294,252	164,083	2,924	84,304	29,098	3,228	2,462	0	2,172	140	22
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	2,994	9,949	4,482	0
Hcc Ins Holdings Grp	285,578	91,380	97,784	68,157	6,933	884	4,900	27	2,677	8,217	3,479
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	513	20,176	23,281	1,351
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	28,557	42,445	4	0
American National Fncl Group	38,864	1,163	17,320	12,608	0	5,765	0	166	947	0	0
Axa Insurance Group	43,101	29,735	10,932	1,153	0	2	(1)	840	0	3	205
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	311	2	24,704	14,292	0
Swiss Reinsurance Group	313,308	159,845	43,074	17,268	3,018	18,972	57,195	662	(414)	7,308	5,408
Chubb & Son Inc	452,918	204,310	168,957	40,530	1,233	5,257	3,093	994	13,298	7,828	847
Hannover Grp	365,378	229,930	48,827	588	20,665	4,048	2,888	(880)	21,020	5,219	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	46	1,832	0	0
Mitsui Sumitomo Ins Grp	20,085	4,597	6,477	129	3,608	1,171	0	0	12	0	1,227
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	233	590	26	921
Navigators Group Inc	67,022	25,048	20,524	11,492	0	4,083	0	2	16	6,058	(12)
Glencoe Us Holdings Inc	7	0	7	0	0	0	0	0	0	0	0
Shelter Ins Cos	8,633	6,309	248	671	0	300	0	188	917	0	0
Royal & Sun Alliance Usa	96,374	(1,467)	16,442	(7,727)	(1,487)	(4,297)	94,687	0	218	(350)	(308)
Ny Marine & General Grp	20,284	5,584	11,873	2,434	0	3	0	0	(23)	0	411
Qbe Insurance Grp Ltd	94,332	19,751	53,482	250	0	130	554	0	13,532	1	(54)
Axis Capital Grp	162,847	82,687	61,170	17,643	0	0	0	123	1,131	93	0
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	229,965	5	542	9
Atlantic Companies	9,466	2,014	5,032	1,980	0	43	0	0	396	0	0
Amerco Corp	158	12	96	2	0	48	0	0	0	0	0
Pxre Reinsurance Company	2,074	864	276	0	0	117	0	1	0	817	0
Sentry Insurance Group	127,135	7,000	107,007	6,966	5,813	0	0	349	0	0	0
The Hanover Ins Grp	59,616	23,711	25,818	3,715	0	480	0	765	5,011	104	0
Total	12,078,105	4,444,248	2,263,335	1,543,987	1,229,227	639,663	429,602	282,474	241,784	213,270	176,678

Appendix Table C.3: Top 50 Groups Ceding Commercial Multi-peril Premium to Unaffiliated Alien Reinsurers in 2005

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	FRANCE	IRELAND	SWEDEN	JAPAN
Chubb & Son Inc	452,816	204,310	168,957	40,530	1,233	5,257	3,093	13,298	7,828	994	847
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	20,176	23,281	513	1,351
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	40,814	49,922	15,230	159,710
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	9,914	2,869	241	15,796
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	11,016	85,283	285	3,222
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	29,343	0	1,338	(1)
Qbe Insurance Grp Ltd	94,332	19,751	53,482	250	0	130	554	13,532	1	0	(54)
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	42,445	4	28,557	0
State Farm Il	83,502	43,045	5,875	14,250	0	0	0	0	0	0	3,000
Church Mutual Insurance Co	13,076	1,711	11,275	55	0	35	0	0	0	0	0
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	311	24,704	14,292	2	0
Munich American Holding Corp	185,591	153,211	3,255	9,299	12,116	62	7,501	0	1	0	98
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	590	26	233	921
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	5	542	229,965	9
Guideone Ins Grp	17,220	7,776	6,087	446	0	0	0	2,768	0	143	0
State Natl Grp	156,592	29,635	11,239	5,046	29,010	4,034	37,852	0	39,776	0	0
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	38,586	14,713	55	1,498
Hannover Grp	365,378	229,930	48,827	588	20,665	4,048	2,888	21,020	5,219	(880)	0
The Hanover Ins Grp	59,616	23,711	25,818	3,715	0	480	0	5,011	104	765	0
Greater New York	10,844	6,008	3,067	1,769	0	0	0	0	0	0	0
Philadelphia Consolidated Holding Gr	56,566	40,457	13,049	1,161	0	0	0	1,759	0	140	0
Nationwide Corp	140,776	39,415	55,022	39,415	0	214	0	5,227	0	1,248	0
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	526	270	152	30	2,136
Cincinnati FncI Cp	38,444	7,524	22,785	523	0	3,851	0	3,761	0	0	0
Argonaut Grp	46,947	21,749	15,166	9,248	0	0	24	0	0	0	0
Mercer Ins Grp	2,646	299	1,281	795	0	24	0	112	0	98	0
Sompo Japan Ins Grp	54,131	1,302	52,651	104	0	4	0	5	0	0	16
Tower Grp Companies	77,977	36,292	2,704	3,126	0	0	0	0	35,855	0	0
Nuclear Electric Insurance Ltd	0	0	0	0	0	0	0	0	0	0	0
Cooperativa De Seguros Multiples Grp	66,888	24,354	25,270	11,715	0	156	0	0	144	722	0
Seguros Triples Inc	19,119	3,163	8,785	4,532	0	0	0	0	0	0	0
Catholic Relief Ins Co of America	29,165	2,266	10,784	6,091	0	0	0	1,681	8,343	0	0
Mitsui Sumitomo Ins Grp	20,085	4,597	6,477	129	3,608	1,171	0	12	0	0	1,227
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
Universal Ins Co Grp	139,599	116,449	5,660	9,792	0	4,757	0	2,060	0	14	0
Everest Reinsurance Holdings Inc	34,189	28,731	4,387	908	0	0	0	0	0	0	(83)
First Nonprofit Mutual Insurance Co	43	0	43	0	0	0	0	0	0	0	0
Utica First Insurance Company	536	179	357	0	0	0	0	0	0	0	0
Meadowbrook Ins Grp	42,958	23,460	17,635	576	0	0	(56)	0	0	0	0
National Ins Co Grp	4,392	0	0	3,859	0	520	0	0	0	0	0
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	20,238	18,690	574	197	13
Mapfre Ins Grp	24,391	9,455	3,610	5,358	0	4,595	0	0	911	0	0
Brotherhood Mutual Insurance Co	8,892	3,010	4,372	1,423	0	0	0	0	0	0	0
Vermont Mutual Grp	17,279	6,911	8,025	1,669	0	0	0	674	0	0	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	1,832	0	46	0
Utica National Ins Grp	12,313	1,649	7,723	2,547	0	287	0	101	0	6	0
Safeco Insurance Group	51,378	26,623	20,201	1,103	0	13	0	468	0	0	0
Markel Corporation Grp	86,315	42,896	37,829	2,937	0	0	1,166	1	0	946	0
Michigan Millers Mutual Insurance Co	11,615	721	4,031	6,170	0	0	0	693	0	0	0
Harleysville Grp	12,366	6,046	1,697	4,446	0	0	0	177	0	0	0
Total	12,814,872	4,986,698	2,368,004	1,495,788	1,401,336	466,409	348,655	310,745	289,840	280,888	189,706



Appendix Table C.4: Top 50 Groups Ceding Ocean Marine Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	IRELAND	SWEDEN	FRANCE	JAPAN
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	49,922	15,230	40,814	159,710
Navigators Group Inc	67,022	25,048	20,524	11,492	0	4,083	0	6,058	2	16	(12)
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	4,482	2,994	9,949	0
Hcc Ins Holdings Grp	285,578	91,380	97,784	68,157	6,933	884	4,900	8,217	27	2,677	3,479
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	542	229,965	5	9
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	14,713	55	38,586	1,498
Ny Marine & General Grp	20,284	5,584	11,873	2,434	0	3	0	0	0	(23)	411
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	2,869	241	9,914	15,796
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	85,283	285	11,016	3,222
Chubb & Son Inc	452,816	204,310	168,957	40,530	1,233	5,257	3,093	7,828	994	13,298	847
State Natl Grp	156,592	29,635	11,239	5,046	29,010	4,034	37,852	39,776	0	0	0
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	311	14,292	2	24,704	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	0	46	1,832	0
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	4	28,557	42,445	0
American Steamship Owners Mut Prot	9,242	729	8,458	0	0	0	55	0	0	0	0
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	26	233	590	921
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	23,281	513	20,176	1,351
Axis Capital Grp	162,847	82,687	61,170	17,643	0	0	0	93	123	1,131	0
Berkshire Hathaway	257,766	69,307	9,644	10,563	0	168,347	278	0	74	0	241
Samsung Fire & Marine Ins Co Ltd	6,543	0	0	0	0	0	0	0	0	0	0
Markel Corporation Grp	86,315	42,896	37,829	2,937	0	0	1,166	0	946	1	0
Swiss Reinsurance Group	313,308	159,845	43,074	17,268	3,018	18,972	57,195	7,308	662	(414)	5,408
Nationwide Corp	140,776	39,415	55,022	39,415	0	214	0	0	1,248	5,227	0
Hyundai Marine & Fire Ins Co Ltd	5,935	0	738	349	0	50	0	38	0	349	0
Rli Insurance Group	80,654	47,916	27,258	5,092	0	(2)	0	0	392	(2)	0
Lg Insurance Company Ltd Us Branch	0	0	0	0	0	0	0	0	0	0	0
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
Sunderland Marine Mutual Co Ltd	1,933	15	535	24	0	11	0	0	0	6	0
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	0	1,338	29,343	(1)
Integrand Assurance Co	0	0	0	0	0	0	0	0	0	0	0
United Services Automobile Asn Grp	233,829	62,957	53,720	5,384	108,456	110	104	0	714	2,384	0
Fm Global Grp	399,477	124,929	183,574	36,900	872	6,823	26,472	2,949	3,451	1,741	1,425
Cooperativa De Seguros Multiples Grp	66,888	24,354	25,270	11,715	0	156	0	144	722	0	0
Seaworthy Insurance Co	460	0	339	121	0	0	0	0	0	0	0
Mitsui Sumitomo Ins Grp	20,085	4,597	6,477	129	3,608	1,171	0	0	0	12	1,227
The Hanover Ins Grp	59,616	23,711	25,818	3,715	0	480	0	104	765	5,011	0
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	20,238	574	197	18,690	13
Mapfre Ins Grp	24,391	9,455	3,610	5,358	0	4,595	0	911	0	0	0
Atlantic Companies	9,466	2,014	5,032	1,980	0	43	0	0	0	396	0
Seven Seas Insurance Co Inc	1,040	0	923	65	0	0	0	0	0	0	0
Universal Ins Co Grp	139,599	116,449	5,660	9,792	0	4,757	0	0	14	2,060	0
National Security	5,701	3,028	2,448	0	0	0	0	0	0	225	0
American Modern Ins Grp	74,254	31,903	26,055	1,953	0	2,386	0	0	201	(4)	0
Sompo Japan Ins Grp	54,131	1,302	52,651	104	0	4	0	0	0	5	16
Bankers Ins Grp	5,153	3,078	1,671	0	404	0	0	0	0	0	0
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	526	152	30	270	2,136
Axa Insurance Group	43,106	29,735	10,932	1,153	0	2	(1)	3	840	0	205
American Agricultural Insurance Co	179,147	88,452	36,252	11,374	0	15,985	0	21,972	507	4,605	0
Windsor Mount Joy Mutual Ins Co	556	4	427	0	0	0	0	0	66	0	0
Van Enterprises Group	15,763	14,037	518	42	0	0	0	0	0	0	0
<b>Total</b>	<b>14,431,506</b>	<b>5,325,285</b>	<b>2,836,627</b>	<b>1,764,357</b>	<b>1,624,145</b>	<b>710,317</b>	<b>427,399</b>	<b>291,541</b>	<b>291,434</b>	<b>287,035</b>	<b>197,902</b>

Appendix Table C.5: Top 50 Groups Ceding Medical Malpractice Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	CAYMAN ISLANDS	GERMANY	SWITZERLAND	BARBADOS	IRELAND	JAPAN	FRANCE	CHANNEL
Berkshire Hathaway	257,766	69,307	9,644	0	10,563	168,347	278	0	241	0	0
Ismie Group	44,427	6,000	10,430	0	19,423	6,045	0	0	0	2,529	0
Cna Insurance Group	401,011	108,647	18,942	154,283	20,255	22,915	673	14,713	1,498	38,586	420
American International Group	3,416,643	1,177,940	649,274	242,552	505,685	236,195	144,744	49,922	159,710	40,814	63,230
State Volunteer Mutual Insurance Co	79,913	2,247	17,504	0	6,268	(270)	0	54,164	0	0	0
Mag Mutual Insurance Group	49,609	8,705	19,603	0	9,477	9	0	10,959	0	856	0
Proassurance Corp Grp	57,979	6,148	27,220	898	16,566	(2)	0	0	0	7,149	0
Everest Reinsurance Holdings Inc	34,189	28,731	4,387	0	908	0	0	0	(83)	0	0
Alleghany Grp	145,851	79,827	54,282	0	7,038	0	0	0	0	4,704	0
Medical Ins Grp	15,515	2,555	12,921	0	118	0	0	0	0	(79)	0
Preferred Professional Insurance Co	33,416	8,997	16,148	0	6,894	1,377	0	0	0	0	0
Arch Capital Group	148,985	58,670	43,836	27,197	12,881	1,179	0	0	0	1,832	0
Ace Ltd	1,034,553	342,975	238,548	54,946	174,842	1,880	99,620	85,283	3,222	11,016	15,257
Mdadvantage Ins Co of Nj	32,715	32,715	0	0	0	0	0	0	0	0	0
Hum Group Of Companies	30,249	6,101	21,241	0	2,562	0	0	(127)	0	(430)	0
Zurich Ins Grp	1,608,402	622,405	147,933	567,092	100,519	57,632	2,184	23,281	1,351	20,176	(15)
Fpic Insurance Group Inc	18,693	0	7,117	3,106	9,137	(7)	0	(660)	0	0	0
Health Care Industry Liab Recip Ins	30,551	30,551	0	0	0	0	0	0	0	0	0
Doctors Co Grp	24,085	7,080	6,433	1,920	405	0	0	0	0	4,247	4,000
Fairfax Financial	192,023	63,978	54,463	229	19,292	8,443	20,238	574	13	18,690	111
Medical Ins Grp Of Md	10,743	124	8,241	0	2,378	0	0	0	0	0	0
Ap Capital Grp	15,570	1,526	3,874	0	8,525	0	0	0	0	1,645	0
Markel Corporation Grp	86,315	42,896	37,829	0	2,937	0	1,166	0	0	1	0
Northwest Physicians Mutual Ins Co	0	0	0	0	0	0	0	0	0	0	0
Pennsylvania Physicians Recip Insur	0	0	0	0	0	0	0	0	0	0	0
California Healthcare Ins Co Inc Rrg	2,656	0	371	0	2,285	0	0	0	0	0	0
Physicians Ins A Mut Grp	14,379	48	10,842	0	2,528	0	0	0	0	961	0
Utah Medical Insurance Associates	11,230	0	9,365	0	1,898	(33)	0	0	0	0	0
Preferred Physicians Medical Rrg	3,800	0	0	0	3,800	0	0	0	0	0	0
Midwest Medical Insurance Co	13,539	2,335	5,485	0	2,536	42	0	1,743	0	1,398	0
American Healthcare Specialty	10,009	(3,012)	6,965	0	5,139	0	0	917	0	0	0
Promutual Companies	4,925	1,642	0	0	0	0	0	0	0	3,283	0
Physicians Insurance Co of Wi	0	0	0	0	0	0	0	0	0	0	0
Millennium Ins Co	76	10	66	0	0	0	0	0	0	0	0
Hospital Services Group	9,962	928	6,331	0	0	0	0	0	0	2,703	0
American Physicians Ins Exchange	2,334	0	1,138	0	1,196	0	0	0	0	0	0
Medical Alliance Ins Co	12,664	373	1,238	0	0	0	0	0	0	318	0
Mha Ins Co	16,743	1,596	5,069	8,175	1,747	156	0	0	0	0	0
Medical Mutual Insurance Co of Maine	7,216	0	3,936	0	3,280	0	0	0	0	0	0
Mcic Vermont Inc Rrg	4,868	4,868	0	0	0	0	0	0	0	0	0
Pennsylvania Hlthcare Providers Ins	8,610	1,920	3,396	0	0	483	0	0	0	2,811	0
Wr Berkley Corp	69,177	34,561	10,686	4,264	13,645	1,220	526	152	2,136	270	0
Pica Grp	6,471	270	4,529	0	0	0	0	1,348	0	324	0
Care Rrg Inc	10,409	0	0	0	0	0	0	10,409	0	0	0
Connecticut Medical Insurance Co	9,429	313	4,322	0	0	381	0	0	0	153	0
Nevada Mutual Ins Co Inc	7,021	0	7,021	0	0	0	0	0	0	0	0
Professional Liab Ins Co of America	9,692	4,604	242	0	1,454	0	0	0	0	3,392	0
Professional Cas Assn	9,507	0	0	0	0	0	0	9,507	0	0	0
Ophthalmic Mutual Ins Co Rrg	9,880	0	8,445	0	1,435	0	0	0	0	0	0
Consortium Rrg	642	209	298	0	135	0	0	0	0	0	0
Total	8,024,442	2,758,790	1,499,615	1,064,662	977,751	505,992	269,429	262,185	168,088	167,349	83,003

Appendix Table C.6: Top 50 Groups Ceding Allied Lines &amp; Earthquake Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	FRANCE	SWEDEN	IRELAND	JAPAN
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	11,016	285	85,283	3,222
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	311	24,704	2	14,292	0
Wells Fargo Grp	5,790	1,609	2,869	541	0	90	0	351	330	0	0
State Farm II	83,502	43,045	5,875	14,250	0	0	0	0	0	0	3,000
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	40,814	15,230	49,922	159,710
Fidelity National Financial Inc	9,066	7,832	1,007	0	0	0	0	227	0	0	0
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	590	233	26	921
Fm Global Grp	399,477	124,929	183,574	36,900	872	6,823	26,472	1,741	3,451	2,949	1,425
Alliance Ins Grp	41,353	4,084	2,118	35,151	0	0	0	0	0	0	0
Agri General Insurance Company	48,100	2,431	4,263	39,457	0	136	0	568	1,251	0	0
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	9,914	241	2,869	15,796
American Agri Business Insurance Co	57,556	5,872	0	41,361	0	8,925	0	1,118	280	0	0
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	20,176	513	23,281	1,351
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	29,343	1,338	0	(1)
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	9,949	2,994	4,482	0
Allstate Insurance Group	167,615	97,223	28,023	11,939	0	0	(6,812)	1,146	0	0	0
Alleghany Grp	145,851	79,827	54,282	7,038	0	0	0	4,704	0	0	0
Assurant Inc Grp	635,660	292,715	2,326	0	2,993	0	56,289	650	0	14,815	0
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
United Services Automobile Asn Grp	233,829	62,957	53,720	5,384	108,456	110	104	2,384	714	0	0
Axis Capital Grp	162,847	82,687	61,170	17,643	0	0	0	1,131	123	93	0
Producers Lloyds Grp	22,205	187	206	19,150	0	1,771	0	115	676	0	0
Nau Country Insurance Co	11,001	4,089	784	5,199	0	106	0	421	402	0	0
Poe Financial Grp	93,999	89,586	3,306	0	0	0	0	1,107	0	0	0
Nationwide Corp	140,776	39,415	55,022	39,415	0	214	0	5,227	1,248	0	0
Selective Insurance	21,387	6,751	1,908	5,163	0	0	0	7,565	0	0	0
American Agricultural Insurance Co	179,147	88,452	36,252	11,374	0	15,985	0	4,605	507	21,972	0
Guideone Ins Grp	17,220	7,776	6,087	446	0	0	0	2,768	143	0	0
Farmers Mtl Hail Ins Co Of Ia Grp	10,839	4,255	3,967	1,352	0	0	0	(2)	1,094	0	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	1,832	46	0	0
Harleysville Grp	12,366	6,046	1,697	4,446	0	0	0	177	0	0	0
Geovera Holdings Inc Grp	31,563	12,062	9,368	9,158	0	0	0	975	0	0	0
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	5	229,965	542	9
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	42,445	28,557	4	0
Iat Reins Co Grp	23,822	6,637	8,277	8,854	0	49	0	0	0	0	5
Icw Group	20,519	9,369	8,266	1,272	0	419	44	1,017	128	2	0
Markel Corporation Grp	86,315	42,896	37,829	2,937	0	0	1,166	1	946	0	0
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	20,238	18,690	197	574	13
Cooperativa De Seguros Multiples Grp	66,888	24,354	25,270	11,715	0	156	0	0	722	144	0
Qbe Insurance Grp Ltd	94,332	19,751	53,482	250	0	130	554	13,532	0	1	(54)
Glencoe Us Holdings Inc	7	0	7	0	0	0	0	0	0	0	0
Auto Owners Grp	21,967	15,743	4,828	1,396	0	0	0	0	0	0	0
Safeco Insurance Group	51,378	26,623	20,201	1,103	0	13	0	468	0	0	0
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	38,586	55	14,713	1,498
Rli Insurance Group	80,654	47,916	27,258	5,092	0	(2)	0	(2)	392	0	0
Philadelphia Consolidated Holding Gr	56,566	40,457	13,049	1,161	0	0	0	1,759	140	0	0
Tower Hill Ins Grp	199,641	121,310	70,896	0	0	3,297	0	4,239	(101)	0	0
Aspen Specialty Ins Co	32,970	7,165	23,623	688	0	0	349	0	0	0	0
Iowa Farm Bureau	10,742	7,915	297	366	0	0	0	211	209	1,532	0
Arx Holding Corp Grp	34,392	18,195	14,137	1,920	0	0	0	0	140	0	0
Total	14,293,398	5,404,113	2,655,703	1,782,098	1,578,668	508,954	373,925	306,267	292,451	237,496	186,895

Appendix Table C.7: Top 50 Groups Ceding Workers' Compensation Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	SWEDEN	FRANCE	IRELAND	JAPAN
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	28,557	42,445	4	0
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	241	9,914	2,869	15,796
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	513	20,176	23,281	1,351
Aon Corporation	173,699	93,878	28,018	182	9,828	0	305	0	629	7,576	0
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	15,230	40,814	49,922	159,710
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	1,338	29,343	0	(1)
Old Republic Grp	294,252	164,083	2,924	84,304	29,098	3,228	2,462	0	2,172	140	22
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	526	30	270	152	2,136
Companion L I C	3,577	2,320	587	431	0	0	0	52	187	0	0
Blue Cross & Blue Shield Of Mi Grp	19,431	12,119	567	187	0	6,558	0	0	0	0	0
Berkshire Hathaway	257,766	69,307	9,644	10,563	0	168,347	278	74	0	0	241
Hannover Grp	365,378	229,930	48,827	588	20,665	4,048	2,888	(880)	21,020	5,219	0
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	285	11,016	85,283	3,222
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	233	590	26	921
Kentucky Employers Mutual Insurance	41,780	15,212	11,143	704	0	0	0	0	0	14,721	0
Argonaut Grp	46,947	21,749	15,166	9,248	0	0	24	0	0	0	0
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	2,994	9,949	4,482	0
Chubb & Son Inc	452,816	204,310	168,957	40,530	1,233	5,257	3,093	994	13,298	7,828	847
Alaska National Insurance Company	1,648	874	774	0	0	0	0	0	0	0	0
Zenith National Ins Grp	9,764	5,043	3,320	1,401	0	0	0	0	0	0	0
Royal & Sun Alliance Usa	96,374	(1,467)	16,442	(7,727)	(1,487)	(4,297)	94,687	0	218	(350)	(308)
First Commercial Grp	25,755	207	6,486	0	0	0	0	0	0	19,062	0
Sentry Insurance Group	127,135	7,000	107,007	6,966	5,813	0	0	349	0	0	0
Aim Mut Grp	895	0	478	417	0	0	0	0	0	0	0
Benchmark Insurance Co	64,807	26,385	2,849	540	2,037	0	0	0	0	0	0
Rhine Re Grp	0	0	0	0	0	0	0	0	0	0	0
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	55	38,586	14,713	1,498
Penn Mfr Asn Ins	27,482	1,357	3,168	6,002	(213)	(2)	(10,612)	0	0	27,780	0
Amerisure Companies	5,278	2,168	639	2,471	0	0	0	0	0	0	0
Cincinnati FncI Cp	38,444	7,524	22,785	523	0	3,851	0	0	3,761	0	0
West Bend Mutual Group	17,923	2,166	3,065	8,570	0	0	0	0	4,122	0	0
Saif Corp	1,484	306	1,178	0	0	0	0	0	0	0	0
Aequicap Ins Co	(93)	(92)	(1)	0	0	0	0	0	0	0	0
Associated Industries Ins Co Inc	(3,836)	3,203	648	3,773	0	0	0	0	0	(11,460)	0
lat Reins Co Grp	23,822	6,637	8,277	8,854	0	49	0	0	0	0	5
Guard Ins Companies	12,811	831	409	5,359	0	0	0	0	6,152	60	0
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
New Mexico Mutual Group	1,348	375	512	461	0	0	0	0	0	0	0
Suncoast Holdings Inc	23,398	2,121	689	0	20,588	0	0	0	0	0	0
Firstcomp Insurance Co	16,006	15,856	150	0	0	0	0	0	0	0	0
Louisiana Workers Compensation Corp	7,661	5,454	356	1,807	0	0	0	0	0	44	0
Amerisafe Group	15,211	136	8,247	6,828	0	0	0	0	0	0	0
Emc Insurance Companies	27,347	10,574	11,603	4,846	0	115	0	102	0	0	0
Ras Group	1,040	0	0	0	0	1,040	0	0	0	0	0
Amfed Grp	1,248	0	1,248	0	0	0	0	0	0	0	0
Employers Ins Grp	15,074	3,245	11,829	0	0	0	0	0	0	0	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	46	1,832	0	0
Seabright Ins Co	11,540	4,950	1,134	5,456	0	0	0	0	0	0	0
Society Insurance	444	0	320	124	0	0	0	0	0	0	0
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	229,965	5	542	9
<b>Total</b>	<b>12,878,067</b>	<b>4,788,535</b>	<b>2,264,106</b>	<b>1,605,432</b>	<b>1,557,750</b>	<b>648,383</b>	<b>368,861</b>	<b>280,178</b>	<b>256,499</b>	<b>251,894</b>	<b>185,449</b>

Appendix Table C.8: Top 50 Groups Ceding Other Liability Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	FRANCE	IRELAND	SWEDEN	JAPAN
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	11,016	85,283	285	3,222
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	2,184	20,176	23,281	513	1,351
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	40,814	49,922	15,230	159,710
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	9,914	2,869	241	15,796
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	42,445	4	28,557	0
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	0	590	26	233	921
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	29,343	0	1,338	(1)
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	38,586	14,713	55	1,498
Axis Capital Grp	162,847	82,687	61,170	17,643	0	0	0	1,131	93	123	0
Nationwide Corp	140,776	39,415	55,022	39,415	0	214	0	5,227	0	1,248	0
Alleghany Grp	145,851	79,827	54,282	7,038	0	0	0	4,704	0	0	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	1,832	0	46	0
Hcc Ins Holdings Grp	285,578	91,380	97,784	68,157	6,933	884	4,900	2,677	8,217	27	3,479
Hannover Grp	365,378	229,930	48,827	588	20,665	4,048	2,888	21,020	5,219	(880)	0
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	9,949	4,482	2,994	0
Old Republic Grp	294,252	164,083	2,924	84,304	29,098	3,228	2,462	2,172	140	0	22
Chubb & Son Inc	452,816	204,310	168,957	40,530	1,233	5,257	3,093	13,298	7,828	994	847
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	20,238	18,690	574	197	13
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	5	542	229,965	9
Argonaut Grp	46,947	21,749	15,166	9,248	0	0	24	0	0	0	0
Rli Insurance Group	80,654	47,916	27,258	5,092	0	(2)	0	(2)	0	392	0
Navigators Group Inc	67,022	25,048	20,524	11,492	0	4,083	0	16	6,058	2	(12)
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	526	270	152	30	2,136
Quanta Us Holdings Grp	55,373	35,378	18,161	1,558	0	0	0	267	0	0	0
Markel Corporation Grp	86,315	42,896	37,829	2,937	0	0	1,166	1	0	946	0
State Natl Grp	156,592	29,635	11,239	5,046	29,010	4,034	37,852	0	39,776	0	0
American Safety Holding Grp	40,965	15,157	23,228	2,358	0	216	0	6	0	0	0
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	311	24,704	14,292	2	0
First Mercury Financial Grp	216	0	58	158	0	0	0	0	0	0	0
Ilg Companies	0	0	0	0	0	0	0	0	0	0	0
James River Grp Inc	65,453	6,955	16,257	2,241	0	0	0	0	40,000	0	0
Ohio Casualty Grp	9,286	5,999	1,376	1,911	0	0	0	0	0	0	0
Cincinnati Fncl Cp	38,444	7,524	22,785	523	0	3,851	0	3,761	0	0	0
Royal & Sun Alliance Usa	96,374	(1,467)	16,442	(7,727)	(1,487)	(4,297)	94,687	218	(350)	0	(308)
Ajk Holdings	390	0	390	0	0	0	0	0	0	0	0
United National Grp	1,693	1,863	1	11	0	(182)	0	0	0	0	0
Philadelphia Consolidated Holding Gr	56,566	40,457	13,049	1,161	0	0	0	1,759	0	140	0
Bcs Ins Grp	106,090	5,325	22,768	3,407	0	72,548	0	0	43	1,977	0
Berkshire Hathaway	257,766	69,307	9,644	10,563	0	168,347	278	0	0	74	241
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
Hbw Holdings Grp	0	0	0	0	0	0	0	0	0	0	0
Western World Grp	41,411	0	633	1,243	0	39,535	0	0	0	0	0
Protective Ins Grp	11,953	5,415	2,084	4,403	51	0	0	0	0	0	0
Maxum Specialty Ins Grp	0	0	0	0	0	0	0	0	0	0	0
United Educators Ins Rrg Inc	1,850	0	0	1,850	0	0	0	0	0	0	0
Utica National Ins Grp	12,313	1,649	7,723	2,547	0	287	0	101	0	6	0
Progressive Grp	18,654	18,653	0	1	0	0	0	0	0	0	0
Auto Owners Grp	21,967	15,743	4,828	1,396	0	0	0	0	0	0	0
Allstate Insurance Group	167,615	97,223	28,023	11,939	0	0	(6,812)	1,146	0	0	0
Erie Ins Grp	9,956	4,287	5,097	497	0	0	0	0	0	77	0
<b>Total</b>	<b>14,350,596</b>	<b>5,374,857</b>	<b>2,634,674</b>	<b>1,785,152</b>	<b>1,556,114</b>	<b>774,003</b>	<b>436,823</b>	<b>305,836</b>	<b>303,164</b>	<b>284,812</b>	<b>188,924</b>

Appendix Table C.9: Top 50 Groups Ceding Private Passenger Automobile Liability Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	CAYMAN ISLANDS	GERMANY	SWITZERLAND	BARBADO	SWEDEN	FRANCE	TURKS & ORELAND	
Old American Cty Mutual Fire Ins Co	44,603	10,077	0	0	(1,017)	0	0	0	5,739	0	29,804
State Farm II	83,502	43,045	5,875	0	14,250	0	0	0	0	0	0
Gmac Insurance Holding	181,808	36,314	17,476	0	396	0	55,883	0	0	54,201	0
Home State Ins Grp	2,656	351	2,305	0	0	0	0	0	0	0	0
Nationwide Corp	140,776	39,415	55,022	0	39,415	214	0	1,248	5,227	0	0
Automobile Club Mi	16,401	6,206	10,029	0	0	0	0	0	166	0	0
Allstate Insurance Group	167,615	97,223	28,023	0	11,939	0	(6,812)	0	1,146	29,924	0
State Natl Grp	156,592	29,635	11,239	29,010	5,046	4,034	37,852	0	0	0	39,776
Sentry Insurance Group	127,135	7,000	107,007	5,813	6,966	0	0	349	0	0	0
Progressive Grp	18,654	18,653	0	0	1	0	0	0	0	0	0
Titus Group	0	0	0	0	0	0	0	0	0	0	0
Liberty Mutual Insurance Group	748,911	269,035	114,533	6,218	40,531	80,633	14,053	28,557	42,445	0	4
The Hanover Ins Grp	59,616	23,711	25,818	0	3,715	480	0	765	5,011	0	104
Auto Owners Grp	21,967	15,743	4,828	0	1,396	0	0	0	0	0	0
White Mountain Group	695,910	432,790	18,926	0	11,538	208	1,982	229,965	5	0	542
South Carolina Farm Bureau Mutual	1,651	1,483	168	0	0	0	0	0	0	0	0
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
Usagencies Grp	1,304	0	1,304	0	0	0	0	0	0	0	0
American Independent Ins Grp	0	0	0	0	0	0	0	0	0	0	0
Plymouth Rock Ins Grp	19,827	1,751	303	0	0	0	0	0	17,773	0	0
United Automobile Ins Group	4,173	3,458	0	0	0	0	0	0	0	0	715
California Cas Mgmt	1,015	504	511	0	0	0	0	0	0	0	0
Hannover Grp	365,378	229,930	48,827	20,665	588	4,048	2,888	(880)	21,020	(2,418)	5,219
Berkshire Hathaway	257,766	69,307	9,644	0	10,563	168,347	278	74	0	22	0
Republic Companies Grp	12,353	3902	7998	0	450	3	0	0	0	0	0
Michigan Farm Bureau	527	0	527	0	0	0	0	0	0	0	0
Safety Group (The)	4,824	2,499	2,289	0	36	0	0	0	0	0	0
United Services Automobile Asn Grp	233,829	62,957	53,720	108,456	5,384	110	104	714	2,384	0	0
St Paul Travelers Grp	1,030,415	460,942	201,633	151,489	129,169	8,292	11,302	241	9,914	26,457	2,869
Royal & Sun Alliance Usa	96,374	(1,467)	16,442	(1,487)	(7,727)	(4,297)	94,687	0	218	0	(350)
Nc Farm Bureau Insurance Grp	79,131	0	0	0	0	0	0	0	79,131	0	0
American Financial Ins Grp	319,430	36,872	48,964	32,566	177,493	355	0	233	590	13,250	26
Direct General Group	6,328	791	471	0	0	0	0	0	5,066	0	0
Metropolitan Group	76,671	49,627	19,968	0	0	0	0	1,278	5,798	0	0
Vesta Ins Grp	89,364	17,770	15,964	0	(12)	(36)	19	(3)	1,872	0	53,643
Benchmark Insurance Co	64,807	26,385	2,849	2,037	540	0	0	0	0	0	0
Atlantic Companies	9,466	2,014	5,032	0	1,980	43	0	0	396	0	0
American Century Casualty Co	0	0	0	0	0	0	0	0	0	0	0
Young America Insurance Company	13,474	0	0	0	0	0	0	0	0	0	13,474
Assurant Inc Grp	635,660	292,715	2,326	2,993	0	0	56,289	0	650	100,566	14,815
Arbella Ins Grp	6,453	3,994	2,407	0	52	0	0	0	0	0	0
Assuranceamerica Ins Co	0	0	0	0	0	0	0	0	0	0	0
Fairfax Financial	192,023	63,978	54,463	229	19,292	8,443	20,238	197	18,690	0	574
Zurich Ins Grp	1,608,402	622,405	147,933	567,092	100,519	57,632	2,184	513	20,176	626	23,281
Amica Mutual Grp	14,827	7296	6234	0	691	0	0	249	357	0	0
Anchor General Ins Co	0	0	0	0	0	0	0	0	0	0	0
Louisiana Farm Bureau Mutual Ins Co	13,657	9,497	4,133	0	0	0	0	0	27	0	0
Seibels Bruce Grp	266	105	161	0	0	0	0	0	0	0	0
New Skylands Grp	0	0	0	0	0	0	0	0	0	0	0
Countrywide Insurance Co	5,081	897	4184	0	0	0	0	0	0	0	0
Total	7,630,622	2,998,810	1,059,536	925,081	573,194	328,509	290,947	263,500	243,801	222,628	184,496

Appendix Table C.10: Top 50 Groups Ceding Commercial Automobile Liability Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	FRANCE	BARBADO	IRELAND	SWEDEN	JAPAN
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	40,814	144,744	49,922	15,230	159,710
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	9,914	11,302	2,869	241	15,796
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	57,632	20,176	2,184	23,281	513	1,351
Hannover Grp	365,378	229,930	48,827	588	20,665	4,048	21,020	2,888	5,219	(880)	0
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	42,445	14,053	4	28,557	0
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	11,016	99,620	85,283	285	3,222
Lancer Ins Grp	118,822	118,848	0	0	0	0	0	0	0	0	0
Progressive Grp	18,654	18,653	0	1	0	0	0	0	0	0	0
Home State Ins Grp	2,656	351	2,305	0	0	0	0	0	0	0	0
Republic Companies Grp	12,353	3,902	7,998	450	0	3	0	0	0	0	0
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	38,586	673	14,713	55	1,498
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	355	590	0	26	233	921
Old Republic Grp	294,252	164,083	2,924	84,304	29,098	3,228	2,172	2,462	140	0	22
Iat Reins Co Grp	23,822	6,637	8,277	8,854	0	49	0	0	0	0	5
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	3,320	24,704	311	14,292	2	0
State Natl Grp	156,592	29,635	11,239	5,046	29,010	4,034	0	37,852	39,776	0	0
Aequicap Ins Co	(93)	(92)	(1)	0	0	0	0	0	0	0	0
Munich American Holding Corp	185,591	153,211	3,255	9,299	12,116	62	0	7,501	1	0	98
Hereford Insurance Co	898	0	898	0	0	0	0	0	0	0	0
Daimler Chrysler Grp	15,875	1,350	12,571	1,954	0	0	0	0	0	0	0
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	29,343	0	0	1,338	(1)
Nationwide Corp	140,776	39,415	55,022	39,415	0	214	5,227	0	0	1,248	0
Sentry Insurance Group	127,135	7,000	107,007	6,966	5,813	0	0	0	0	349	0
White Mountain Group	695,910	432,790	18,926	11,538	0	208	5	1,982	542	229,965	9
Rli Insurance Group	80,654	47,916	27,258	5,092	0	(2)	(2)	0	0	392	0
Arbella Ins Grp	6,453	3,994	2,407	52	0	0	0	0	0	0	0
The Hanover Ins Grp	59,616	23,711	25,818	3,715	0	480	5,011	0	104	765	0
Titus Group	0	0	0	0	0	0	0	0	0	0	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	1,832	0	0	46	0
Old American Cty Mutual Fire Ins Co	44,603	10,077	0	(1,017)	0	0	5,739	0	29,804	0	0
Canal Grp	13,574	174	1,429	0	0	0	0	0	0	0	0
Ooida Risk Retention Group Inc	19,767	0	19,767	0	0	0	0	0	0	0	0
Argonaut Grp	46,947	21,749	15,166	9,248	0	0	0	24	0	0	0
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	270	526	152	30	2,136
Plymouth Rock Ins Grp	19,827	1,751	303	0	0	0	17,773	0	0	0	0
Kingsway Grp	9,710	1,251	4,371	3,453	117	141	313	0	0	0	0
Harleysville Grp	12,366	6,046	1,697	4,446	0	0	177	0	0	0	0
Strickland Ins Grp	0	0	0	0	0	0	0	0	0	0	0
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
X L America	674,338	166,451	140,567	151,409	135,907	35,181	9,949	652	4,482	2,994	0
Meadowbrook Ins Grp	42,958	23,460	17,635	576	0	0	0	(56)	0	0	0
Nc Farm Bureau Insurance Grp	79,131	0	0	0	0	0	79,131	0	0	0	0
Topa Equities Limited	11,956	50	2,748	8,813	0	0	0	0	0	0	0
Auto Owners Grp	21,967	15,743	4,828	1,396	0	0	0	0	0	0	0
State Farm II	83,502	43,045	5,875	14,250	0	0	0	0	0	0	3,000
Safety Group (The)	4,824	2,499	2,289	36	0	0	0	0	0	0	0
Credit Suisse Group	13,867	2,229	2,436	5,107	0	0	0	0	4,095	0	0
Rhine Re Grp	0	0	0	0	0	0	0	0	0	0	0
Aon Corporation	173,699	93,878	28,018	182	9,828	0	629	305	7,576	0	0
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	18,690	20,238	574	197	13
Total	13,259,365	5,057,009	2,263,512	1,665,848	1,577,258	484,209	385,524	347,261	282,855	281,560	187,780

Appendix Table C.11: Top 50 Groups Ceding Automobile Physical Damage Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	BARBADO	SWITZERLAND	SWEDEN	FRANCE	TURKS & CAICOS	IRELAND
Old American Cty Mutual Fire Ins Co	44,603	10,077	0	(1,017)	0	0	0	0	5,739	0	29,804
Home State Ins Grp	2,656	351	2,305	0	0	0	0	0	0	0	0
Titus Group	0	0	0	0	0	0	0	0	0	0	0
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	144,744	236,195	15,230	40,814	9,273	49,922
Zurich Ins Grp	1,608,402	622,405	147,933	100,519	567,092	2,184	57,632	513	20,176	626	23,281
Hannover Grp	365,378	229,930	48,827	588	20,665	2,888	4,048	(880)	21,020	(2,418)	5,219
Republic Companies Grp	12,353	3,902	7,998	450	0	0	3	0	0	0	0
Assurant Inc Grp	635,660	292,715	2,326	0	2,993	56,289	0	0	650	100,566	14,815
State Natl Grp	156,592	29,635	11,239	5,046	29,010	37,852	4,034	0	0	0	39,776
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	14,053	80,633	28,557	42,445	0	4
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	11,302	8,292	241	9,914	26,457	2,869
South Carolina Farm Bureau Mutual	1,651	1,483	168	0	0	0	0	0	0	0	0
American Financial Ins Grp	319,430	36,872	48,964	177,493	32,566	0	355	233	590	13,250	26
California Cas Mgmt	1,015	504	511	0	0	0	0	0	0	0	0
Plymouth Rock Ins Grp	19,827	1,751	303	0	0	0	0	0	17,773	0	0
Protective Life Insurance Group	100,572	0	0	0	1,928	98,754	0	0	0	(1,266)	0
Nationwide Corp	140,776	39,415	55,022	39,415	0	0	214	1,248	5,227	0	0
Usagencies Grp	1,304	0	1,304	0	0	0	0	0	0	0	0
White Mountain Group	695,910	432,790	18,926	11,538	0	1,982	208	229,965	5	0	542
Munich American Holding Corp	185,591	153,211	3,255	9,299	12,116	7,501	62	0	0	0	1
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
Atlantic Companies	9,466	2,014	5,032	1,980	0	0	43	0	396	0	0
Sentry Insurance Group	127,135	7,000	107,007	6,966	5,813	0	0	349	0	0	0
Gmac Insurance Holding	181,808	36,314	17,476	396	0	55,883	0	0	0	54,201	0
American Modern Ins Grp	74,254	31,903	26,055	1,953	0	0	2,386	201	(4)	2,729	0
The Hanover Ins Grp	59,616	23,711	25,818	3,715	0	0	480	765	5,011	0	104
Arbella Ins Grp	6,453	3,994	2,407	52	0	0	0	0	0	0	0
Safety Group (The)	4,824	2,499	2,289	36	0	0	0	0	0	0	0
Lancer Ins Grp	118,822	118,848	0	0	0	0	0	0	0	0	0
Life Of The South Corp	29,214	0	0	0	0	22,706	0	0	0	5,753	0
Anchor General Ins Co	0	0	0	0	0	0	0	0	0	0	0
Allianz Insurance Group	206,799	51,761	22,021	32,306	194	311	3,320	2	24,704	0	14,292
Direct General Group	6,328	791	471	0	0	0	0	0	5,066	0	0
Metropolitan Group	76,671	49,627	19,968	0	0	0	0	1,278	5,798	0	0
United National Grp	1,693	1,863	1	11	0	0	(182)	0	0	0	0
Louisiana Farm Bureau Mutual Ins Co	13,657	9,497	4,133	0	0	0	0	0	27	0	0
Daimler Chrysler Grp	15,875	1,350	12,571	1,954	0	0	0	0	0	0	0
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	0	14,499	1,338	29,343	0	0
Fairfax Financial	192,023	63,978	54,463	19,292	229	20,238	8,443	197	18,690	0	574
United Automobile Ins Group	4,173	3,458	0	0	0	0	0	0	0	0	715
American Independent Ins Grp	0	0	0	0	0	0	0	0	0	0	0
American Family Ins Grp	31,758	14,039	15,435	1,955	0	0	0	0	329	0	0
Assuranceamerica Ins Co	0	0	0	0	0	0	0	0	0	0	0
Balboa Ins Grp	31,577	22,053	8,053	265	(115)	0	0	0	0	1,321	0
New Skylands Grp	0	0	0	0	0	0	0	0	0	0	0
Sterling Casualty Insurance Co	20,697	0	0	20,697	0	0	0	0	0	0	0
Royal & Sun Alliance Usa	96,374	(1,467)	16,442	(7,727)	(1,487)	94,687	(4,297)	0	218	0	(350)
Virginia Farm Bur	0	0	0	0	0	0	0	0	0	0	0
First Guard Insurance Co	0	0	0	0	0	0	0	0	0	0	0
Infinity Prop & Cas Ins Grp	387	87	300	0	0	0	0	0	0	0	0
<b>Total</b>	<b>11,301,929</b>	<b>4,365,764</b>	<b>1,785,282</b>	<b>1,166,624</b>	<b>1,164,937</b>	<b>571,374</b>	<b>416,368</b>	<b>279,237</b>	<b>253,931</b>	<b>210,492</b>	<b>181,594</b>



Appendix Table C.12: Top 50 Groups Ceding Non-Proportional Reinsurance Premium to Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISLANDS	SWITZERLAND	BARBADO	SWEDEN	FRANCE	IRELAND	JAPAN
Ge Global Insurance Holding Company	0	0	0	0	0	0	0	0	0	0	0
American Agricultural Insurance Co	179,147	88,452	36,252	11,374	0	15,985	0	507	4,605	21,972	0
White Mountain Group	695,910	432,790	18,926	11,538	0	208	1,982	229,965	5	542	9
American International Group	3,416,643	1,177,940	649,274	505,685	242,552	236,195	144,744	15,230	40,814	49,922	159,710
Fairfax Financial	192,023	63,978	54,463	19,292	229	8,443	20,238	197	18,690	574	13
Southern Farm Bureau Casualty	77,043	35,616	38,864	250	0	0	67	0	2,246	0	0
Wr Berkley Corp	69,177	34,561	10,686	13,645	4,264	1,220	526	30	270	152	2,136
X L America	674,338	166,451	140,567	151,409	135,907	35,181	652	2,994	9,949	4,482	0
Swiss Reinsurance Group	313,308	159,845	43,074	17,268	3,018	18,972	57,195	662	(414)	7,308	5,408
Cna Insurance Group	401,011	108,647	18,942	20,255	154,283	22,915	673	55	38,586	14,713	1,498
Munich American Holding Corp	185,591	153,211	3,255	9,299	12,116	62	7,501	0	0	1	98
Qbe Insurance Grp Ltd	94,332	19,751	53,482	250	0	130	554	0	13,532	1	(54)
Federated Mutual	5,445	2,068	3,020	95	0	131	0	0	131	0	0
Chubb & Son Inc	452,816	204,310	168,957	40,530	1,233	5,257	3,093	994	13,298	7,828	847
Nlc Mutual Insurance Co	3,661	2,082	2	1,224	0	0	0	0	0	0	0
Grinnell Mutual	23,164	3,909	12,169	3,155	0	948	0	110	414	2,459	0
Liberty Mutual Insurance Group	748,911	269,035	114,533	40,531	6,218	80,633	14,053	28,557	42,445	4	0
Platinum Underwriters Reins Co.	10,277	5,922	1,015	1,021	0	2,119	0	75	0	125	0
St Paul Travelers Grp	1,030,415	460,942	201,633	129,169	151,489	8,292	11,302	241	9,914	2,869	15,796
Ace Ltd	1,034,553	342,975	238,548	174,842	54,946	1,880	99,620	285	11,016	85,283	3,222
Everest Reinsurance Holdings Inc	34,189	28,731	4,387	908	0	0	0	0	0	0	(83)
Penn Mfr Asn Ins	27,482	1,357	3,168	6,002	(213)	(2)	(10,612)	0	0	27,780	0
Berkshire Hathaway	257,766	69,307	9,644	10,563	0	168,347	278	74	0	0	241
Emc Insurance Companies	27,347	10,574	11,603	4,846	0	115	0	102	0	0	0
Rockford Mutual Insurance Co	0	0	0	0	0	0	0	0	0	0	0
Axis Capital Grp	162,847	82,687	61,170	17,643	0	0	0	123	1,131	93	0
Hingham Mutual Group	5,047	2,322	1,852	163	0	0	0	109	466	0	0
Hartford Fire & Casualty Group	504,636	159,486	130,819	64,057	93,674	14,499	0	1,338	29,343	0	(1)
Wisconsin Re Grp	4,252	166	4,086	0	0	0	0	0	0	0	0
Farmers Mtl Hail Ins Co of Ia Grp	0	0	0	0	0	0	0	0	0	0	0
Endurance Grp	2,597	1,793	758	46	0	0	0	0	0	0	0
Ny Marine & General Grp	20,284	5,584	11,873	2,434	0	3	0	0	(23)	0	411
Rhine Re Grp	0	0	0	0	0	0	0	0	0	0	0
Hospital Services Group	9,962	928	6,331	0	0	0	0	0	2,703	0	0
Gmac Insurance Holding	181,808	36,314	17,476	396	0	0	55,883	0	0	0	0
Government Entities Mut Inc	0	0	0	0	0	0	0	0	0	0	0
Country Ins & Financial Services Grp	8,885	1,579	678	5,889	0	492	0	55	0	0	0
Converium Holding Grp	2,354	182	0	13	0	2,159	0	0	0	0	0
Toa-Re Insurance Co of America	3,828	3,825	3	0	0	0	0	0	0	0	0
Pxre Reinsurance Company	2,074	864	276	0	0	117	0	1	0	817	0
Mapfre Ins Grp	24,391	9,455	3,610	5,358	0	4,595	0	0	0	911	0
British American Insurance Co	0	0	0	0	0	0	0	0	0	0	0
Axa Insurance Group	43,106	29,735	10,932	1,153	0	2	(1)	840	0	3	205
New Jersey Manufacturers	4,170	493	2,643	1,034	0	0	0	0	0	0	0
Michigan Farm Bureau	527	0	527	0	0	0	0	0	0	0	0
Icw Group	20,519	9,369	8,266	1,272	0	419	44	128	1,017	2	0
Arch Capital Group	148,985	58,670	43,836	12,881	27,197	1,179	0	46	1,832	0	0
Lumbermans Mut Cas Group	5,027	4,890	(754)	131	419	(504)	50	254	63	(97)	218
Old Republic Grp	294,252	164,083	2,924	84,304	29,098	3,228	2,462	0	2,172	140	22
Farmers Mutual of Tennessee	294	0	294	0	0	0	0	0	0	0	0
Total	11,404,394	4,414,879	2,144,064	1,369,925	916,430	633,220	410,304	282,972	244,205	227,884	189,696

Appendix Table C.13: Top 50 Groups In Homeowners Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Ceding Co Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN IS	IRELAND	SWITZERLA	BARBADOS	FRANCE	JAPAN	CANADA
American International Group	6,069,295	1,782,036	1,727,886	951,858	484,408	29,807	277,844	237,862	102,024	144,551	65,457
Poe Financial Grp	154,229	137,725	11,926	0	0	0	0	0	4,578	0	0
Allstate Insurance Group	800,335	150,393	383,337	30,606	0	34	62,052	0	15,227	50,311	6,849
United Services Automobile Asn Grp	176,734	70,802	85,184	9,693	1,695	0	0	0	8,959	0	0
Tower Hill Ins Grp	71,633	45,850	23,726	0	0	0	1,281	0	591	0	0
State Farm II	147,183	101,720	10,696	26,956	0	0	0	0	0	0	7,811
Vesta Ins Grp	49,509	12,820	11,863	3,654	0	16,650	93	0	3,092	1,091	38
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	814,389	52,420	3,156	41,690	1,605	140
Hannover Grp	614,000	143,809	313,880	1,790	18,798	17,456	25,639	1,985	26,418	127	8,377
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	11,032	153,964	11,274	59,150	4,459	51,135
Palisades Group	37,142	23,377	278	4,496	0	0	0	0	8,991	0	0
Universal Ins Co Grp	77,793	71,352	645	4,161	0	0	1,459	0	(40)	0	0
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
Chubb & Son Inc	1,189,316	394,410	589,146	83,578	8,961	19,199	20,638	15,376	23,020	1,535	22,153
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	73,741	22,525	132,064	75,861	57,340	7,838
Nc Farm Bureau Insurance Grp	0	0	0	0	0	0	0	0	0	0	0
Gulfstream Prop & Cas Ins Co	67,986	51,164	1,006	0	0	0	0	0	15,816	0	0
Sunshine State Insurance Co	91,263	19,324	69,925	32	0	0	200	0	1,782	0	0
Geovera Holdings Inc Grp	19,074	5,571	5,172	7,894	0	0	0	0	437	0	0
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	95	49,531	63,726	91,015	4,817	6,374
Assurant Inc Grp	362,852	121,079	15,928	0	1,580	0	0	6,033	40	1,732	(244)
Metropolitan Group	63,228	29,853	30,726	187	0	27	89	0	477	561	0
Nationwide Corp	277,948	71,428	97,925	67,521	0	0	13,333	0	16,735	701	3,013
Vanguard Fire & Cas Co	28,992	26,424	2,568	0	0	0	0	0	0	0	0
Cypress Holdings Grp	0	0	0	0	0	0	0	0	0	0	0
Tx Farm Bur Mut	0	0	0	0	0	0	0	0	0	0	0
Universal Property & Casualty Ins	0	0	0	0	0	0	0	0	0	0	0
Atlantic Companies	32,601	4,614	13,428	8,309	0	0	4,443	0	388	196	0
St Johns Ins Co Inc	13,285	938	781	0	0	11,566	0	0	0	0	0
Southern Farm Bureau Casualty	106,166	44,490	58,636	0	0	0	0	0	3,040	0	0
Kingsway Grp	24,828	3,586	12,068	5,605	1,116	0	2,301	0	137	0	0
Florida Peninsula Ins Co	0	0	0	0	0	0	0	0	0	0	0
Arx Holding Corp Grp	3,835	1,663	1,947	225	0	0	0	0	0	0	0
United Prop & Cas Ins Co	41,828	2,858	38,980	(10)	0	0	0	0	0	0	0
White Mountain Group	981,545	793,954	11,068	5,986	0	25,886	449	137,106	1,648	709	42
Mississippi Farm Bureau Mut Ins Co	0	0	0	0	0	0	0	0	0	0	0
The Hanover Ins Grp	207,222	77,923	105,092	8,961	0	27	538	0	11,718	0	(12)
Florida Family Mutual Insurance Co	34,473	225	(16)	0	0	34,264	0	0	0	0	0
Louisiana Farm Bureau Mutual Ins Co	19,271	7,112	11,586	0	0	0	0	0	573	0	0
Axa Insurance Group	69,893	28,748	32,138	3,168	0	21	(146)	0	3,662	279	10
21st Century Holding Grp	53,728	38,534	10,685	0	0	0	0	0	4,509	0	0
Virginia Farm Bur	0	0	0	0	0	0	0	0	0	0	0
First Home Ins Co	4,208	2,253	234	0	0	0	0	0	1,721	0	0
Balboa Ins Grp	86,626	63,676	15,765	(32)	6,805	(38)	0	0	0	0	0
Preferred Mutual Insurance Co	0	0	0	0	0	0	0	0	0	0	0
Philadelphia Consolidated Holding Gr	74,748	46,302	15,644	5,432	0	0	0	0	6,963	0	0
Oklahoma Farm Bur	0	0	0	0	0	0	0	0	0	0	0
California Cas Mgmt	239	225	14	0	0	0	0	0	0	0	0
South Carolina Farm Bureau Mutual	480	480	0	0	0	0	0	0	0	0	0
American Family Ins Grp	0	0	0	0	0	0	0	0	0	0	0
Total	22,307,845	7,477,141	6,659,811	2,186,913	1,553,422	1,054,156	688,653	608,582	530,222	270,014	178,981

Appendix Table C.14: Top 50 Groups In Aircraft Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN IS	BARBADOS	IRELAND	SWITZERLA	FRANCE	JAPAN	SWEDEN
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	317,065	42,761	403,696	145,022	165,707	24,846
Berkshire Hathaway	918,892	240,763	340,819	31,852	0	19,606	10,856	150,213	8,205	85,085	8,593
Ace Ltd	2,965,965	846,944	1,124,248	435,439	109,043	79,004	98,113	73,419	74,060	17,046	4,971
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	63,726	95	49,531	91,015	4,817	6,118
Old Republic Grp	459,067	209,965	31,929	134,669	39,322	1,452	1,615	30,384	2,283	4,847	195
X L America	1,645,922	358,043	461,366	199,201	290,443	1,630	121,354	121,671	21,583	15,344	7,443
Hcc Ins Holdings Grp	821,110	146,210	388,495	163,122	13,693	36,509	18,377	17,958	23,916	3,423	180
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	3,156	814,389	52,420	41,690	1,605	4,335
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	11,274	11,032	153,964	59,150	4,459	134,059
American National Fncl Group	63,638	2,764	38,648	12,538	0	13	0	5,706	2,129	0	827
Axa Insurance Group	90,798	36,962	43,128	3,391	0	28	60	255	3,662	395	1,030
Allianz Insurance Group	1,144,340	79,630	167,095	432,671	27,124	1,541	12,360	(5,001)	296,742	18,437	2,014
Swiss Reinsurance Group	2,141,458	484,852	286,746	284,035	186,292	640,727	51,792	83,290	39,410	58,785	8,766
Chubb & Son Inc	1,189,316	394,410	589,146	83,578	8,961	15,376	19,199	20,638	23,020	1,535	1,778
Hannover Grp	614,000	143,809	313,880	1,790	18,798	1,985	17,456	25,639	26,418	127	464
Arch Capital Group	293,757	145,713	111,588	24,518	11,057	0	0	1,150	(256)	0	(2)
Mitsui Sumitomo Ins Grp	26,483	6,720	4,042	28	1,439	0	15	573	(76)	9,558	0
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	0	7	990	471	24,237	5
Navigators Group Inc	157,030	33,631	67,577	30,250	0	0	7,012	5,251	854	3,973	277
Glencoe Us Holdings Inc	3,297	0	133	2,683	0	0	0	43	0	0	0
Shelter Ins Cos	42,778	28,483	625	4,621	0	0	0	1,379	6,581	0	1,089
Royal & Sun Alliance Usa	1,117,739	236,709	344,975	137,792	1,095	397,385	4,870	24,422	11,743	29,408	(37)
Ny Marine & General Grp	176,968	27,787	84,147	22,719	0	1	417	6,155	2,759	28,769	442
Qbe Insurance Grp Ltd	145,128	35,894	81,053	263	0	88	3	(1)	25,087	223	(5)
Axis Capital Grp	522,310	261,268	211,270	47,633	0	0	82	0	2,018	0	39
White Mountain Group	1,131,187	801,177	39,822	25,706	0	137,106	25,886	1,421	1,936	748	106,779
Atlantic Companies	32,601	4,614	13,428	8,309	0	0	0	4,443	388	196	0
Amerco Corp	13,904	169	9,982	124	0	0	1	3,080	0	0	0
Pxre Reinsurance Company	22,842	557	550	3	0	0	16,154	3,000	0	0	149
Sentry Insurance Group	25,142	11,535	6,817	3,611	1,798	0	0	55	97	0	690
The Hanover Ins Grp	213,921	77,804	106,707	14,066	0	0	27	571	11,834	0	2,925
<b>Total</b>	<b>31,524,577</b>	<b>9,205,904</b>	<b>9,060,115</b>	<b>4,022,468</b>	<b>2,126,162</b>	<b>1,727,672</b>	<b>1,273,933</b>	<b>1,236,315</b>	<b>921,741</b>	<b>478,724</b>	<b>317,970</b>

Appendix Table C.15: Top 50 Groups In Commercial Multiple Peril Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISL	SWITZERLAND	IRELAND	FRANCE	BARBADOS	JAPAN	SWEDEN
Chubb & Son Inc	1,189,316	394,410	589,146	83,578	8,961	20,638	19,199	23,020	15,376	1,535	1,778
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	52,420	814,389	41,690	3,156	1,605	4,335
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	403,696	42,761	145,022	317,065	165,707	24,846
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	22,525	73,741	75,861	132,064	57,340	1,428
Ace Ltd	2,965,965	846,944	1,124,248	435,439	109,043	73,419	98,113	74,060	79,004	17,046	4,971
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	49,531	95	91,015	63,726	4,817	6,118
Qbe Insurance Grp Ltd	145,128	35,894	81,053	263	0	(1)	3	25,087	88	223	(5)
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	153,964	11,032	59,150	11,274	4,459	134,059
State Farm Il	147,183	101,720	10,696	26,956	0	0	0	0	0	0	0
Church Mutual Insurance Co	78,890	11,311	66,229	918	0	432	0	0	0	0	0
Allianz Insurance Group	1,144,340	79,630	167,095	432,671	27,124	(5,001)	12,360	296,742	1,541	18,437	2,014
Munich American Holding Corp	563,375	229,916	20,717	52,918	31,508	(6,096)	19,747	6,056	5,470	9,420	(763)
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	990	7	471	0	24,237	5
White Mountain Group	1,131,187	801,177	39,822	25,706	0	1,421	25,886	1,936	137,106	748	106,779
Guideone Ins Grp	75,974	31,656	28,095	67	0	0	0	15,114	0	0	1,042
State Natl Grp	128,580	33,767	11,918	3,209	17,013	3,982	30,070	0	27,703	0	0
Cna Insurance Group	2,804,910	564,113	771,961	66,441	263,968	892,236	9,180	128,688	2,150	36,570	3,781
Hannover Grp	614,000	143,809	313,880	1,790	18,798	25,639	17,456	26,418	1,985	127	464
The Hanover Ins Grp	213,921	77,804	106,707	14,066	0	571	27	11,834	0	0	2,925
Greater New York	7,590	(390)	56	7,924	0	0	0	0	0	0	0
Philadelphia Consolidated Holding Gr	74,748	46,302	15,644	5,432	0	0	0	6,963	0	0	407
Nationwide Corp	277,948	71,428	97,925	67,521	0	13,333	0	16,735	0	701	3,383
Wr Berkley Corp	159,217	51,323	34,813	38,054	2,958	3,157	7,298	5,339	1,586	4,966	142
Cincinnati FncI Cp	36,766	5,122	17,311	(38)	0	10,747	0	3,624	0	0	0
Argonaut Grp	105,442	34,445	57,346	11,019	0	153	0	541	223	443	89
Mercer Ins Grp	534	34	107	393	0	0	0	0	0	0	0
Sompo Japan Ins Grp	83,262	1,782	76,119	1,294	0	336	0	1,067	0	1,410	1
Tower Grp Companies	82,756	47,883	229	2,700	0	0	31,944	0	0	0	0
Nuclear Electric Insurance Ltd											
Cooperativa De Seguros Multiples Grp	30,337	9,008	14,603	5,051	0	0	0	2	0	0	233
Seguros Triples Inc	6,819	1,039	879	3,837	0	0	0	0	0	0	0
Catholic Relief Ins Co of America	60,002	3,101	40,419	14,635	0	0	(6,359)	8,206	0	0	0
Mitsui Sumitomo Ins Grp	26,483	6,720	4,042	28	1,439	573	15	(76)	0	9,558	0
Ge Global Insurance Holding Company	855	3	0	0	0	0	0	0	0	0	0
Universal Ins Co Grp	77,793	71,352	645	4,161	0	1,459	0	(40)	0	0	0
Everest Reinsurance Holdings Inc	394,084	58,362	64,948	6,652	0	1	177,640	5,797	60,950	6,901	(5)
First Nonprofit Mutual Insurance Co	2	0	2	0	0	0	0	0	0	0	0
Utica First Insurance Company	(11)	(8)	(3)	0	0	0	0	0	0	0	0
Meadowbrook Ins Grp	49,296	13,976	32,860	7	0	27	0	3	1,395	0	0
National Ins Co Grp	4,073	0	0	2,526	0	1,520	0	0	0	0	0
Fairfax Financial	1,125,162	221,275	356,644	98,582	373	36,747	77,936	60,273	198,743	17,983	2,195
Mapfre Ins Grp	19,226	11,848	1,181	4,502	5	1,342	102	0	0	1	0
Brotherhood Mutual Insurance Co	9,106	2,389	5,452	1,037	0	0	0	0	0	0	0
Vermont Mutual Grp	1,122	(1,629)	803	1,948	0	0	0	0	0	0	0
Arch Capital Group	293,757	145,713	111,588	24,518	11,057	1,150	0	(256)	0	0	(2)
Utica National Ins Grp	24,557	1,973	12,407	8,280	0	1,626	0	132	0	30	2
Safeco Insurance Group	65,128	17,362	34,809	1,340	0	(513)	0	8,181	0	334	46
Markel Corporation Grp	230,667	87,018	114,425	16,559	0	0	0	585	1,930	994	2,784
Michigan Millers Mutual Insurance Co	6,812	269	3,090	3,488	0	0	0	(35)	0	0	0
Harleysville Grp	5,157	379	2,533	2,230	0	0	0	15	0	0	0
Total	33,116,552	9,893,244	9,709,784	3,745,852	2,128,856	1,762,024	1,462,642	1,139,220	1,062,535	385,592	303,052

Appendix Table C.16: Top 50 Groups In Ocean Marine Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	U.K.	BERMUDA	GERMANY	CAYMAN ISI	SWITZERLA	BARBADOS	IRELAND	FRANCE	JAPAN	SWEDEN
American International Group	8,111,646	2,250,209	2,490,983	1,233,523	569,629	403,696	317,065	42,761	145,022	165,707	24,846
Navigators Group Inc	157,030	67,577	33,631	30,250	0	5,251	0	7,012	854	3,973	277
X L America	1,645,922	461,366	358,043	199,201	290,443	121,671	1,630	121,354	21,583	15,344	7,443
Hcc Ins Holdings Grp	821,110	388,495	146,210	163,122	13,693	17,958	36,509	18,377	23,916	3,423	180
White Mountain Group	1,131,187	39,822	801,177	25,706	0	1,421	137,106	25,886	1,936	748	106,779
Cna Insurance Group	2,804,910	771,961	564,113	66,441	263,968	892,236	2,150	9,180	128,688	36,570	3,781
Ny Marine & General Grp	176,968	84,147	27,787	22,719	0	6,155	1	417	2,759	28,769	442
St Paul Travelers Grp	3,110,109	1,085,441	1,043,523	350,294	219,512	22,525	132,064	73,741	75,861	57,340	1,428
Ace Ltd	2,965,965	1,124,248	846,944	435,439	109,043	73,419	79,004	98,113	74,060	17,046	4,971
Chubb & Son Inc	1,189,316	589,146	394,410	83,578	8,961	20,638	15,376	19,199	23,020	1,535	1,778
State Natl Grp	128,580	11,918	33,767	3,209	17,013	3,982	27,703	30,070	0	0	0
Allianz Insurance Group	1,144,340	167,095	79,630	432,671	27,124	(5,001)	1,541	12,360	296,742	18,437	2,014
Arch Capital Group	293,757	111,588	145,713	24,518	11,057	1,150	0	0	(256)	0	(2)
Liberty Mutual Insurance Group	1,959,320	630,867	481,074	153,098	18,207	153,964	11,274	11,032	59,150	4,459	134,059
American Steamship Owners Mut Prot	31,210	28,187	1,541	0	0	833	4	0	14	15	0
American Financial Ins Grp	289,090	77,187	41,608	77,784	36,921	990	0	7	471	24,237	5
Zurich Ins Grp	3,352,666	231,476	1,177,644	239,617	700,839	52,420	3,156	814,389	41,690	1,605	4,335
Axis Capital Grp	522,310	211,270	261,268	47,633	0	0	0	82	2,018	0	39
Berkshire Hathaway	918,892	340,819	240,763	31,852	0	150,213	19,606	10,856	8,205	85,085	8,593
Samsung Fire & Marine Ins Co Ltd	3,007	7	0	0	0	0	0	0	0	0	0
Markel Corporation Grp	230,667	114,425	87,018	16,559	0	0	1,930	0	585	994	2,784
Swiss Reinsurance Group	2,141,458	286,746	484,852	284,035	186,292	83,290	640,727	51,792	39,410	58,785	8,766
Nationwide Corp	277,948	97,925	71,428	67,521	0	13,333	0	0	16,735	701	3,383
Hyundai Marine & Fire Ins Co Ltd	28,347	16,132	0	518	0	56	0	7	3,017	0	0
Rli Insurance Group	94,237	64,570	39,086	11,904	0	415	0	0	647	160	260
Lg Insurance Company Ltd Us Branch											
Ge Global Insurance Holding Company	855	0	3	0	0	0	0	0	0	0	0
Sunderland Marine Mutual Co Ltd	1,962	196	6	6	0	4	0	0	3	0	0
Hartford Fire & Casualty Group	1,832,262	1,002,160	398,182	213,834	91,501	49,531	63,726	95	91,015	4,817	6,118
Integrand Assurance Co											
United Services Automobile Asn Grp	176,734	85,184	70,802	9,693	1,695	0	0	0	8,959	0	401
Fm Global Grp	708,818	370,530	204,241	81,734	(124)	7,069	9,753	2,026	15,415	2,339	2,873
Cooperativa De Seguros Multiples Grp	30,337	14,603	9,008	5,051	0	0	0	0	2	0	233
Seaworthy Insurance Co	159	124	0	35	0	0	0	0	0	0	0
Mitsui Sumitomo Ins Grp	26,483	4,042	6,720	28	1,439	573	0	15	(76)	9,558	0
The Hanover Ins Grp	213,921	106,707	77,804	14,066	0	571	0	27	11,834	0	2,925
Fairfax Financial	1,125,162	356,644	221,275	98,582	373	36,747	198,743	77,936	60,273	17,983	2,195
Mapfre Ins Grp	19,226	1,181	11,848	4,502	5	1,342	0	102	0	1	0
Atlantic Companies	32,601	13,428	4,614	8,309	0	4,443	0	0	388	196	0
Seven Seas Insurance Co Inc	231	205	0	14	0	0	0	0	0	0	0
Universal Ins Co Grp	77,793	645	71,352	4,161	0	1,459	0	0	(40)	0	0
National Security	9,669	4,588	4,633	0	0	0	0	0	448	0	0
American Modern Ins Grp	73,489	31,072	21,223	1,457	0	1,898	0	0	1	0	382
Sompo Japan Ins Grp	83,262	76,119	1,782	1,294	0	336	0	0	1,067	1,410	1
Bankers Ins Grp	14,386	6,031	3,794	0	4,561	0	0	0	0	0	0
Wr Berkley Corp	159,217	34,813	51,323	38,054	2,958	3,157	1,586	7,298	5,339	4,966	142
Axa Insurance Group	90,798	43,128	36,962	3,391	0	255	28	60	3,662	395	1,030
American Agricultural Insurance Co	186,266	2,997	44,785	9,434	0	118,754	0	10,493	211	0	(408)
Windsor Mount Joy Mutual Ins Co	(72)	(53)	0	0	0	0	0	0	0	0	0
Van Enterprises Group	11,884	1,290	7,835	0	0	0	0	0	0	0	0
<b>Total</b>	<b>38,405,435</b>	<b>11,408,258</b>	<b>11,100,405</b>	<b>4,494,837</b>	<b>2,575,110</b>	<b>2,246,754</b>	<b>1,700,682</b>	<b>1,444,687</b>	<b>1,164,628</b>	<b>566,598</b>	<b>332,053</b>

Appendix Table C.17: Top 50 Groups In Medical Malpractice Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	IRELAND	CAYMAN ISL	SWITZERLA	BARBADOS	FRANCE	JAPAN	CANADA
Berkshire Hathaway	918,892	240,763	340,819	31,852	10,856	0	150,213	19,606	8,205	85,085	3,524
Ismie Group	145,694	16,165	51,869	49,116	0	0	26,890	0	1,561	0	0
Cna Insurance Group	2,804,910	564,113	771,961	66,441	9,180	263,968	892,236	2,150	128,688	36,570	6,357
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	42,761	569,629	403,696	317,065	145,022	165,707	98,254
State Volunteer Mutual Insurance Co	240,290	1,962	62,338	18,079	153,693	0	4,199	0	0	0	0
Mag Mutual Insurance Group	311,615	7,112	37,239	13,197	249,804	0	4,092	0	171	0	0
Proassurance Corp Grp	201,016	10,789	101,817	66,168	0	2,045	188	84	19,881	0	0
Everest Reinsurance Holdings Inc	394,084	58,362	64,948	6,652	177,640	0	1	60,950	5,797	6,901	64
Alleghany Grp	444,857	192,962	187,928	33,081	0	0	0	0	30,886	0	0
Medical Ins Grp	27,918	4,339	20,772	2,002	0	0	0	0	805	0	0
Preferred Professional Insurance Co	38,564	20,651	6,361	4,329	0	0	7,223	0	0	0	0
Arch Capital Group	293,757	145,713	111,588	24,518	0	11,057	1,150	0	(256)	0	(9)
Ace Ltd	2,965,965	846,944	1,124,248	435,439	98,113	109,043	73,419	79,004	74,060	17,046	18,960
Mdadvantage Ins Co of Nj	29,708	29,708	0	0	0	0	0	0	0	0	0
Hum Group Of Companies	61,006	8,111	24,826	9,827	13,604	257	0	0	3,042	0	0
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	814,389	700,839	52,420	3,156	41,690	1,605	140
Fpic Insurance Group Inc	213,298	0	48,163	37,622	109,966	10,837	5,135	0	0	0	0
Health Care Industry Liab Recip Ins	29,450	29,450	0	0	0	0	0	0	0	0	0
Doctors Co Grp	37,502	6,537	14,300	3,752	0	(437)	0	0	11,346	0	0
Fairfax Financial	1,125,162	221,275	356,644	98,582	77,936	373	36,747	198,743	60,273	17,983	3,092
Medical Ins Grp Of Md	20,733	61	16,304	4,368	0	0	0	0	0	0	0
Ap Capital Grp	47,191	1,730	7,046	37,302	0	0	0	0	1,113	0	0
Markel Corporation Grp	230,667	87,018	114,425	16,559	0	0	0	1,930	585	994	28
Northwest Physicians Mutual Ins Co											
Pennsylvania Physicians Recip Insur											
California Healthcare Ins Co Inc Rrg	1,548	0	51	1,497	0	0	0	0	0	0	0
Physicians Ins A Mut Grp	37,133	(5)	26,149	8,904	0	0	0	0	2,085	0	0
Utah Medical Insurance Associates	11,950	0	10,043	1,547	0	0	360	0	0	0	0
Preferred Physicians Medical Rrg	12,337	0	0	12,337	0	0	0	0	0	0	0
Midwest Medical Insurance Co	9,282	1,090	3,852	3,510	257	0	223	0	350	0	0
American Healthcare Specialty	43,590	27,739	8,013	7,353	448	0	0	0	0	0	0
Promutual Companies	4,272	1,424	0	0	0	0	0	0	2,848	0	0
Physicians Insurance Co of Wi											
Millennium Ins Co	(16)	0	(16)	0	0	0	0	0	0	0	0
Hospital Services Group	9,601	948	6,258	0	0	0	0	0	2,395	0	0
American Physicians Ins Exchange	5,076	0	2,742	2,334	0	0	0	0	0	0	0
Medical Alliance Ins Co	15,152	352	1,166	0	0	0	0	0	300	0	0
Mha Ins Co	30,132	2,676	13,361	4,373	0	6,579	3,143	0	0	0	0
Medical Mutual Insurance Co of Maine	11,262	0	6,142	5,120	0	0	0	0	0	0	0
Mcic Vermont Inc Rrg	6,182	0	0	1,324	4,858	0	0	0	0	0	0
Pennsylvania Hlthcare Providers Ins	9,789	2,399	3,782	0	0	0	419	0	3,189	0	0
Wr Berkley Corp	159,217	51,323	34,813	38,054	7,298	2,958	3,157	1,586	5,339	4,966	61
Pica Grp	22,688	212	20,331	0	1,944	0	0	0	172	0	0
Care Rrg Inc	11,200	0	0	0	11,200	0	0	0	0	0	0
Connecticut Medical Insurance Co	42,666	0	30,706	0	0	0	1,268	0	0	0	10,692
Nevada Mutual Ins Co Inc	6,610	294	6,316	0	0	0	0	0	0	0	0
Professional Liab Ins Co of America	3,186	1,512	80	478	0	0	0	0	1,116	0	0
Professional Cas Assn	7,559	0	0	0	7,559	0	0	0	0	0	0
Ophthalmic Mutual Ins Co Rrg	12,571	0	10,703	1,868	0	0	0	0	0	0	0
Consortium Rrg	930	253	427	250	0	0	0	0	0	0	0
Total	22,520,508	6,252,609	6,130,200	2,520,975	1,791,506	1,677,148	1,666,179	684,274	550,663	336,857	141,163

Appendix Table C.18: Top 50 Groups In Allied Lines &amp; Earthquake Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN IS	SWITZERLA	IRELAND	FRANCE	BARBADOS	JAPAN	CANADA
Ace Ltd	2,965,965	846,944	1,124,248	435,439	109,043	73,419	98,113	74,060	79,004	17,046	18,960
Allianz Insurance Group	1,144,340	79,630	167,095	432,671	27,124	(5,001)	12,360	296,742	1,541	18,437	89,594
Wells Fargo Grp	(246)	(106)	(108)	(13)	0	(1)	0	(11)	0	0	0
State Farm II	147,183	101,720	10,696	26,956	0	0	0	0	0	0	7,811
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	403,696	42,761	145,022	317,065	165,707	98,254
Fidelity National Financial Inc	3,473	3,227	246	0	0	0	0	0	0	0	0
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	990	7	471	0	24,237	368
Fm Global Grp	708,818	204,241	370,530	81,734	(124)	7,069	2,026	15,415	9,753	2,339	2,856
Alliance Ins Grp	0	0	0	0	0	0	0	0	0	0	0
Agri General Insurance Company	(2,868)	19	1,490	(4,333)	0	2	0	5	0	0	0
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	22,525	73,741	75,861	132,064	57,340	7,838
American Agri Business Insurance Co	(43,149)	(4,779)	0	(29,897)	0	(7,286)	0	(956)	0	0	0
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	52,420	814,389	41,690	3,156	1,605	140
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	49,531	95	91,015	63,726	4,817	6,374
X L America	1,645,922	358,043	461,366	199,201	290,443	121,671	121,354	21,583	1,630	15,344	17,015
Allstate Insurance Group	800,335	150,393	383,337	30,606	0	62,052	34	15,227	0	50,311	6,849
Alleghany Grp	444,857	192,962	187,928	33,081	0	0	0	30,886	0	0	0
Assurant Inc Grp	362,852	121,079	15,928	0	1,580	0	0	40	6,033	1,732	(244)
Ge Global Insurance Holding Company	855	3	0	0	0	0	0	0	0	0	0
United Services Automobile Asn Grp	176,734	70,802	85,184	9,693	1,695	0	0	8,959	0	0	0
Axis Capital Grp	522,310	261,268	211,270	47,633	0	0	82	2,018	0	0	0
Producers Lloyds Grp	250	18	9	185	0	16	0	0	0	0	3
Nau Country Insurance Co	(499)	(45)	(51)	(336)	0	(7)	0	(31)	0	0	0
Poe Financial Grp	154,229	137,725	11,926	0	0	0	0	4,578	0	0	0
Nationwide Corp	277,948	71,428	97,925	67,521	0	13,333	0	16,735	0	701	3,013
Selective Insurance	25,323	4,589	6,485	8,526	0	22	(8)	4,670	0	965	0
American Agricultural Insurance Co	186,266	44,785	2,997	9,434	0	118,754	10,493	211	0	0	0
Guideone Ins Grp	75,974	31,656	28,095	67	0	0	0	15,114	0	0	0
Farmers Mtl Hail Ins Co Of Ia Grp	1,336	855	286	29	0	34	0	0	0	0	30
Arch Capital Group	293,757	145,713	111,588	24,518	11,057	1,150	0	(256)	0	0	(9)
Harleysville Grp	5,157	379	2,533	2,230	0	0	0	15	0	0	0
Geovera Holdings Inc Grp	19,074	5,571	5,172	7,894	0	0	0	437	0	0	0
White Mountain Group	1,131,187	801,177	39,822	25,706	0	1,421	25,886	1,936	137,106	748	(2,822)
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	153,964	11,032	59,150	11,274	4,459	51,135
Iat Reins Co Grp	41,165	8,041	18,139	12,185	2	2,692	0	40	0	0	0
Icw Group	19,649	5,070	12,467	114	0	16	0	2,420	0	0	1
Markel Corporation Grp	230,667	87,018	114,425	16,559	0	0	0	585	1,930	994	28
Fairfax Financial	1,125,162	221,275	356,644	98,582	373	36,747	77,936	60,273	198,743	17,983	3,092
Cooperativa De Seguros Multiples Grp	30,337	9,008	14,603	5,051	0	0	0	2	0	0	427
Qbe Insurance Grp Ltd	145,128	35,894	81,053	263	0	(1)	3	25,087	88	223	0
Glencoe Us Holdings Inc	3,297	0	133	2,683	0	43	0	0	0	0	0
Auto Owners Grp	3,927	(374)	4,367	(66)	0	0	0	0	0	0	0
Safeco Insurance Group	65,128	17,362	34,809	1,340	0	(513)	0	8,181	0	334	1,813
Cna Insurance Group	2,804,910	564,113	771,961	66,441	263,968	892,236	9,180	128,688	2,150	36,570	6,357
Rli Insurance Group	94,237	39,086	64,570	11,904	0	415	0	647	0	160	260
Philadelphia Consolidated Holding Gr	74,748	46,302	15,644	5,432	0	0	0	6,963	0	0	0
Tower Hill Ins Grp	71,633	45,850	23,726	0	0	1,281	0	591	0	0	0
Aspen Specialty Ins Co	89,544	22,031	61,138	1,907	0	0	0	0	909	0	0
Iowa Farm Bureau	3,397	324	21	60	0	0	51	46	0	0	0
Arx Holding Corp Grp	32,515	16,189	13,917	2,248	0	0	0	0	0	0	0
Total	34,537,920	10,379,500	10,190,954	3,901,398	2,341,770	2,002,690	1,299,535	1,154,109	966,172	422,052	319,143

Appendix Table C.19: Top 50 Groups In Workers' Compensation Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN IS	SWITZERLA	IRELAND	BARBADOS	FRANCE	JAPAN	SWEDEN
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	153,964	11,032	11,274	59,150	4,459	134,059
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	22,525	73,741	132,064	75,861	57,340	1,428
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	52,420	814,389	3,156	41,690	1,605	4,335
Aon Corporation	311,204	165,613	57,828	423	10,102	0	6,810	370	346	0	1
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	403,696	42,761	317,065	145,022	165,707	24,846
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	49,531	95	63,726	91,015	4,817	6,118
Old Republic Grp	459,067	209,965	31,929	134,669	39,322	30,384	1,615	1,452	2,283	4,847	195
Wr Berkley Corp	159,217	51,323	34,813	38,054	2,958	3,157	7,298	1,586	5,339	4,966	142
Companion L I C	1,914	216	589	1,014	0	0	0	0	69	0	26
Blue Cross & Blue Shield Of Mi Grp	45,952	35,546	0	0	0	10,406	0	0	0	0	0
Berkshire Hathaway	918,892	240,763	340,819	31,852	0	150,213	10,856	19,606	8,205	85,085	8,593
Hannover Grp	614,000	143,809	313,880	1,790	18,798	25,639	17,456	1,985	26,418	127	464
Ace Ltd	2,965,965	846,944	1,124,248	435,439	109,043	73,419	98,113	79,004	74,060	17,046	4,971
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	990	7	0	471	24,237	5
Kentucky Employers Mutual Insurance	82,723	10,311	62,101	0	0	0	10,311	0	0	0	0
Argonaut Grp	105,442	34,445	57,346	11,019	0	153	0	223	541	443	89
X L America	1,645,922	358,043	461,366	199,201	290,443	121,671	121,354	1,630	21,583	15,344	7,443
Chubb & Son Inc	1,189,316	394,410	589,146	83,578	8,961	20,638	19,199	15,376	23,020	1,535	1,778
Alaska National Insurance Company	(2)	0	(2)	0	0	0	0	0	0	0	0
Zenith National Ins Grp	1,086	(296)	1,416	(122)	0	0	0	0	10	50	0
Royal & Sun Alliance Usa	1,117,739	236,709	344,975	137,792	1,095	24,422	4,870	397,385	11,743	29,408	(37)
First Commercial Grp	21,649	0	1,161	0	0	0	11,268	0	0	0	0
Sentry Insurance Group	25,142	11,535	6,817	3,611	1,798	55	0	0	97	0	690
Aim Mut Grp	234	0	124	110	0	0	0	0	0	0	0
Benchmark Insurance Co	51,558	26,856	5,868	2,360	50	0	0	0	0	0	0
Rhine Re Grp											
Cna Insurance Group	2,804,910	564,113	771,961	66,441	263,968	892,236	9,180	2,150	128,688	36,570	3,781
Penn Mfr Asn Ins	306,397	2,649	37,436	29,617	167,144	957	66,987	7	177	817	0
Amerisure Companies	75,354	70,454	198	3,985	0	0	0	0	254	225	0
Cincinnati Fncl Cp	36,766	5,122	17,311	(38)	0	10,747	0	0	3,624	0	0
West Bend Mutual Group	9,999	211	1,377	7,827	0	0	0	0	584	0	0
Saif Corp	0	0	0	0	0	0	0	0	0	0	0
Aequicap Ins Co	1,202	1,130	72	0	0	0	0	0	0	0	0
Associated Industries Ins Co Inc	42,563	1,299	280	3,727	0	0	25,791	11,466	0	0	0
Iat Reins Co Grp	41,165	8,041	18,139	12,185	2	2,692	0	0	40	0	0
Guard Ins Companies	30,908	9,332	623	9,029	0	0	0	0	11,924	0	0
Ge Global Insurance Holding Company	855	3	0	0	0	0	0	0	0	0	0
New Mexico Mutual Group	(10)	0	0	(10)	0	0	0	0	0	0	0
Suncoast Holdings Inc	19,708	5,282	1,018	0	8,765	0	0	0	0	522	0
Firstcomp Insurance Co	11,512	11,244	268	0	0	0	0	0	0	0	0
Louisiana Workers Compensation Corp	13,680	3,015	691	9,974	0	0	0	0	0	0	0
Amerisafe Group	13,027	167	6,060	6,800	0	0	0	0	0	0	0
Emc Insurance Companies	36,275	13,546	19,445	2,159	0	569	0	0	13	0	377
Ras Group	4,399	0	3,289	0	0	1,110	0	0	0	0	0
Amfed Grp	1,834	0	1,834	0	0	0	0	0	0	0	0
Employers Ins Grp	503,111	484,166	18,945	0	0	0	0	0	0	0	0
Arch Capital Group	293,757	145,713	111,588	24,518	11,057	1,150	0	0	(256)	0	(2)
Seabright Ins Co	4,957	21	(2)	4,535	0	403	0	0	0	0	0
Society Insurance	160	0	109	51	0	0	0	0	0	0	0
White Mountain Group	1,131,187	801,177	39,822	25,706	0	1,421	25,886	137,106	1,936	748	106,779
Total	33,755,829	10,525,891	9,762,228	3,555,446	2,570,115	2,054,568	1,379,019	1,196,631	733,907	455,898	306,081



Appendix Table C.20: Top 50 Groups In Other Liability Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Offshore	Ce U.K.	BERMUDA	GERMANY	CAYMAN	ISI	SWITZERLA	BARBADOS	IRELAND	FRANCE	JAPAN	CANADA
Ace Ltd	2,965,965	1,124,248	846,944	435,439	109,043	73,419	79,004	98,113	74,060	17,046	18,960	
Zurich Ins Grp	3,352,666	231,476	1,177,644	239,617	700,839	52,420	3,156	814,389	41,690	1,605	140	
American International Group	8,111,646	2,250,209	2,490,983	1,233,523	569,629	403,696	317,065	42,761	145,022	165,707	98,254	
St Paul Travelers Grp	3,110,109	1,085,441	1,043,523	350,294	219,512	22,525	132,064	73,741	75,861	57,340	7,838	
Liberty Mutual Insurance Group	1,959,320	630,867	481,074	153,098	18,207	153,964	11,274	11,032	59,150	4,459	51,135	
American Financial Ins Grp	289,090	77,187	41,608	77,784	36,921	990	0	7	471	24,237	368	
Hartford Fire & Casualty Group	1,832,262	1,002,160	398,182	213,834	91,501	49,531	63,726	95	91,015	4,817	6,374	
Cna Insurance Group	2,804,910	771,961	564,113	66,441	263,968	892,236	2,150	9,180	128,688	36,570	6,357	
Axis Capital Grp	522,310	211,270	261,268	47,633	0	0	0	82	2,018	0	0	
Nationwide Corp	277,948	97,925	71,428	67,521	0	13,333	0	0	16,735	701	3,013	
Alleghany Grp	444,857	187,928	192,962	33,081	0	0	0	0	30,886	0	0	
Arch Capital Group	293,757	111,588	145,713	24,518	11,057	1,150	0	0	(256)	0	(9)	
Hcc Ins Holdings Grp	821,110	388,495	146,210	163,122	13,693	17,958	36,509	18,377	23,916	3,423	3,686	
Hannover Grp	614,000	313,880	143,809	1,790	18,798	25,639	1,985	17,456	26,418	127	8,377	
X L America	1,645,922	461,366	358,043	199,201	290,443	121,671	1,630	121,354	21,583	15,344	17,015	
Old Republic Grp	459,067	31,929	209,965	134,669	39,322	30,384	1,452	1,615	2,283	4,847	240	
Chubb & Son Inc	1,189,316	589,146	394,410	83,578	8,961	20,638	15,376	19,199	23,020	1,535	22,153	
Fairfax Financial	1,125,162	356,644	221,275	98,582	373	36,747	198,743	77,936	60,273	17,983	3,092	
White Mountain Group	1,131,187	39,822	801,177	25,706	0	1,421	137,106	25,886	1,936	748	(2,822)	
Argonaut Grp	105,442	57,346	34,445	11,019	0	153	223	0	541	443	133	
Rli Insurance Group	94,237	64,570	39,086	11,904	0	415	0	0	647	160	260	
Navigators Group Inc	157,030	67,577	33,631	30,250	0	5,251	0	7,012	854	3,973	0	
Wr Berkley Corp	159,217	34,813	51,323	38,054	2,958	3,157	1,586	7,298	5,339	4,966	61	
Quanta Us Holdings Grp	61,673	46,504	6,819	4,517	0	0	0	0	44	0	0	
Markel Corporation Grp	230,667	114,425	87,018	16,559	0	0	1,930	0	585	994	28	
State Natl Grp	128,580	11,918	33,767	3,209	17,013	3,982	27,703	30,070	0	0	918	
American Safety Holding Grp	70,883	37,499	29,063	2,943	0	1,321	0	0	34	0	23	
Allianz Insurance Group	1,144,340	167,095	79,630	432,671	27,124	(5,001)	1,541	12,360	296,742	18,437	89,594	
First Mercury Financial Grp	97	26	0	71	0	0	0	0	0	0	0	
Ilg Companies	3,750	(73)	0	0	0	0	0	0	0	0	0	
James River Grp Inc	69,819	24,783	13,265	2,267	0	0	0	29,504	0	0	0	
Ohio Casualty Grp	20,712	4,578	10,319	5,815	0	0	0	0	0	0	0	
Cincinnati FncI Cp	36,766	17,311	5,122	(38)	0	10,747	0	0	3,624	0	0	
Royal & Sun Alliance Usa	1,117,739	344,975	236,709	137,792	1,095	24,422	397,385	4,870	11,743	29,408	39	
Ajk Holdings	43,133	30,109	6,868	0	6,146	0	0	10	0	0	0	
United National Grp	99,028	3,580	18,582	1,636	0	36,133	0	0	0	0	0	
Philadelphia Consolidated Holding Gr	74,748	15,644	46,302	5,432	0	0	0	0	6,963	0	0	
Bcs Ins Grp	41,770	24,861	2,421	2,716	0	10,365	0	550	0	0	(7)	
Berkshire Hathaway	918,892	340,819	240,763	31,852	0	150,213	19,606	10,856	8,205	85,085	3,524	
Ge Global Insurance Holding Company	855	0	3	0	0	0	0	0	0	0	0	
Hbw Holdings Grp												
Western World Grp	186,070	1,661	0	2,037	0	182,372	0	0	0	0	0	
Protective Ins Grp	33,675	3,664	5,769	23,300	942	0	0	0	0	0	0	
Maxum Specialty Ins Grp												
United Educators Ins Rrg Inc	50,398	0	49,425	973	0	0	0	0	0	0	0	
Utica National Ins Grp	24,557	12,407	1,973	8,280	0	1,626	0	0	132	30	0	
Progressive Grp	42,515	0	41,487	55	0	0	0	0	18	0	955	
Auto Owners Grp	3,927	4,367	(374)	(66)	0	0	0	0	0	0	0	
Allstate Insurance Group	800,335	383,337	150,393	30,606	0	62,052	0	34	15,227	50,311	6,849	
Erie Ins Grp	6,241	3,487	244	2,286	0	0	0	0	0	0	218	
Total	38,677,700	11,780,825	11,214,384	4,455,571	2,447,545	2,404,930	1,451,214	1,433,787	1,175,467	550,296	346,766	

Appendix Table C.21: Top 50 Groups In Private Passenger Auto Liability Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Offshore Ce	BERMUDA	U.K.	GERMANY	IRELAND	BARBADOS	CAYMAN IS	SWITZERLA	FRANCE	JAPAN	SWEDEN
Old American Cty Mutual Fire Ins Co	25,648	3,596	0	115	13,665	0	0	0	8,272	0	0
State Farm Il	147,183	101,720	10,696	26,956	0	0	0	0	0	0	0
Gmac Insurance Holding	301,615	25,592	21,457	36	0	118,628	0	0	0	18	0
Home State Ins Grp	5,764	568	5,036	55	0	0	0	72	33	0	0
Nationwide Corp	277,948	71,428	97,925	67,521	0	0	0	13,333	16,735	701	3,383
Automobile Club Mi	(593)	(218)	(368)	0	0	0	0	0	(7)	0	0
Allstate Insurance Group	800,335	150,393	383,337	30,606	34	0	0	62,052	15,227	50,311	1,274
State Natl Grp	128,580	33,767	11,918	3,209	30,070	27,703	17,013	3,982	0	0	0
Sentry Insurance Group	25,142	11,535	6,817	3,611	0	0	1,798	55	97	0	690
Progressive Grp	42,515	41,487	0	55	0	0	0	0	18	0	0
Titus Group	0	0	0	0	0	0	0	0	0	0	0
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	11,032	11,274	18,207	153,964	59,150	4,459	134,059
The Hanover Ins Grp	213,921	77,804	106,707	14,066	27	0	0	571	11,834	0	2,925
Auto Owners Grp	3,927	(374)	4,367	(66)	0	0	0	0	0	0	0
White Mountain Group	1,131,187	801,177	39,822	25,706	25,886	137,106	0	1,421	1,936	748	106,779
South Carolina Farm Bureau Mutual	480	480	0	0	0	0	0	0	0	0	0
Commerce Grp Inc	0	0	0	0	0	0	0	0	0	0	0
Usagencies Grp	1,895	0	1,895	0	0	0	0	0	0	0	0
American Independent Ins Grp	1,037	1,037	0	0	0	0	0	0	0	0	0
Plymouth Rock Ins Grp	4,532	66	(4)	0	0	0	0	0	4,470	0	0
United Automobile Ins Group	9,679	5,295	0	0	4,384	0	0	0	0	0	0
California Cas Mgmt	435	421	14	0	0	0	0	0	0	0	0
Hannover Grp	614,000	143,809	313,880	1,790	17,456	1,985	18,798	25,639	26,418	127	464
Berkshire Hathaway	918,892	240,763	340,819	31,852	10,856	19,606	0	150,213	8,205	85,085	8,593
Republic Companies Grp	38,491	14,020	16,498	576	0	0	0	7,397	0	0	0
Michigan Farm Bureau	709	0	595	0	0	0	0	114	0	0	0
Safety Group (The)	0	0	0	0	0	0	0	0	0	0	0
United Services Automobile Asn Grp	176,734	70,802	85,184	9,693	0	0	1,695	0	8,959	0	401
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	73,741	132,064	219,512	22,525	75,861	57,340	1,428
Royal & Sun Alliance Usa	1,117,739	236,709	344,975	137,792	4,870	397,385	1,095	24,422	11,743	29,408	(37)
Nc Farm Bureau Insurance Grp	42,448	0	0	0	0	0	0	0	42,448	0	0
American Financial Ins Grp	289,090	41,608	77,187	77,784	7	0	36,921	990	471	24,237	5
Direct General Group	5,324	385	914	2	1	0	0	0	4,018	0	0
Metropolitan Group	63,228	29,853	30,726	187	27	0	0	89	477	561	549
Vesta Ins Grp	49,509	12,820	11,863	3,654	16,650	0	0	93	3,092	1,091	1
Benchmark Insurance Co	51,558	26,856	5,868	2,360	0	0	50	0	0	0	0
Atlantic Companies	32,601	4,614	13,428	8,309	0	0	0	4,443	388	196	0
American Century Casualty Co	0	0	0	0	0	0	0	0	0	0	0
Young America Insurance Company	0	0	0	0	0	0	0	0	0	0	0
Assurant Inc Grp	362,852	121,079	15,928	0	0	6,033	1,580	0	40	1,732	0
Arbella Ins Grp	(196)	(125)	(71)	0	0	0	0	0	0	0	0
Assuranceamerica Ins Co	0	0	0	0	0	0	0	0	0	0	0
Fairfax Financial	1,125,162	221,275	356,644	98,582	77,936	198,743	373	36,747	60,273	17,983	2,195
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	814,389	3,156	700,839	52,420	41,690	1,605	4,335
Amica Mutual Grp	(46)	(114)	(93)	171	0	0	0	0	(6)	0	(4)
Anchor General Ins Co	0	0	0	0	0	0	0	0	0	0	0
Louisiana Farm Bureau Mutual Ins Co	19,271	7,112	11,586	0	0	0	0	0	573	0	0
Seibels Bruce Grp	45	25	20	0	0	0	0	0	0	0	0
New Skylands Grp	0	0	0	0	0	0	0	0	0	0	0
Countrywide Insurance Co	14,914	1,425	13,489	0	0	0	0	0	0	0	0
Total	16,465,650	5,200,931	4,276,843	1,287,631	1,101,031	1,053,683	1,017,881	560,542	402,415	275,602	267,040

Appendix Table C.22: Top 50 Groups In Commercial Auto Liability Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Offshore Ce	BERMUDA	U.K.	GERMANY	CAYMAN IS	SWITZERLA	IRELAND	FRANCE	BARBADOS	JAPAN	SWEDEN
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	403,696	42,761	145,022	317,065	165,707	24,846
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	22,525	73,741	75,861	132,064	57,340	1,428
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	52,420	814,389	41,690	3,156	1,605	4,335
Hannover Grp	614,000	143,809	313,880	1,790	18,798	25,639	17,456	26,418	1,985	127	464
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	153,964	11,032	59,150	11,274	4,459	134,059
Ace Ltd	2,965,965	846,944	1,124,248	435,439	109,043	73,419	98,113	74,060	79,004	17,046	4,971
Lancer Ins Grp	113,006	112,970	0	0	0	0	0	0	0	0	0
Progressive Grp	42,515	41,487	0	55	0	0	0	18	0	0	0
Home State Ins Grp	5,764	568	5,036	55	0	72	0	33	0	0	0
Republic Companies Grp	38,491	14,020	16,498	576	0	7,397	0	0	0	0	0
Cna Insurance Group	2,804,910	564,113	771,961	66,441	263,968	892,236	9,180	128,688	2,150	36,570	3,781
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	990	7	471	0	24,237	5
Old Republic Grp	459,067	209,965	31,929	134,669	39,322	30,384	1,615	2,283	1,452	4,847	195
Iat Reins Co Grp	41,165	8,041	18,139	12,185	2	2,692	0	40	0	0	0
Allianz Insurance Group	1,144,340	79,630	167,095	432,671	27,124	(5,001)	12,360	296,742	1,541	18,437	2,014
State Natl Grp	128,580	33,767	11,918	3,209	17,013	3,982	30,070	0	27,703	0	0
Aequicap Ins Co	1,202	1,130	72	0	0	0	0	0	0	0	0
Munich American Holding Corp	563,375	229,916	20,717	52,918	31,508	(6,096)	19,747	6,056	5,470	9,420	(763)
Hereford Insurance Co	724	0	724	0	0	0	0	0	0	0	0
Daimler Chrysler Grp	10,197	930	6,661	2,606	0	0	0	0	0	0	0
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	49,531	95	91,015	63,726	4,817	6,118
Nationwide Corp	277,948	71,428	97,925	67,521	0	13,333	0	16,735	0	701	3,383
Sentry Insurance Group	25,142	11,535	6,817	3,611	1,798	55	0	97	0	0	690
White Mountain Group	1,131,187	801,177	39,822	25,706	0	1,421	25,886	1,936	137,106	748	106,779
Rli Insurance Group	94,237	39,086	64,570	11,904	0	415	0	647	0	160	260
Arbella Ins Grp	(196)	(125)	(71)	0	0	0	0	0	0	0	0
The Hanover Ins Grp	213,921	77,804	106,707	14,066	0	571	27	11,834	0	0	2,925
Titus Group											
Arch Capital Group	293,757	145,713	111,588	24,518	11,057	1,150	0	(256)	0	0	(2)
Old American Cty Mutual Fire Ins Co	25,648	3,596	0	115	0	0	13,665	8,272	0	0	0
Canal Grp	8,590	44	1,825	159	0	0	0	211	0	0	0
Ooida Risk Retention Group Inc	35,357	0	35,357	0	0	0	0	0	0	0	0
Argonaut Grp	105,442	34,445	57,346	11,019	0	153	0	541	223	443	89
Wr Berkley Corp	159,217	51,323	34,813	38,054	2,958	3,157	7,298	5,339	1,586	4,966	142
Plymouth Rock Ins Grp	4,532	66	(4)	0	0	0	0	4,470	0	0	0
Kingsway Grp	25,319	3,585	12,262	5,832	1,116	2,301	0	137	0	0	0
Harleysville Grp	5,157	379	2,533	2,230	0	0	0	15	0	0	0
Strickland Ins Grp											
Commerce Grp Inc											
X L America	1,645,922	358,043	461,366	199,201	290,443	121,671	121,354	21,583	1,630	15,344	7,443
Meadowbrook Ins Grp	49,296	13,976	32,860	7	0	27	0	3	1,395	0	0
Nc Farm Bureau Insurance Grp	42,448	0	0	0	0	0	0	42,448	0	0	0
Topa Equities Limited	11,846	239	500	11,023	0	0	0	0	0	0	0
Auto Owners Grp	3,927	(374)	4,367	(66)	0	0	0	0	0	0	0
State Farm II	147,183	101,720	10,696	26,956	0	0	0	0	0	0	0
Safety Group (The)	0	0	0	0	0	0	0	0	0	0	0
Credit Suisse Group	10,869	2,961	1,579	6,323	0	0	0	0	0	0	0
Rhine Re Grp											
Aon Corporation	311,204	165,613	57,828	423	10,102	0	6,810	346	370	0	1
Fairfax Financial	1,125,162	221,275	356,644	98,582	373	36,747	77,936	60,273	198,743	17,983	2,195
Total	33,341,509	10,023,813	9,263,548	3,957,948	2,461,234	1,888,851	1,383,542	1,122,178	987,643	384,957	305,358

Appendix Table C.23: Top 50 Groups In Auto Physical Damage Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	CAYMAN ISL	BARBADOS	IRELAND	FRANCE	SWITZERLA	JAPAN	SWEDEN
Old American Cty Mutual Fire Ins Co	25,648	3,596	0	115	0	0	13,665	8,272	0	0	0
Home State Ins Grp	5,764	568	5,036	55	0	0	0	33	72	0	0
Titus Group											
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	569,629	317,065	42,761	145,022	403,696	165,707	24,846
Zurich Ins Grp	3,352,666	1,177,644	231,476	239,617	700,839	3,156	814,389	41,690	52,420	1,605	4,335
Hannover Grp	614,000	143,809	313,880	1,790	18,798	1,985	17,456	26,418	25,639	127	464
Republic Companies Grp	38,491	14,020	16,498	576	0	0	0	0	7,397	0	0
Assurant Inc Grp	362,852	121,079	15,928	0	1,580	6,033	0	40	0	1,732	0
State Natl Grp	128,580	33,767	11,918	3,209	17,013	27,703	30,070	0	3,982	0	0
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	18,207	11,274	11,032	59,150	153,964	4,459	134,059
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	219,512	132,064	73,741	75,861	22,525	57,340	1,428
South Carolina Farm Bureau Mutual	480	480	0	0	0	0	0	0	0	0	0
American Financial Ins Grp	289,090	41,608	77,187	77,784	36,921	0	7	471	990	24,237	5
California Cas Mgmt	435	421	14	0	0	0	0	0	0	0	0
Plymouth Rock Ins Grp	4,532	66	(4)	0	0	0	0	4,470	0	0	0
Protective Life Insurance Group	132,470	11,361	12	0	906	95,404	0	0	0	0	0
Nationwide Corp	277,948	71,428	97,925	67,521	0	0	0	16,735	13,333	701	3,383
Usagencies Grp	1,895	0	1,895	0	0	0	0	0	0	0	0
White Mountain Group	1,131,187	801,177	39,822	25,706	0	137,106	25,886	1,936	1,421	748	106,779
Munich American Holding Corp	563,375	229,916	20,717	52,918	31,508	5,470	19,747	6,056	(6,096)	9,420	(763)
Commerce Grp Inc											
Atlantic Companies	32,601	4,614	13,428	8,309	0	0	0	388	4,443	196	0
Sentry Insurance Group	25,142	11,535	6,817	3,611	1,798	0	0	97	55	0	690
Gmac Insurance Holding	301,615	25,592	21,457	36	0	118,628	0	0	0	18	0
American Modern Ins Grp	73,489	21,223	31,072	1,457	0	0	0	1	1,898	0	382
The Hanover Ins Grp	213,921	77,804	106,707	14,066	0	0	27	11,834	571	0	2,925
Arbella Ins Grp	(196)	(125)	(71)	0	0	0	0	0	0	0	0
Safety Group (The)	0	0	0	0	0	0	0	0	0	0	0
Lancer Ins Grp	113,006	112,970	0	0	0	0	0	0	0	0	0
Life Of The South Corp	9,390	0	0	0	0	8,535	0	0	0	0	0
Anchor General Ins Co											
Allianz Insurance Group	1,144,340	79,630	167,095	432,671	27,124	1,541	12,360	296,742	(5,001)	18,437	2,014
Direct General Group	5,324	385	914	2	0	0	1	4,018	0	0	0
Metropolitan Group	63,228	29,853	30,726	187	0	0	27	477	89	561	549
United National Grp	99,028	18,582	3,580	1,636	0	0	0	0	36,133	0	0
Louisiana Farm Bureau Mutual Ins Co	19,271	7,112	11,586	0	0	0	0	573	0	0	0
Daimler Chrysler Grp	10,197	930	6,661	2,606	0	0	0	0	0	0	0
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	91,501	63,726	95	91,015	49,531	4,817	6,118
Fairfax Financial	1,125,162	221,275	356,644	98,582	373	198,743	77,936	60,273	36,747	17,983	2,195
United Automobile Ins Group	9,679	5,295	0	0	0	0	4,384	0	0	0	0
American Independent Ins Grp	1,037	1,037	0	0	0	0	0	0	0	0	0
American Family Ins Grp	1,645	711	803	107	0	0	0	20	1	0	1
Assuranceamerica Ins Co											
Balboa Ins Grp	86,626	63,676	15,765	(32)	6,805	0	(38)	0	0	0	0
New Skylands Grp											
Sterling Casualty Insurance Co	11,743	0	0	11,743	0	0	0	0	0	0	0
Royal & Sun Alliance Usa	1,117,739	236,709	344,975	137,792	1,095	397,385	4,870	11,743	24,422	29,408	(37)
Virginia Farm Bur											
First Guard Insurance Co											
Infinity Prop & Cas Ins Grp	113	1	112	0	0	0	0	0	0	0	0
Total	26,406,850	7,983,511	6,919,252	3,132,813	1,743,609	1,525,818	1,148,416	863,335	828,232	337,496	289,373

Appendix Table C.24: Top 50 Groups In Non-Proportional Reinsurance In Receivables Owed By Unaffiliated Alien Reinsurers

Cedant Group	Total	BERMUDA	U.K.	GERMANY	SWITZERLA	CAYMAN IS	BARBADOS	IRELAND	FRANCE	JAPAN	SWEDEN
Ge Global Insurance Holding Company	855	3	0	0	0	0	0	0	0	0	0
American Agricultural Insurance Co	186,266	44,785	2,997	9,434	118,754	0	0	10,493	211	0	(408)
White Mountain Group	1,131,187	801,177	39,822	25,706	1,421	0	137,106	25,886	1,936	748	106,779
American International Group	8,111,646	2,490,983	2,250,209	1,233,523	403,696	569,629	317,065	42,761	145,022	165,707	24,846
Fairfax Financial	1,125,162	221,275	356,644	98,582	36,747	373	198,743	77,936	60,273	17,983	2,195
Southern Farm Bureau Casualty	106,166	44,490	58,636	0	0	0	0	0	3,040	0	0
Wr Berkley Corp	159,217	51,323	34,813	38,054	3,157	2,958	1,586	7,298	5,339	4,966	142
X L America	1,645,922	358,043	461,366	199,201	121,671	290,443	1,630	121,354	21,583	15,344	7,443
Swiss Reinsurance Group	2,141,458	484,852	286,746	284,035	83,290	186,292	640,727	51,792	39,410	58,785	8,766
Cna Insurance Group	2,804,910	564,113	771,961	66,441	892,236	263,968	2,150	9,180	128,688	36,570	3,781
Munich American Holding Corp	563,375	229,916	20,717	52,918	(6,096)	31,508	5,470	19,747	6,056	9,420	(763)
Qbe Insurance Grp Ltd	145,128	35,894	81,053	263	(1)	0	88	3	25,087	223	(5)
Federated Mutual	19,671	7,142	11,016	627	442	0	0	0	444	0	0
Chubb & Son Inc	1,189,316	394,410	589,146	83,578	20,638	8,961	15,376	19,199	23,020	1,535	1,778
Nlc Mutual Insurance Co	20,602	14,785	101	4,810	0	0	0	0	0	0	0
Grinnell Mutual	5,045	688	730	1,554	141	0	0	1,822	109	0	1
Liberty Mutual Insurance Group	1,959,320	481,074	630,867	153,098	153,964	18,207	11,274	11,032	59,150	4,459	134,059
Platinum Underwriters Reins Co.	28,310	17,533	5,925	4,122	730	0	0	0	0	0	0
St Paul Travelers Grp	3,110,109	1,043,523	1,085,441	350,294	22,525	219,512	132,064	73,741	75,861	57,340	1,428
Ace Ltd	2,965,965	846,944	1,124,248	435,439	73,419	109,043	79,004	98,113	74,060	17,046	4,971
Everest Reinsurance Holdings Inc	394,084	58,362	64,948	6,652	1	0	60,950	177,640	5,797	6,901	(5)
Penn Mfr Asn Ins	306,397	2,649	37,436	29,617	957	167,144	7	66,987	177	817	0
Berkshire Hathaway	918,892	240,763	340,819	31,852	150,213	0	19,606	10,856	8,205	85,085	8,593
Emc Insurance Companies	36,275	13,546	19,445	2,159	569	0	0	0	13	0	377
Rockford Mutual Insurance Co											
Axis Capital Grp	522,310	261,268	211,270	47,633	0	0	0	82	2,018	0	39
Hingham Mutual Group	53	23	20	2	0	0	0	0	6	0	0
Hartford Fire & Casualty Group	1,832,262	398,182	1,002,160	213,834	49,531	91,501	63,726	95	91,015	4,817	6,118
Wisconsin Re Grp	219	8	211	0	0	0	0	0	0	0	0
Farmers Mtl Hail Ins Co of Ia Grp											
Endurance Grp	2,872	1,886	937	49	0	0	0	0	0	0	0
Ny Marine & General Grp	176,968	27,787	84,147	22,719	6,155	0	1	417	2,759	28,769	442
Rhine Re Grp											
Hospital Services Group	9,601	948	6,258	0	0	0	0	0	2,395	0	0
Gmac Insurance Holding	301,615	25,592	21,457	36	0	0	118,628	0	0	18	0
Government Entities Mut Inc	829	829	0	0	0	0	0	0	0	0	0
Country Ins & Financial Services Grp	29,847	558	25,258	3,392	(106)	0	0	0	602	0	137
Converium Holding Grp	200,701	1,814	1,589	18,780	178,518	0	0	0	0	0	0
Toa-Re Insurance Co of America	6,183	2,380	3,585	14	1	0	0	0	0	240	4
Pxre Reinsurance Company	22,842	557	550	3	3,000	0	0	16,154	0	0	149
Mapfre Ins Grp	19,226	11,848	1,181	4,502	1,342	5	0	102	0	1	0
British American Insurance Co											
Axa Insurance Group	90,798	36,962	43,128	3,391	255	0	28	60	3,662	395	1,030
New Jersey Manufacturers	968	(9)	(36)	1,013	0	0	0	0	0	0	0
Michigan Farm Bureau	709	0	595	0	114	0	0	0	0	0	0
Icw Group	19,649	5,070	12,467	114	16	0	0	0	2,420	0	240
Arch Capital Group	293,757	145,713	111,588	24,518	1,150	11,057	0	0	(256)	0	(2)
Lumbermans Mut Cas Group	510,033	356,495	60,607	12,970	3,866	58,300	555	2,210	433	2,645	(173)
Old Republic Grp	459,067	209,965	31,929	134,669	30,384	39,322	1,452	1,615	2,283	4,847	195
Farmers Mutual of Tennessee	0	0	0	0	0	0	0	0	0	0	0
Total	33,575,787	9,936,149	9,893,987	3,599,598	2,352,700	2,068,223	1,807,236	846,575	790,818	524,661	312,157

## Appendix D.1: Companies in SNL Bermuda Stock Price Index

<b>Ticker</b>	<b>Company</b>	<b>Exchange</b>	<b>City</b>	<b>Industry</b>	<b>Weight (%)</b>
ACE	ACE Ltd.	NYSE	Hamilton	Insurance Underwriter	24.4240
AWH	Allied World Assurance Co.	NYSE	Hamilton	Insurance Underwriter	3.4135
ASI	American Safety Ins Hldgs Ltd	NYSE	Hamilton	Insurance Underwriter	0.2486
ACGL	Arch Capital Group Ltd.	NASDAQ	Hamilton	Insurance Underwriter	6.3805
AHL	Aspen Insurance Holdings Ltd.	NYSE	Hamilton	Insurance Underwriter	3.3084
AGO	Assured Guaranty Ltd.	NYSE	Hamilton	Insurance Underwriter	2.5452
AXS	AXIS Capital Holdings Ltd.	NYSE	Pembroke	Insurance Underwriter	6.6685
CRMH	CRM Holdings Ltd.	NASDAQ	Hamilton	Insurance Underwriter	0.1604
ENH	Endurance Specialty Holdings	NYSE	Pembroke	Insurance Underwriter	3.2268
RE	Everest Re Group Ltd.	NYSE	Hamilton	Insurance Underwriter	8.3439
IPCR	IPC Holdings Ltd.	NASDAQ	Pembroke	Insurance Underwriter	2.5679
MXRE	Max Re Capital Ltd.	NASDAQ	Hamilton	Insurance Underwriter	1.8809
MRH	Montpelier Re Holdings Ltd	NYSE	Pembroke	Insurance Underwriter	2.8017
PRE	PartnerRe Ltd.	NYSE	Pembroke	Insurance Underwriter	5.2393
PTP	Platinum Underwriters Hldgs	NYSE	Pembroke	Insurance Underwriter	2.3774
PRS	Primus Guaranty Ltd.	NYSE	Hamilton	Insurance Underwriter	0.6755
PXT	PXRE Group Ltd.	NYSE	Pembroke	Insurance Underwriter	0.3895
QNTA	Quanta Capital Holdings Ltd.	NASDAQ	Hamilton	Insurance Underwriter	0.2129
RAMR	RAM Holdings Ltd.	NASDAQ	Hamilton	Insurance Underwriter	0.4685
RNR	RenaissanceRe Holdings Ltd.	NYSE	Pembroke	Insurance Underwriter	5.5963
SCT	Scottish Re Group Limited	NYSE	Hamilton	Insurance Underwriter	0.4464
SCA	Security Capital Assurance Ltd	NYSE	Hamilton	Insurance Underwriter	2.1324
XL	XL Capital Ltd	NYSE	Hamilton	Insurance Underwriter	16.4916

## Appendix D.2: Companies in SNL Reinsurance Stock Price Index

Ticker	Company	Exchange	City	ST	Industry	Weight (%)
ACE	ACE Ltd.	NYSE	Hamilton		Insurance l	4.9147
ALFA	Alfa Corp.	NASDAQ	Montgomery	AL	Insurance l	0.3982
AMIC	American Independence Corp.	NASDAQ	New York	NY	Insurance l	0.0224
AIG	American International Group	NYSE	New York	NY	Insurance l	47.4261
ANNRF	Annuity & Life Re	OTC BB	Hamilton		Insurance l	0.0026
AHL	Aspen Insurance Holdings Ltd.	NYSE	Hamilton		Insurance l	0.6657
BRK.A	Berkshire Hathaway Inc.	NYSE	Omaha	NE	Insurance l	31.2270
CRMH	CRM Holdings Ltd.	NASDAQ	Hamilton		Insurance l	0.0323
EMCI	EMC Insurance Group Inc.	NASDAQ	Des Moines	IA	Insurance l	0.1272
ENH	Endurance Specialty Holdings	NYSE	Pembroke		Insurance l	0.6493
ESREF	ESG Re Ltd.	Pink Sheet	Hamilton		Insurance l	0.0009
RE	Everest Re Group Ltd.	NYSE	Hamilton		Insurance l	1.6790
HALL	Hallmark Financial Services	NASDAQ	Fort Worth	TX	Insurance l	0.0519
HTVL	Hartville Group Inc.	OTC BB	Canton	OH	Insurance l	0.0021
IPCR	IPC Holdings Ltd.	NASDAQ	Pembroke		Insurance l	0.5167
MXRE	Max Re Capital Ltd.	NASDAQ	Hamilton		Insurance l	0.3785
MRH	Montpelier Re Holdings Ltd	NYSE	Pembroke		Insurance l	0.5638
ORH	Odyssey Re Holdings Corp	NYSE	Stamford	CT	Insurance l	0.6311
PRE	PartnerRe Ltd.	NYSE	Pembroke		Insurance l	1.0543
PTP	Platinum Underwriters Hldgs	NYSE	Pembroke		Insurance l	0.4784
PXT	PXRE Group Ltd.	NYSE	Pembroke		Insurance l	0.0784
RAMR	RAM Holdings Ltd.	NASDAQ	Hamilton		Insurance l	0.0943
RGA	Reinsurance Group of America	NYSE	Chesterfield	MO	Insurance l	0.8846
RNR	RenaissanceRe Holdings Ltd.	NYSE	Pembroke		Insurance l	1.1261
SCT	Scottish Re Group Limited	NYSE	Hamilton		Insurance l	0.0898
TRH	Transatlantic Holdings Inc.	NYSE	New York	NY	Insurance l	1.0622
WSC	Wesco Financial Corp.	AMEX	Pasadena	CA	Insurance l	0.8610
WTM	White Mountains Insurance	NYSE	Hanover	NH	Insurance l	1.6630
XL	XL Capital Ltd	NYSE	Hamilton		Insurance l	3.3185

### Appendix D.3: SNL Property-Casualty (P&C) Insurance Stock Price Index, p. 1

Ticker	Company	Exchange	City	ST	Industry	Weight (%)
TCHC	21st Century Holding Co.	NASDAQ	Lauderdale Lakes	FL	Insurance l	0.0477
TW	21st Century Insurance Group	NYSE	Woodland Hills	CA	Insurance l	0.3678
ACE	ACE Ltd.	NYSE	Hamilton		Insurance l	4.6896
AFFM	Affirmative Insurance Holdings	NASDAQ	Addison	TX	Insurance l	0.0608
ALFA	Alfa Corp.	NASDAQ	Montgomery	AL	Insurance l	0.3800
Y	Alleghany Corp.	NYSE	New York	NY	Insurance l	0.6906
AWH	Allied World Assurance Co.	NYSE	Hamilton		Insurance l	0.6554
ALL	Allstate Corp.	NYSE	Northbrook	IL	Insurance l	9.8689
AMCP	AmCOMP Inc.	NASDAQ	North Palm Beach	FL	Insurance l	0.0420
AFG	American Financial Group Inc.	NYSE	Cincinnati	OH	Insurance l	1.0426
ACAP	American Physicians Capital	NASDAQ	East Lansing	MI	Insurance l	0.1144
ASI	American Safety Ins Hldgs Ltd	NYSE	Hamilton		Insurance l	0.0477
AMSF	AMERISAFE Inc.	NASDAQ	Deridder	LA	Insurance l	0.0636
AFSI	AmTrust Financial Services Inc	NASDAQ	New York	NY	Insurance l	0.1246
ACGL	Arch Capital Group Ltd.	NASDAQ	Hamilton		Insurance l	1.2251
AGII	Argonaut Group Inc.	NASDAQ	San Antonio	TX	Insurance l	0.2682
AHL	Aspen Insurance Holdings Ltd.	NYSE	Hamilton		Insurance l	0.6353
ASAM	AssuranceAmerica Corporation	OTC BB	Atlanta	GA	Insurance l	0.0111
AXS	AXIS Capital Holdings Ltd.	NYSE	Pembroke		Insurance l	1.2804
BWINB	Baldwin & Lyons Inc.	NASDAQ	Indianapolis	IN	Insurance l	0.0802
BCIS	Bancinsurance Corp.	Pink Sheet	Columbus	OH	Insurance l	0.0074
BRK.A	Berkshire Hathaway Inc.	NYSE	Omaha	NE	Insurance l	29.7972
BRW	Bristol West Holdings Inc.	NYSE	Davie	FL	Insurance l	0.1166
CB	Chubb Corp.	NYSE	Warren	NJ	Insurance l	5.3404
CINF	Cincinnati Financial Corp.	NASDAQ	Fairfield	OH	Insurance l	1.9625
SUR	CNA Surety Corp.	NYSE	Chicago	IL	Insurance l	0.2234
CGI	Commerce Group Inc.	NYSE	Webster	MA	Insurance l	0.4993
CRMH	CRM Holdings Ltd.	NASDAQ	Hamilton DO HM		Insurance l	0.0308
DR	Darwin Professional Undrwrtr	NYSE	Farmington	CT	Insurance l	0.0948
DRCT	Direct General Corp.	NASDAQ	Nashville	TN	Insurance l	0.1035
DGICB	Donegal Group Inc.	NASDAQ	Marietta	PA	Insurance l	0.0242
EIHI	Eastern Insurance Holdings Inc	NASDAQ	Lancaster	PA	Insurance l	0.0411
EMCI	EMC Insurance Group Inc.	NASDAQ	Des Moines	IA	Insurance l	0.1214
ENH	Endurance Specialty Holdings	NYSE	Pembroke		Insurance l	0.6196
ESGR	Enstar Group Inc.	NASDAQ	Montgomery	AL	Insurance l	0.1251
ERIE	Erie Indemnity Co.	NASDAQ	Erie	PA	Insurance l	0.8117
RE	Everest Re Group Ltd.	NYSE	Hamilton		Insurance l	1.6021
FFH	Fairfax Financial Holdings Ltd	NYSE	Toronto		Insurance l	0.8363
FAC	First Acceptance Corp.	NYSE	Nashville	TN	Insurance l	0.1249
FMR	First Mercury Financial Corp.	NYSE	Southfield	MI	Insurance l	0.0899
FPIC	FPIC Insurance Group Inc.	NASDAQ	Jacksonville	FL	Insurance l	0.1006
FMMH	Fremont Michigan InsuraCorp	OTC BB	Fremont	MI	Insurance l	0.0098
GAN	GAINSCO INC.	AMEX	Dallas	TX	Insurance l	0.0379
HALL	Hallmark Financial Services	NASDAQ	Fort Worth	TX	Insurance l	0.0496
THG	Hanover Insurance Group Inc.	NYSE	Worcester	MA	Insurance l	0.6137
HGIC	Harleysville Group Inc.	NASDAQ	Harleysville	PA	Insurance l	0.2818
HTVL	Hartville Group Inc.	OTC BB	Canton	OH	Insurance l	0.0020
HCC	HCC Insurance Holdings Inc.	NYSE	Houston	TX	Insurance l	0.8286
HMN	Horace Mann Educators Corp.	NYSE	Springfield	IL	Insurance l	0.2142
IPCC	Infinity Property and Casualty	NASDAQ	Birmingham	AL	Insurance l	0.2282
IPCR	IPC Holdings Ltd.	NASDAQ	Pembroke		Insurance l	0.4931
JRVR	James River Group Inc.	NASDAQ	Chapel Hill	NC	Insurance l	0.1250
KFS	Kingsway Financial Services	NYSE	Mississauga		Insurance l	0.3063
MKL	Markel Corp.	NYSE	Glen Allen	VA	Insurance l	1.0970



### Appendix D.3: SNL Property-Casualty (P&C) Insurance Stock Price Index, p. 2

Ticker	Company	Exchange	City	ST	Industry	Neight (%)
MIG	Meadowbrook Insurance Group	NYSE	Southfield	MI	Insurance l	0.0726
MIGP	Mercer Insurance Group Inc.	NASDAQ	Pennington	NJ	Insurance l	0.0338
MGP	Merchants Group Inc.	AMEX	Buffalo	NY	Insurance l	0.0171
MCY	Mercury General Corp.	NYSE	Los Angeles	CA	Insurance l	0.7269
MLAN	Midland Co.	NASDAQ	Amelia	OH	Insurance l	0.2188
MRH	Montpelier Re Holdings Ltd	NYSE	Pembroke		Insurance l	0.5379
NAHC	National Atlantic Holdings	NASDAQ	Freehold	NJ	Insurance l	0.0373
NATL	National Interstate Corp.	NASDAQ	Richfield	OH	Insurance l	0.1190
NSEC	National Security Group Inc.	NASDAQ	Elba	AL	Insurance l	0.0104
NAVG	Navigators Group Inc.	NASDAQ	New York	NY	Insurance l	0.1923
NPTE	North Pointe Holdings Corp.	NASDAQ	Southfield	MI	Insurance l	0.0237
NYM	NYMAGIC INC.	NYSE	New York	NY	Insurance l	0.0774
ORH	Odyssey Re Holdings Corp	NYSE	Stamford	CT	Insurance l	0.6022
OCAS	Ohio Casualty Corp.	NASDAQ	Fairfield	OH	Insurance l	0.4446
ORI	Old Republic International	NYSE	Chicago	IL	Insurance l	1.3084
OB	OneBeacon Insurance Group Ltd.	NYSE	Boston	MA	Insurance l	0.1356
PRE	PartnerRe Ltd.	NYSE	Pembroke		Insurance l	1.0060
PHLY	Philadelphia Consolidated Hldg	NASDAQ	Bala Cynwyd	PA	Insurance l	0.7798
PTP	Platinum Underwriters Hldgs	NYSE	Pembroke		Insurance l	0.4565
PMACA	PMA Capital Corp.	NASDAQ	Blue Bell	PA	Insurance l	0.0725
PRA	ProAssurance Corp.	NYSE	Birmingham	AL	Insurance l	0.4156
PROS	ProCentury Corp.	NASDAQ	Westerville	OH	Insurance l	0.0588
PFLD	Professionals Direct Inc.	OTC BB	Grand Rapids	MI	Insurance l	0.0021
PGR	Progressive Corp.	NYSE	Mayfield	OH	Insurance l	4.4363
PXT	PXRE Group Ltd.	NYSE	Pembroke		Insurance l	0.0748
QNTA	Quanta Capital Holdings Ltd.	NASDAQ	Hamilton		Insurance l	0.0409
RNR	RenaissanceRe Holdings Ltd.	NYSE	Pembroke		Insurance l	1.0746
RLI	RLI Corp.	NYSE	Peoria	IL	Insurance l	0.3284
RTWI	RTW Inc.	NASDAQ	Bloomington	MN	Insurance l	0.0118
SAF	Safeco Corp.	NYSE	Seattle	WA	Insurance l	1.8072
SAFT	Safety Insurance Group Inc.	NASDAQ	Boston	MA	Insurance l	0.2139
SKP	SCPIE Holdings Inc.	NYSE	Los Angeles	CA	Insurance l	0.0614
SEAB	SeaBright Insurance Hldgs Inc.	NASDAQ	Seattle	WA	Insurance l	0.0833
SIGI	Selective Insurance Group	NASDAQ	Branchville	NJ	Insurance l	0.3920
SUAI	Specialty UnderwritersAlliance	NASDAQ	Chicago	IL	Insurance l	0.0355
STA	St Paul Travelers Cos	NYSE	Saint Paul	MN	Insurance l	8.9331
STFC	State Auto Financial Corp.	NASDAQ	Columbus	OH	Insurance l	0.3492
SGYI	Strategy International	Pink Sheet	Toronto		Insurance l	0.0005
TWGP	Tower Group Inc.	NASDAQ	New York	NY	Insurance l	0.1638
TRH	Transatlantic Holdings Inc.	NYSE	New York	NY	Insurance l	1.0135
UNAM	Unico American Corp.	NASDAQ	Woodland Hills	CA	Insurance l	0.0174
INDM	United America Indemnity Ltd.	NASDAQ	George Town		Insurance l	0.1513
UFCS	United Fire & Casualty Co.	NASDAQ	Cedar Rapids	IA	Insurance l	0.2462
UVIH	Universal Insurance Hldgs Inc.	OTC BB	Fort Lauderdale	FL	Insurance l	0.0266
VTAI	Vesta Insurance Group Inc.	Pink Sheet	Birmingham	AL	Insurance l	0.0000
BER	W.R. Berkley Corp.	NYSE	Greenwich	CT	Insurance l	1.6979
WSC	Wesco Financial Corp.	AMEX	Pasadena	CA	Insurance l	0.8216
WTM	White Mountains Insurance	NYSE	Hanover	NH	Insurance l	1.5869
ZNT	Zenith National Insurance Corp	NYSE	Woodland Hills	CA	Insurance l	0.4265

## Appendix E.1: Efficiency of Bermuda Reinsurers

Year	Country	Company Name	Ultimate Parent	Technical	Pure Technical	Cost	Scale Type	Scale	Allocative
1995	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.6254	1.0000	0.5370	DRS	0.6254	0.8587
1996	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.9417	1.0000	0.7133	DRS	0.9417	0.7575
1997	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.3530	1.0000	0.3053	DRS	0.3530	0.8649
1998	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.7185	1.0000	0.6790	DRS	0.7185	0.9450
1999	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.8225	1.0000	0.8195	DRS	0.8225	0.9964
2000	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.9344	0.9726	0.7214	DRS	0.9607	0.7721
2001	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.9532	1.0000	0.6457	DRS	0.9532	0.6774
2002	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.6329	1.0000	0.2720	DRS	0.6329	0.4298
2003	Bermuda	Centre Solutions (Bermuda)	Zurich Financial	0.6764	1.0000	0.3915	DRS	0.6764	0.5789
1995	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.4307	0.5649	0.3416	IRS	0.7625	0.7930
1996	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.7670	0.8328	0.4385	IRS	0.9211	0.5717
1997	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.5879	0.6297	0.2791	IRS	0.9337	0.4746
1998	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.6049	0.6125	0.4530	DRS	0.9876	0.7488
2000	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.4679	0.4895	0.3286	IRS	0.9559	0.7023
2001	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.4728	0.4852	0.3344	IRS	0.9744	0.7073
2002	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.7155	0.7510	0.2424	DRS	0.9527	0.3387
2003	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.4873	0.4902	0.3505	IRS	0.9941	0.7193
2004	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.5711	0.6734	0.5058	IRS	0.8481	0.8857
2005	Bermuda	Tate & Lyle Reinsurance	Tate & Lyle PLC	0.5407	0.6990	0.4278	IRS	0.7736	0.7913
1995	Bermuda	Scandinavian Reinsurance	White Mountains	0.4085	0.4119	0.3785	IRS	0.9917	0.9267
1996	Bermuda	Scandinavian Reinsurance	White Mountains	0.5774	0.5833	0.3021	DRS	0.9900	0.5231
1997	Bermuda	Scandinavian Reinsurance	White Mountains	0.3385	0.3643	0.2943	DRS	0.9292	0.8693
1998	Bermuda	Scandinavian Reinsurance	White Mountains	0.5527	0.6256	0.3948	DRS	0.8834	0.7143
1999	Bermuda	Scandinavian Reinsurance	White Mountains	0.3234	0.6464	0.2775	DRS	0.5003	0.8579
2000	Bermuda	Scandinavian Reinsurance	White Mountains	0.5694	0.5700	0.2608	IRS	0.9990	0.4581
1995	Bermuda	Global Capital Reinsurance		0.2544	0.4210	0.2439	DRS	0.6042	0.9588
1996	Bermuda	Global Capital Reinsurance		0.2982	0.3015	0.1812	DRS	0.9890	0.6077
1995	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.2527	0.3414	0.2132	DRS	0.7403	0.8436
1996	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.3508	0.3541	0.2415	DRS	0.9907	0.6883
1997	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.2414	0.3230	0.1707	DRS	0.7473	0.7071
1998	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.2925	0.3646	0.2486	DRS	0.8024	0.8497
1999	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.3437	0.3457	0.3376	DRS	0.9940	0.9823
2000	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.3014	0.3016	0.2377	IRS	0.9993	0.7885
2001	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.3695	0.4241	0.3004	DRS	0.8712	0.8130
2002	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.2281	0.4259	0.1915	DRS	0.5355	0.8395
2003	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.3016	0.3694	0.2674	DRS	0.8166	0.8863
2004	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.4537	0.5854	0.3857	DRS	0.7750	0.8501
2005	Bermuda	Renaissance Reinsurance	RenaissanceRe	0.4666	0.6847	0.3869	DRS	0.6815	0.8291
1995	Bermuda	Mid Ocean Reinsurance		0.2765	0.4459	0.2417	DRS	0.6201	0.8745

Year	Country	Company_Name	Ultimate_Parent	Technical	Pure Technical	Cost	Scale Type	Scale	Allocative
1996	Bermuda	Mid Ocean Reinsurance		0.3605	0.3837	0.2682	DRS	0.9396	0.7440
1997	Bermuda	Mid Ocean Reinsurance		0.2324	0.4012	0.1790	DRS	0.5792	0.7701
1995	Bermuda	CAT Ltd.		0.2333	0.3789	0.2083	DRS	0.6156	0.8932
1996	Bermuda	CAT Ltd.		0.3470	0.3501	0.2198	DRS	0.9911	0.6336
1997	Bermuda	CAT Ltd.		0.2950	0.3983	0.1752	DRS	0.7405	0.5939
1995	Bermuda	IPCRe	IPC Holdings	0.2226	0.4412	0.2015	DRS	0.5044	0.9055
1996	Bermuda	IPCRe	IPC Holdings	0.4163	0.4335	0.2059	DRS	0.9603	0.4947
1997	Bermuda	IPCRe	IPC Holdings	0.3538	0.4077	0.1799	DRS	0.8679	0.5084
1998	Bermuda	IPCRe	IPC Holdings	0.2964	0.3716	0.2873	DRS	0.7977	0.9692
1999	Bermuda	IPCRe	IPC Holdings	0.4560	0.4654	0.4018	DRS	0.9798	0.8811
2000	Bermuda	IPCRe	IPC Holdings	0.3991	0.4054	0.2434	DRS	0.9844	0.6099
2001	Bermuda	IPCRe	IPC Holdings	0.3906	0.4202	0.3098	DRS	0.9296	0.7931
2002	Bermuda	IPCRe	IPC Holdings	0.3235	0.4049	0.1753	DRS	0.7988	0.5419
2003	Bermuda	IPCRe	IPC Holdings	0.3222	0.3590	0.2547	DRS	0.8974	0.7906
2004	Bermuda	IPCRe	IPC Holdings	0.3334	0.5417	0.2708	DRS	0.6154	0.8124
2005	Bermuda	IPCRe	IPC Holdings	0.5976	1.0000	0.4649	DRS	0.5976	0.7779
1997	Bermuda	X.L. Global Reinsurance		0.6314	0.9909	0.2785	DRS	0.6372	0.4411
1995	Bermuda	Odyssey Re (Bermuda)	Fairfax Financial	0.4976	0.5728	0.4747	DRS	0.8688	0.9540
1996	Bermuda	Odyssey Re (Bermuda)	Fairfax Financial	0.3428	0.3441	0.2953	DRS	0.9964	0.8613
1997	Bermuda	Odyssey Re (Bermuda)	Fairfax Financial	0.2590	0.2609	0.1995	IRS	0.9929	0.7702
1998	Bermuda	Odyssey Re (Bermuda)	Fairfax Financial	0.4525	0.4868	0.3849	DRS	0.9296	0.8506
1995	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.2075	0.4068	0.1968	DRS	0.5100	0.9487
1996	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.3253	0.3335	0.1706	DRS	0.9755	0.5244
1997	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.5507	0.6155	0.2253	DRS	0.8947	0.4091
1998	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.4158	0.6210	0.3126	DRS	0.6695	0.7519
1999	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.4014	0.4293	0.3590	DRS	0.9350	0.8945
2000	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.2718	0.2876	0.1719	DRS	0.9453	0.6323
2001	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.3939	0.4827	0.2283	DRS	0.8160	0.5797
2002	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.3337	0.4352	0.1173	DRS	0.7668	0.3513
2003	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.4088	0.6576	0.2243	DRS	0.6216	0.5487
2004	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.5444	0.7690	0.3131	DRS	0.7080	0.5751
2005	Bermuda	ACE Tempest Reinsurance	ACE Ltd.	0.8614	1.0000	0.2635	DRS	0.8614	0.3059
1997	Bermuda	Catalina Reinsurance	Catalina Re	0.2367	0.2370	0.1714	IRS	0.9986	0.7241
1998	Bermuda	Catalina Reinsurance	Catalina Re	0.3696	0.4249	0.3385	DRS	0.8698	0.9158
1999	Bermuda	Catalina Reinsurance	Catalina Re	0.6195	1.0000	0.4478	DRS	0.6195	0.7228
2000	Bermuda	Catalina Reinsurance	Catalina Re	0.4314	1.0000	0.3301	DRS	0.4314	0.7651
2001	Bermuda	Catalina Reinsurance	Catalina Re	0.5568	0.6620	0.3147	DRS	0.8411	0.5651
2002	Bermuda	Catalina Reinsurance	Catalina Re	0.3682	0.5648	0.2177	DRS	0.6518	0.5912
1996	Bermuda	Inter-Ocean Holdings		0.6147	0.6163	0.3481	IRS	0.9973	0.5663
1997	Bermuda	Inter-Ocean Holdings		0.7364	1.0000	0.4666	DRS	0.7364	0.6336

<b>Year</b>	<b>Country</b>	<b>Company_Name</b>	<b>Ultimate_Parent</b>	<b>Technical</b>	<b>Pure Technical</b>	<b>Cost</b>	<b>Scale Type</b>	<b>Scale</b>	<b>Allocative</b>
1995	Bermuda	Omnium	Total S.A.	0.4999	0.9529	0.2536	IRS	0.5247	0.5073
1996	Bermuda	Omnium	Total S.A.	0.6225	0.6351	0.2959	IRS	0.9802	0.4753
1997	Bermuda	Omnium	Total S.A.	0.7490	1.0000	0.2619	IRS	0.7490	0.3496
1998	Bermuda	Omnium	Total S.A.	0.6314	0.6617	0.4665	IRS	0.9543	0.7388
1999	Bermuda	Omnium	Total S.A.	0.7569	0.8741	0.5789	DRS	0.8659	0.7649
2000	Bermuda	Omnium	Total S.A.	0.6588	0.6673	0.3950	IRS	0.9872	0.5995
2001	Bermuda	Omnium	Total S.A.	0.6124	0.6146	0.4311	IRS	0.9964	0.7041
2003	Bermuda	Omnium	Total S.A.	0.8724	0.9286	0.4345	DRS	0.9395	0.4980
2004	Bermuda	Omnium	Total S.A.	1.0000	1.0000	0.5157	CRS	1.0000	0.5157
2005	Bermuda	Omnium	Total S.A.	1.0000	1.0000	0.4378	CRS	1.0000	0.4378
1995	Bermuda	Stockton Reinsurance		0.2899	1.0000	0.2775	DRS	0.2899	0.9575
1996	Bermuda	Stockton Reinsurance		0.3604	0.3644	0.2055	DRS	0.9889	0.5702
1997	Bermuda	Stockton Reinsurance		0.7301	1.0000	0.4051	DRS	0.7301	0.5549
1998	Bermuda	Stockton Reinsurance		0.7799	1.0000	0.7720	DRS	0.7799	0.9899
1999	Bermuda	Stockton Reinsurance		1.0000	1.0000	1.0000	CRS	1.0000	1.0000
2000	Bermuda	Stockton Reinsurance		0.3700	0.3983	0.3511	DRS	0.9290	0.9489
2001	Bermuda	Stockton Reinsurance		0.8716	0.9889	0.6444	DRS	0.8814	0.7394
2002	Bermuda	Stockton Reinsurance		0.4819	0.8092	0.3554	DRS	0.5955	0.7375
2003	Bermuda	Stockton Reinsurance		0.9001	1.0000	0.7284	DRS	0.9001	0.8092
1995	Bermuda	Terra Nova (Bermuda)	Markel Corp.	1.0000	1.0000	0.6708	CRS	1.0000	0.6708
1996	Bermuda	Terra Nova (Bermuda)	Markel Corp.	1.0000	1.0000	0.3881	CRS	1.0000	0.3881
1997	Bermuda	Terra Nova (Bermuda)	Markel Corp.	0.6354	0.6356	0.3194	DRS	0.9997	0.5026
1998	Bermuda	Terra Nova (Bermuda)	Markel Corp.	0.8101	0.8304	0.7256	DRS	0.9755	0.8956
1999	Bermuda	Terra Nova (Bermuda)	Markel Corp.	1.0000	1.0000	0.7016	CRS	1.0000	0.7016
2000	Bermuda	Terra Nova (Bermuda)	Markel Corp.	0.5441	0.5559	0.4471	IRS	0.9788	0.8216
2001	Bermuda	Terra Nova (Bermuda)	Markel Corp.	1.0000	1.0000	0.7032	CRS	1.0000	0.7032
1998	Bermuda	XL Re Ltd.	XL Capital Ltd.	0.4114	0.6401	0.3666	DRS	0.6427	0.8912
1999	Bermuda	XL Re Ltd.	XL Capital Ltd.	0.5436	0.8032	0.5262	DRS	0.6768	0.9681
2000	Bermuda	XL Re Ltd.	XL Capital Ltd.	0.4618	0.5216	0.3295	DRS	0.8853	0.7135
2001	Bermuda	XL Re Ltd.	XL Capital Ltd.	0.7755	1.0000	0.4069	DRS	0.7755	0.5247
2005	Bermuda	XL Re Ltd.	XL Capital Ltd.	1.0000	1.0000	0.3760	CRS	1.0000	0.3760
1998	Bermuda	Alea (Bermuda)	Alea Group	0.2251	0.2632	0.0851	IRS	0.8554	0.3779
1999	Bermuda	Alea (Bermuda)	Alea Group	1.0000	1.0000	0.3399	CRS	1.0000	0.3399
2000	Bermuda	Alea (Bermuda)	Alea Group	0.2593	0.2638	0.1322	IRS	0.9828	0.5099
2001	Bermuda	Alea (Bermuda)	Alea Group	0.3578	0.3661	0.1991	DRS	0.9773	0.5565
2002	Bermuda	Alea (Bermuda)	Alea Group	0.3455	0.3596	0.1330	DRS	0.9609	0.3849
2003	Bermuda	Alea (Bermuda)	Alea Group	0.6314	0.6384	0.2520	DRS	0.9890	0.3991
2004	Bermuda	Alea (Bermuda)	Alea Group	0.8683	0.8698	0.3365	IRS	0.9983	0.3875
2001	Bermuda	ESG Reinsurance	ESG Re Ltd.	0.1811	0.1844	0.1017	IRS	0.9821	0.5613
2002	Bermuda	ESG Reinsurance	ESG Re Ltd.	0.3144	0.3252	0.1023	IRS	0.9667	0.3254

<b>Year</b>	<b>Country</b>	<b>Company_Name</b>	<b>Ultimate_Parent</b>	<b>Technical</b>	<b>Pure Technical</b>	<b>Cost</b>	<b>Scale Type</b>	<b>Scale</b>	<b>Allocative</b>
2003	Bermuda	ESG Reinsurance	ESG Re Ltd.	0.2280	0.2794	0.1010	IRS	0.8159	0.4431
2004	Bermuda	ESG Reinsurance	ESG Re Ltd.	0.6340	0.7205	0.1341	IRS	0.8799	0.2116
2005	Bermuda	ESG Reinsurance	ESG Re Ltd.	1.0000	1.0000	0.0776	CRS	1.0000	0.0776
1999	Bermuda	Commercial Risk Re	SCOR S.A.	0.7789	0.9610	0.7590	DRS	0.8105	0.9744
2000	Bermuda	Commercial Risk Re	SCOR S.A.	0.7470	0.7724	0.5783	DRS	0.9671	0.7741
2001	Bermuda	Commercial Risk Re	SCOR S.A.	0.7905	0.8806	0.4755	DRS	0.8977	0.6015
2002	Bermuda	Commercial Risk Re	SCOR S.A.	0.9586	1.0000	0.7820	DRS	0.9586	0.8158
2000	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.3114	0.3392	0.1696	IRS	0.9181	0.5446
2001	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.5440	0.5623	0.2985	IRS	0.9674	0.5488
2002	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.2469	0.2628	0.1719	IRS	0.9394	0.6965
2003	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.2430	0.2431	0.2146	IRS	0.9993	0.8834
2004	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.3525	0.4590	0.3035	DRS	0.7680	0.8610
2005	Bermuda	PXRE Reinsurance	PXRE Group Ltd.	0.9567	1.0000	0.6344	DRS	0.9567	0.6632
2003	Bermuda	Tokio Millennium Re	Millea Holdings Inc.	0.2882	0.3007	0.2402	DRS	0.9587	0.8335
1997	Bermuda	Enterprise Re Holdings		1.0000	1.0000	0.3652	CRS	1.0000	0.3652
1998	Bermuda	Enterprise Re Holdings		0.4953	0.5237	0.4424	DRS	0.9459	0.8931
1998	Bermuda	Lehman Re Ltd.		1.0000	1.0000	0.3084	CRS	1.0000	0.3084
1999	Bermuda	Lehman Re Ltd.		1.0000	1.0000	0.6606	CRS	1.0000	0.6606
2000	Bermuda	Lehman Re Ltd.		0.7190	1.0000	0.3869	DRS	0.7190	0.5381
2000	Bermuda	Everest Reinsurance	Everest Re Group	1.0000	1.0000	0.8753	CRS	1.0000	0.8753
2001	Bermuda	Everest Reinsurance	Everest Re Group	0.8543	0.8572	0.6136	IRS	0.9967	0.7183
2002	Bermuda	Everest Reinsurance	Everest Re Group	0.6910	0.7532	0.2056	DRS	0.9173	0.2976
2003	Bermuda	Everest Reinsurance	Everest Re Group	0.6416	0.7831	0.2122	DRS	0.8193	0.3308
2004	Bermuda	Everest Reinsurance	Everest Re Group	0.6820	0.9357	0.3699	DRS	0.7288	0.5424
2005	Bermuda	Everest Reinsurance	Everest Re Group	0.9393	1.0000	0.3146	DRS	0.9393	0.3349
2002	Bermuda	DaVinci Reinsurance	RenaissanceRe	0.1540	0.2008	0.1270	DRS	0.7667	0.8246
2003	Bermuda	DaVinci Reinsurance	RenaissanceRe	0.2048	0.2267	0.1863	DRS	0.9033	0.9097
2004	Bermuda	DaVinci Reinsurance	RenaissanceRe	0.4034	0.5407	0.3577	DRS	0.7462	0.8865
2005	Bermuda	DaVinci Reinsurance	RenaissanceRe	0.4261	0.6458	0.3894	DRS	0.6598	0.9138
2000	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.1853	0.3310	0.1431	IRS	0.5599	0.7720
2001	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.2403	0.3189	0.1425	IRS	0.7535	0.5930
2002	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.2789	0.2961	0.1677	IRS	0.9420	0.6011
2003	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.2760	0.3083	0.2509	IRS	0.8952	0.9092
2004	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.3169	0.3345	0.2120	DRS	0.9475	0.6688
2005	Bermuda	MS Frontier Re	Mitsui Sumitomo	0.4459	0.4549	0.3377	DRS	0.9802	0.7574
2003	Bermuda	Hannover Re Bermuda	HDI Haftpflichtverband	0.3929	0.5208	0.2780	DRS	0.7545	0.7076
2004	Bermuda	Hannover Re Bermuda	HDI Haftpflichtverband	0.4110	0.6402	0.2538	DRS	0.6420	0.6175
2005	Bermuda	Hannover Re Bermuda	HDI Haftpflichtverband	0.5029	0.8397	0.2616	DRS	0.5989	0.5202
2005	Bermuda	Aspen Insurance Ltd.	Aspen Insurance Holdings	1.0000	1.0000	0.3001	CRS	1.0000	0.3001
2005	Bermuda	Endurance Specialty	Endurance Specialty	0.4771	0.7100	0.2970	DRS	0.6719	0.6225

<b>Year</b>	<b>Country</b>	<b>Company_Name</b>	<b>Ultimate_Parent</b>	<b>Technical</b>	<b>Pure Technical</b>	<b>Cost</b>	<b>Scale Type</b>	<b>Scale</b>	<b>Allocative</b>
2001	Bermuda	Max Re Ltd.	Max Re Ltd.	0.6283	0.7742	0.5465	DRS	0.8116	0.8699
2002	Bermuda	Max Re Ltd.	Max Re Ltd.	0.5047	0.7422	0.2560	DRS	0.6800	0.5072
2003	Bermuda	Max Re Ltd.	Max Re Ltd.	0.5573	0.7779	0.3829	DRS	0.7164	0.6871
2004	Bermuda	Max Re Ltd.	Max Re Ltd.	0.7357	1.0000	0.6512	DRS	0.7357	0.8852
2005	Bermuda	Max Re Ltd.	Max Re Ltd.	0.6801	1.0000	0.5665	DRS	0.6801	0.8329

**Appendix E.2: Efficiency of Bermuda Property-Casualty Insurers**

Year	Country	Company Name	Ultimate Parent	Technical	Pure Technical	Cost	Scale Type	Scale	Allocative
1995	Bermuda	Associated Electric & Gas Ins. Services		1.0000	1.0000	0.5553	CRS	1.0000	0.5553
1996	Bermuda	Associated Electric & Gas Ins. Services		0.9230	1.0000	0.7393	DRS	0.9230	0.8009
1997	Bermuda	Associated Electric & Gas Ins. Services		0.6794	0.8101	0.3390	DRS	0.8386	0.4989
1998	Bermuda	Associated Electric & Gas Ins. Services		0.4194	0.5832	0.2389	DRS	0.7192	0.5696
1999	Bermuda	Associated Electric & Gas Ins. Services		0.2945	0.3544	0.2181	DRS	0.8310	0.7407
2000	Bermuda	Associated Electric & Gas Ins. Services		0.1478	0.3502	0.1388	DRS	0.4221	0.9392
2001	Bermuda	Associated Electric & Gas Ins. Services		0.4015	0.4679	0.3181	DRS	0.8581	0.7922
2002	Bermuda	Associated Electric & Gas Ins. Services		0.1902	0.3743	0.1263	DRS	0.5082	0.6641
2003	Bermuda	Associated Electric & Gas Ins. Services		0.3943	0.4605	0.3344	DRS	0.8562	0.8481
2004	Bermuda	Associated Electric & Gas Ins. Services		0.4283	0.4405	0.3449	DRS	0.9722	0.8054
2005	Bermuda	Associated Electric & Gas Ins. Services		0.1991	0.3594	0.1657	DRS	0.5540	0.8322
1995	Bermuda	Brittany Insurance Co.		1.0000	1.0000	0.2293	CRS	1.0000	0.2293
1996	Bermuda	Brittany Insurance Co.		0.6031	0.6184	0.3431	IRS	0.9752	0.5689
1997	Bermuda	Brittany Insurance Co.		0.3587	0.3592	0.1355	IRS	0.9985	0.3777
1995	Bermuda	Cedar Insurance and Reinsurance		0.0740	0.1466	0.0706	IRS	0.5050	0.9541
1996	Bermuda	Cedar Insurance and Reinsurance		0.1760	0.2137	0.1153	IRS	0.8236	0.6552
1997	Bermuda	Cedar Insurance and Reinsurance		0.1477	0.2053	0.1063	IRS	0.7191	0.7203
1998	Bermuda	Cedar Insurance and Reinsurance		0.0991	0.1090	0.0700	IRS	0.9089	0.7061
1999	Bermuda	Cedar Insurance and Reinsurance		0.0683	0.0869	0.0467	IRS	0.7857	0.6831
2005	Bermuda	Steamship Mutual Underwriting Assn		0.2105	0.2435	0.1622	DRS	0.8648	0.7703
1996	Bermuda	Heddington Insurance		0.7745	0.8497	0.3032	DRS	0.9114	0.3915
1997	Bermuda	Heddington Insurance		0.3929	0.8866	0.1148	DRS	0.4431	0.2921
1998	Bermuda	Heddington Insurance		0.2706	0.5997	0.0882	DRS	0.4511	0.3259
1999	Bermuda	Heddington Insurance		0.5077	0.7839	0.1019	DRS	0.6476	0.2007
2004	Bermuda	Heddington Insurance		0.4839	1.0000	0.1311	DRS	0.4839	0.2709
1995	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.8492	0.8517	0.1768	DRS	0.9971	0.2082
1996	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.7839	0.8064	0.2429	DRS	0.9720	0.3099
1997	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.3964	1.0000	0.1357	DRS	0.3964	0.3424
1998	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.7426	1.0000	0.0769	DRS	0.7426	0.1035
1999	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.9280	0.9936	0.1027	DRS	0.9340	0.1106
2000	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.3060	1.0000	0.0103	DRS	0.3060	0.0337
2001	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	1.0000	1.0000	0.3537	CRS	1.0000	0.3537
2002	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.3767	0.3770	0.1265	IRS	0.9991	0.3359
2003	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	0.3648	0.4612	0.2760	DRS	0.7909	0.7566
2004	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	1.0000	1.0000	0.8422	CRS	1.0000	0.8422
2005	Bermuda	Oil Insurance Ltd.	Oil Insurance Ltd.	1.0000	1.0000	0.8228	CRS	1.0000	0.8228
1995	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.4620	0.4641	0.1352	IRS	0.9955	0.2927
1996	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.2756	0.2778	0.1998	IRS	0.9920	0.7251
1997	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.1759	0.1804	0.0644	IRS	0.9754	0.3659

<b>Year</b>	<b>Country</b>	<b>Company Name</b>	<b>Ultimate Parent</b>	<b>Technical</b>	<b>Pure Technical</b>	<b>Cost</b>	<b>Scale Type</b>	<b>Scale</b>	<b>Allocative</b>
1999	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.1641	0.1645	0.0990	IRS	0.9974	0.6036
2000	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.0756	0.0757	0.0089	IRS	0.9987	0.1176
2002	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.1264	0.1267	0.0530	IRS	0.9978	0.4193
2003	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.1649	0.2034	0.1179	DRS	0.8108	0.7146
2004	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.2196	0.2212	0.1147	DRS	0.9927	0.5224
2005	Bermuda	Oil Casualty Insurance	Oil Casualty Insurance	0.1608	0.2543	0.1047	DRS	0.6325	0.6512
1995	Bermuda	Nobel Ins. Ltd.		0.1060	0.1079	0.0773	IRS	0.9826	0.7297
1996	Bermuda	Nobel Ins. Ltd.		0.2160	0.2204	0.1264	IRS	0.9802	0.5851
1997	Bermuda	Nobel Ins. Ltd.		0.1380	0.1468	0.0981	IRS	0.9400	0.7107
1995	Bermuda	Western General Insurance Ltd.		0.7664	0.7719	0.3706	DRS	0.9929	0.4836
1996	Bermuda	Western General Insurance Ltd.		0.3483	0.3500	0.2944	IRS	0.9953	0.8451
1997	Bermuda	Western General Insurance Ltd.		0.2521	0.2571	0.1867	DRS	0.9804	0.7404
1998	Bermuda	Western General Insurance Ltd.		0.2114	0.3334	0.1663	DRS	0.6341	0.7864
1999	Bermuda	Western General Insurance Ltd.		0.1548	0.2203	0.0992	DRS	0.7027	0.6406
2000	Bermuda	Western General Insurance Ltd.		0.2705	0.3356	0.1851	DRS	0.8061	0.6842
2001	Bermuda	Western General Insurance Ltd.		0.5729	0.6542	0.2979	DRS	0.8757	0.5200
2002	Bermuda	Western General Insurance Ltd.		0.1925	0.3482	0.0978	DRS	0.5528	0.5081
2003	Bermuda	Western General Insurance Ltd.		0.6930	0.6984	0.2549	IRS	0.9923	0.3678
1996	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	1.0000	1.0000	0.8749	CRS	1.0000	0.8749
1997	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	0.6408	0.6834	0.2674	DRS	0.9376	0.4173
2000	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	0.1697	0.2435	0.1199	DRS	0.6969	0.7068
2001	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	0.5242	0.6141	0.2744	DRS	0.8537	0.5234
2003	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	0.5076	0.5331	0.2853	DRS	0.9521	0.5621
2004	Bermuda	Zurich International (Bermuda)	Zurich Financial Services	0.9486	0.9492	0.5057	DRS	0.9994	0.5331
2001	Bermuda	General International Ltd.		0.2983	0.4093	0.2172	DRS	0.7287	0.7282
2002	Bermuda	General International Ltd.		0.0967	0.2385	0.0699	DRS	0.4054	0.7228
2003	Bermuda	General International Ltd.		0.1633	0.4362	0.1606	DRS	0.3743	0.9836
2004	Bermuda	General International Ltd.		0.3274	0.4840	0.2624	DRS	0.6764	0.8015
1995	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.5270	0.6809	0.1578	DRS	0.7739	0.2995
1996	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.3673	0.7615	0.2546	DRS	0.4823	0.6933
1997	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.3987	1.0000	0.1279	DRS	0.3987	0.3208
1998	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.2632	0.3546	0.1017	DRS	0.7421	0.3864
1999	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.4288	0.8382	0.1006	DRS	0.5115	0.2347
2000	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.3027	0.8988	0.1812	DRS	0.3368	0.5985
2001	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.5248	0.7851	0.2260	DRS	0.6684	0.4306
2002	Bermuda	Overseas Partners Ltd.	Overseas Partners Ltd.	0.2165	0.3328	0.0863	DRS	0.6507	0.3986
1995	Bermuda	Through Transport Mutual	Through Transport Mutual	0.1457	0.1790	0.1129	DRS	0.8141	0.7751
1996	Bermuda	Through Transport Mutual	Through Transport Mutual	0.2818	0.2827	0.1754	IRS	0.9968	0.6224
1997	Bermuda	Through Transport Mutual	Through Transport Mutual	0.2110	0.2110	0.1492	DRS	0.9997	0.7073
1998	Bermuda	Through Transport Mutual	Through Transport Mutual	0.1970	0.2597	0.1533	DRS	0.7587	0.7783



Year	Country	Company Name	Ultimate Parent	Technical	Pure Technical	Cost	Scale Type	Scale	Allocative
1999	Bermuda	Through Transport Mutual	Through Transport Mutual	0.0993	0.1241	0.0758	DRS	0.7998	0.7639
2000	Bermuda	Through Transport Mutual	Through Transport Mutual	0.1704	0.1704	0.1430	IRS	1.0000	0.8390
2001	Bermuda	Through Transport Mutual	Through Transport Mutual	0.3724	0.4405	0.2785	DRS	0.8454	0.7478
2002	Bermuda	Through Transport Mutual	Through Transport Mutual	0.0925	0.1078	0.0581	DRS	0.8585	0.6281
2003	Bermuda	Through Transport Mutual	Through Transport Mutual	0.2502	0.3511	0.1817	DRS	0.7127	0.7260
2004	Bermuda	Through Transport Mutual	Through Transport Mutual	0.1613	0.1772	0.1369	DRS	0.9102	0.8487
2005	Bermuda	Through Transport Mutual	Through Transport Mutual	0.0946	0.1045	0.0743	DRS	0.9056	0.7847
1995	Bermuda	Mutual Indemnity Ltd.		0.2407	0.3007	0.2168	DRS	0.8005	0.9007
1996	Bermuda	Mutual Indemnity Ltd.		0.4363	0.4503	0.3453	IRS	0.9688	0.7914
1997	Bermuda	Mutual Indemnity Ltd.		0.2031	0.2155	0.1643	IRS	0.9426	0.8091
1999	Bermuda	Mutual Indemnity Ltd.		0.1794	0.1998	0.1481	IRS	0.8983	0.8255
1996	Bermuda	Corporate Officers and Directors Assu ACE Ltd.		0.3314	0.3566	0.2399	IRS	0.9291	0.7239
1995	Bermuda	Finas Co. Ltd.		0.3017	0.3096	0.1739	DRS	0.9743	0.5764
1996	Bermuda	Finas Co. Ltd.		0.2921	0.3065	0.2139	IRS	0.9531	0.7321
1997	Bermuda	Finas Co. Ltd.		0.2232	0.2237	0.1125	DRS	0.9977	0.5039
1998	Bermuda	Finas Co. Ltd.		0.1731	0.1976	0.1057	DRS	0.8763	0.6106
1999	Bermuda	Finas Co. Ltd.		0.2639	0.2645	0.1038	DRS	0.9975	0.3935
2000	Bermuda	Finas Co. Ltd.		0.1167	0.1226	0.0805	IRS	0.9523	0.6898
1998	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.4864	0.5277	0.2086	DRS	0.9217	0.4289
1999	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.2039	0.2092	0.1709	DRS	0.9745	0.8384
2000	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.1037	0.1714	0.1036	DRS	0.6052	0.9987
2001	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.2589	0.2893	0.2565	DRS	0.8951	0.9908
2002	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.1577	0.2848	0.1192	DRS	0.5537	0.7559
2003	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.2692	0.3043	0.2582	DRS	0.8845	0.9592
2004	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.2761	0.2811	0.2529	DRS	0.9824	0.9159
2005	Bermuda	Attorneys' Liability Assurance Society (Bermuda)		0.1567	0.2907	0.1306	DRS	0.5393	0.8334
1999	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.1013	0.1056	0.0919	IRS	0.9597	0.9064
2000	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.0261	0.0265	0.0148	IRS	0.9879	0.5657
2001	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.1800	0.1809	0.1298	DRS	0.9954	0.7207
2002	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.1040	0.1078	0.0674	DRS	0.9643	0.6482
2003	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.1739	0.1847	0.1435	DRS	0.9415	0.8254
2004	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.1995	0.2741	0.1860	DRS	0.7280	0.9321
2005	Bermuda	R.V.I. Guaranty Co. Ltd.	R.V.I. Guaranty Co. Ltd.	0.0812	0.0951	0.0500	DRS	0.8534	0.6156
1999	Bermuda	XL Insurance (Bermuda) Ltd.	XL Capital Ltd.	0.1799	0.2222	0.1387	DRS	0.8095	0.7710
2000	Bermuda	XL Insurance (Bermuda) Ltd.	XL Capital Ltd.	0.0761	0.1833	0.0738	DRS	0.4151	0.9703
2001	Bermuda	XL Insurance (Bermuda) Ltd.	XL Capital Ltd.	0.3364	0.5215	0.2610	DRS	0.6450	0.7759
2001	Bermuda	AXIS Specialty Ltd.	AXIS Capital Holdings Ltd.	0.4594	0.4931	0.1212	DRS	0.9318	0.2639
2002	Bermuda	AXIS Specialty Ltd.	AXIS Capital Holdings Ltd.	0.0911	0.1522	0.0421	DRS	0.5988	0.4624
2003	Bermuda	AXIS Specialty Ltd.	AXIS Capital Holdings Ltd.	0.2093	0.2634	0.1258	DRS	0.7945	0.6012
2004	Bermuda	AXIS Specialty Ltd.	AXIS Capital Holdings Ltd.	0.2805	0.2853	0.1661	DRS	0.9831	0.5920

<b>Year</b>	<b>Country</b>	<b>Company_Name</b>	<b>Ultimate_Parent</b>	<b>Technical</b>	<b>Pure Technical</b>	<b>Cost</b>	<b>Scale Type</b>	<b>Scale</b>	<b>Allocative</b>
2005	Bermuda	AXIS Specialty Ltd.	AXIS Capital Holdings Ltd.	0.2068	0.3041	0.1166	DRS	0.6799	0.5640
2002	Bermuda	Catlin Insurance Co. Ltd.	Catlin Insurance Co. Ltd.	0.1764	0.1798	0.0484	IRS	0.9811	0.2745
2003	Bermuda	Catlin Insurance Co. Ltd.	Catlin Insurance Co. Ltd.	0.1436	0.1590	0.1084	DRS	0.9036	0.7544
2004	Bermuda	Catlin Insurance Co. Ltd.	Catlin Insurance Co. Ltd.	0.1757	0.1767	0.1207	DRS	0.9946	0.6868
2005	Bermuda	Catlin Insurance Co. Ltd.	Catlin Insurance Co. Ltd.	0.1424	0.1466	0.1145	DRS	0.9718	0.8038