



行政院金融監督管理委員會九十四年度委託研究計畫

以財務再保險、限定再保險移轉災害風險之研究

(四)

委託單位：行政院金融監督管理委員會保險局
研究單位：英商信利保險經紀人股份有限公司
研究人員：林治平、黃範、宋明哲、林勳發及
倫敦研究團隊

中華民國九十五年六月三十日

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第四章：財務再保險、限定再保險的實例

第一節 導論

在撰寫此份報告時點，已有 38 家保險公司接獲傳票被要求協助調查限定再保險交易之資訊，接到這項要求的對象包括保險公司、再保險公司、保險經紀人、會計師事務所及個人。

茲提供市場上已知的接到這項要求的公司名單如下表：

Ace Ltd	CNA Financial
ACE Tempest Re	Cologne Re
Acordia Re	Deloitte & Touche
AIG	E&S Reinsurers Ltd
Alea London Ltd	Fairfax Financial Holdings
AXA Re	Fairmont Specialty Group
Benfield Re	Fortress Re
Bristol Holdings West, Inc	General Electric Co
Chubb Corporation	General Re
Chubb Atlantic Reinsurance Specialist Ltd	Guy Carpenter
Hannover Re	Platinum Underwriters Holdings
Jardine Sayer	PricewaterhouseCoopers
MBIA	Renaissance Re
Merrill Lynch	St Paul Travelers
Morgan Stanley	Swiss Re
Munich Re	Swiss Re America
National Indemnity Company of the South	Trans Atlantic Re
National Union Fire Insurance Company	XL Capital
Partner Reinsurance Company	Zurich Financial Services
Philadelphia Indemnity	

上述傳票召喚大致上可分為兩種類別—政府單位之行動以及民間商業訴訟案件，在美國這兩種類型的訴訟案件都曾發生過，而且也有部份重大訴訟案件在國際市場上有所耳聞，下面我們將詳細介紹幾個比較有趣的案例如下：

第二節 歐美財務再保險、限定再保險案例

一、HIH 保險股份有限公司 (HIH)

此一案例由於係澳洲最大宗之公司倒閉案件引發全球關注。由於 HIH 保險公司於 2001 年 3 月 15 日宣告破產，之後便成立 Owens 委員會以便調查 HIA 倒閉背後的內幕。Owens 委員會最後判定由於下列事項確實證明 HIH 有不當運用再保險之行為：

- 許多 HIH 的再保險交易中並未實際存有風險轉移的事實
- 僅以附加條款或口頭同意的方式代替再保險合約
- 修改並回溯保險單生效日期
- 針對再保險損失作假帳

而且委員會後來發現這些被查獲的交易行為是為了掩飾準備金不足及虛列財務報表上的獲利而產生的。

這項調查案產生了藉由取消 10-15 個再保險合約的方式將 3 億左右澳幣的款項歸還給公司資產清算人的效果。雖然直到現在我們也不是很清楚到底還有多少不法的再保險交易未被偵察出來。

二、Brightpoint 公司

Brightpoint 公司是一家美國手機經銷商，它在 1988 年向 AIG 買了一份綜合保單以補償它在英國單次損失額。Brightpoint 公司在 1998 年 10 月宣佈公司第四季虧損金額估計認列 1,300 萬至 1,800 萬元，然而同年 12 月時却改宣稱損失金額調高至 2,900 萬元。

由於 Brightpoint 公司所買的這一份保單生效日回溯到兩個月前開始生效，而且在保單內容條款上載明未來可預期的損失額，因此才引發監理機關的注意。此份保單承諾 Brightpoint 公司未來三年內給付總保費 1,500 萬元後，還可以收回 1,190 萬元。此外，美國證交會(SEC)指出該 Brightpoint 公司與保險公司雙方口頭承諾將有超額保費部份的退佣，但去沒有設立經驗帳戶以存入退佣金額。SEC 質疑此保單根本不存有風險移轉的事實。

2003 年 9 月 AIG 最後支付了 1,000 萬元罰金，以了結 SEC 的指控。然後這個事件過後值得重視的是 Brightpoint 公司接受查核期間，SEC 還發現 AIG 以相同方式也幫了另一家公司，PNC 財務集團公司設計了一種特別的產品，將 PNC 7.6 億元的債務和不良貸款得以從其公司的資產負債表上轉移出去。這件調查案持續到 2004 年 11 月，SEC 仍以此保險交易單純只是為兩家公司作財務調整，實際上也並沒有風險移轉的事實，所以最後 AIG 還是給付 1.26 億元罰金給 SEC 以平息訴訟。

三、ROA 公司 (Richmond Virginia-based Reciprocal of America)

Richmond Virginia-based Reciprocal of America 公司在 2003 年 1 月時因為財務問題被迫接管，同年 6 月時就宣布破產。相關監理單位提出 5 項訴訟，其中兩個是由接管人提出控訴 ROA 與 Berkshire Hathaway's 的子公司通用再保公司 (General Re) 串謀簽訂附加條款 (side letter) 以及回溯修改再保單的承保限制，以成功將公司負債轉移回給 Reciprocal 公司。

同時監理機關也想了解雙方管理層級是否很早之前便有共謀行為，或是還有其它公司涉入共同隱藏 ROA 公司的財務問題。Reciprocal 公司並未依據合宜的會計原則處理此份再保單，而且是沒有風險移轉行為存在。

此訴訟案的罪行包括詐欺、商業行為共謀以及違反消費者保護法。

事實上檢調到最後還有許多質疑議題浮出抬面，而最後偵查結果是該公司總裁和另一位資深副總被判處 5 年有期徒刑。通用再保公司在這個事件中似乎牽涉到境外專屬保險公司前衛承保條款等方面的問題。First Virginia 再保公司是由 Reciprocal 集團主管所控股持有的，通用再保公司也在 2002 年償付這份再保險合約。

四、Converium 公司

瑞士保險集團 Converium 在 5 月 28 日宣佈重新編製該公司 1998 年至 2004 年間的財務報表，以及 2003 年 3 月 31 日至 2005 年 6 月 30 日間的季報表上的盈餘。

此項聲明的確是有其必要性，因為有一連串再保險弊案是由該集團於北美洲的分支機構蘇黎世再保險公司而簽訂，現在蘇黎世再保險公司也已更名為北美 Converium 再保險公司。由於該公司與 MBIA 保險公司（美國紐澤西洲之一家財務擔保保險公司）之間有兩份引發爭議的再保險合約，一份是固定比率再保合約，另一份是超額損失再合約，這兩份再保險合約都將公司重大的負債損失一起透過轉再保合約反映至第三家公司的會計帳上。

該交易於 1998 年間簽訂，主因是為沖銷 MBIA 保險公司所發行之 Alleghany 健康教育研究基金所發行 2.65 億債券時所遭受之損失 1.7 億元。在這兩項合約中，Converium 償付 MBIA 1.75 億元，以交換 MBIA 保

險公司同意分出 1.01 億元的業務給 Converium 再保公司。不過除此之外看起來是 Converium 隨後把該負債風險轉再保給 Axa 再保險公司，MBIA 公司給予口頭協議同意成為 Axa 再保險公司的轉再保公司（也就是說：該筆業務 MBIA 公司口頭承諾將該筆負債於 2005 年之前接手回來。）

此一財報重新編列之聲明引發 SEC 著手調查 MBIA 保險公司，在調查行動展開之後，MBIA 保險公司遭致股東抗議涉嫌作假帳以及違反證券交易法等。在調查期間，MBIA 保險公司也重新聲明其過去七年的淨利潤應減少 5,400 萬元。

五、Renaissance 再保險公司

相同地，Renaissance 再保公司於 2005 年 2 月宣布因為再保險會計作業失誤導致必須重新編列財報。此項聲明重述 Renaissance 再保公司之淨所得應於 2001 年增加 2,060 萬元、2002 年減少 2,190 萬元以及 2003 年增加 130 萬元。

六、美國國際集團 (AIG)

近年來美國紐約州總檢察長 Eliot Spitzer 調查美國國際集團 (AIG) 的財務造假案也引發全球媒體的高度關切。調查重心投注在 AIG 一連串限定再保險合約的會計不當處理原則，其中最大筆交易是 AIG 與通用科隆再保公司(都柏林)之間 5 億美元的再保險合約。AIG 前總裁 Hank Greenberg、AIG 前首席財務長 Howard Smith 以及通用科隆再保公司執行長 John Houldsworth 三人因為利用再保險合約轉手虛報公司盈餘，而欺騙投資者不實財務資訊。當然與報告闡述之相似案例仍然很多，不過我們已列舉出幾個較知名重大的再保險交易弊案供各位瞭解。

National Union 是 AIG 集團的子公司，它與通用科隆再保公司（通用再保公司之分支機構）簽訂了兩份再保險合約，合約內容闡明通用科隆再保公司要給付 AIG 5 億美元以作為 AIG 提供通用 6 億美元之再保險保障，而 AIG 把這 5 億美元的保費視為公司收入，隨後在準備金內亦增加了 5 億美元。

從保單內容來看，該筆再保險交易裡有 98% 的保費收入是保存在某個的經驗帳戶內，而通用科隆再保公司原先給付的 1,000 萬美元隨後與 500 萬美元當作給通用再保公司的手續費一起退還。這些交易都是透過 AIG 在蘇黎世的私人銀行和 AIG 集團在拉丁美洲貝多拉的子公司以假貸款方式轉帳。2005 年 3 月 AIG 坦承與通用再保公司之間的是一種不當的再保險交易，而且顯明並沒有風險移轉之佐證，兩方之間的交易根本不能視為再保險。令人震驚的是，在這場交易中兩家公司的角色似乎完全顛倒過來，一個專業的再保險公司如科隆再保公司並未扮演其應有的角色。而另一方面令人吃驚的是關心這件交易的民眾也並未對此明顯違反常規之交易作詳細地辨別。

七、千代田保險公司[從 RA 擴展]

千代田火災海上保險公司（歐洲）因為簽訂停損再保險合約未忠實反映公司 1999 年財務狀況而觸犯英國監理機關遭受偵察。這份再保險合約事實上是 2000 年才投保，但是 Covernote 上的簽署日期却回溯到 1999 年 6 月，隨後以附加條件方式告知日本母公司。

另一份再保險合約弊案是關於百慕達的保險人 Partner Re 公司，其聲稱將提供保證全損理賠之給付。此項保證條款由公司簽署却沒有向公司稽核單位揭露，後來該公司與日本 Dai Tokyo 公司合併時，該再保險交易才被相關監理機關提出審理。

付與 Partner Re 公司合約之再保險費則是由其它兩張與百慕達 Ace 公司以及都柏林 Cologne Re 公司於 2001 年所購買再保單的保險費作為給付來源。

八、USA 美國

Mr. Howard Mills 於 2005 年 3 月 29 日代表紐約州保險局監察人 (Superintendent of Insurance of the New York State insurance Department) 發表一份聲明如下：

“相關法規參照：” 保險法第 309 與 310 條。

紐約保險局十分關心保險公司是否有可能不當運用限定再保險以操弄財務報表數字，當保險局認為運用限定再保險作為合法的風險移轉要件應包含移轉利率風險以及時間風險。這些再保險交易可能扭曲保險公司承保量以及真實盈餘狀況，特別是當這些再保險交易根本不存有風險移轉或是再保險交易帳務不當處理等。

因此保險局現在要求保險公司最高執行長宣誓對於任何再保險合約之風險移轉不可違背下列原則，否則將因偽證而受到罰鍰處分：

(I)任何情況下再保險合約中不可存有任何附加條款或口頭協議，以降低、限制或減輕再保風險而影響雙方潛在損失風險；而且，

(II)對任何一份再保險契約而言，呈報公司應保存完整的核保資料檔記錄每筆再保交易對公司的經濟效益以及風險移轉分析，以作為日後查核會計處理程序的佐證。

此外，保險局將保險公司應於公司年報裡增加揭露限定風險交易的資訊，以及包含上述聲明裡要求的必備條件。

四個月之後，2005年8月3日，保險局另發佈一項增補聲明稿闡述內容如下：“...美國國家保險監理官協會（NAIC）之工作小組已經採用保險公司於公司年報中以另行揭露方式解釋限定再保，包括公司總裁（CEO）和財務長（CFO）之無違法聲明。這些額外條款要求全美國所有產險／傷害險發行的保險公司自編制2005年報時開始實施。

為了與美國保險監理協會先前提出聲明連結，保險局要求 Circular Letter 8（2005年）以及產險／傷害險保險公司的無違法誓詞要求將不再繼續實施。然而直到編製2005年報時，仍要求上述聲明資料需載明於2005年度財務檢查報表裡。

在此條款修改案中，美國監理官員認為再保險之呈報要件應回歸交易本質，而且強調再保險交易如果太錯綜複雜時有可能造成嚴重的財務不實揭露。

令人比較好奇的是，到目前為止該法案都沒有明確的標準以定義限定再保險之成立條件，因此保險公司也僅能判斷交易發生之本質，儘量遵循再保險交易之保險精神來判斷是否可歸類為再保險交易處理。美國國家保險監理官協會（NAIC）產險與傷害再保險研究小組已針對限定再保險的構成要件作以下條款之制定：

- 再保險契約期間超過2年以上，並且在契約有效期間是不可讓再保公司任由撤銷的；
- 具備有限度或有條件的註銷條款，此項註銷條款規定分保公司或其關係企業於註銷原合約時，必須負擔某些義務責任。與再保公司或其關係企業簽訂新合約。
- 回溯再保險保單之承保範圍；

- 累積停止損失再保險契約的保障範圍；
- 合約雙方有權無條件或片面結清再保合約；
- 保險公司管理階層相信有 50% 以上的機率會結清合約；
- 再保險合約內容含某些條款允許每季呈報損失、或給付損失額一次，但不能為常態性發生（除非承保期間內沒有實際損失發生）；或於給付期間內累積多年期之自留額、或合約內有條款載明可接受再保公司延遲給付再保攤回額予分保公司；
- 分保公司業務之既有風險或其分支機構有超過 50% 的業務總額承接進來其他再保公司分出之保險業務，或者是存有 25% 以上的分出風險又轉再保回分保公司與其分支機構承擔。此條款不允許類似這種集中保險交叉安排的情況發生。
- 倘若再保險合約之會計處理採用美國一般公認會計原則（GAAP）與法定會計準則（SAP）兩種方法而有結果差異時，應於財務報表上解釋差異原因與作法。

如上所述條款規定之會計處理調整必須於自 2005 年會計年度便開始反映，而且公司各類財務報表與會計帳戶在此聲明書公佈時間點便要配合調整。基本須遵照處理之原則如下闡述：

保險公司必須在其年度與限定再保險有關之帳戶中答覆新的一般質詢，如果保險公司十分肯定其再保險相關交易並無違法，保險公司必須連同公司財務報表，另外再提交一份再保險補充摘要報告書 19-1（Reinsurance Summary Supplemental Filing form，19-1）以作為交易適法之憑證。

所有保險公司都必須在其年度財務報表裡，另外檢附經由其執行長與財務長簽署之再保險適法的聲明書 20-1 (reinsurance attestation supplement, 20-1)。產物保險公司財務報表上相關條款於美國國家保險監理官協會(NAIC)芝加哥冬季會議上通過自 2006 年起生效，該項條款亦張貼於 NAIC 網站上供業者作為製作 2005 年度報表之指導。

下面為六項新規定的一般質詢事項 (General Interrogatories)，其制定目的簡述如下：

質詢項目 7.3

當既有質詢項目 7.1 的回覆為肯定時才需要另外答覆此項新質詢。7.1 質詢問題為：保險公司是否有產生風險或是在其固定比率之再保險合約中，包含降低再保險公司承保損失於約定比率下的限制性條款？(類似條款諸如損失率扣除額、累計責任限額...等)。如果答覆為"是"時，需接著回覆質詢項目 7.3。7.3 質詢問題為：保險公司提存之再保信用風險額是否已經反應出損失限制條款所作之比例扣減？如果答案為"否"時，保險公司即可不需提供再保險之補充摘要報告書。

質詢項目 9.1

質詢項目 9.1 詢問保險公司是否有任何重大再保險合約係採用有條件限制的再保險會計處理原則？如果答案為"是"時，保險公司需要額外提供再保險之補充摘要報告書檢附於質詢項目 9.3 中。

重大係指再保險契約最後出現正向或負向的核保結果，或是呈報日曆年度之簽單保費收入或已分保之賠款準備高於前年度期末盈餘 3% 以上。就本計算報告書編製目的而言，多張再保險合約對單一個再保公司或其分支機構，需予以加總金額。(然而僅就每份再保險契約之內容而言，有一或多個的限定再保險的特質)。

質詢項目 9.2

質詢項目 9.1 詢問保險公司之合約分出再保費是否超過該公司之簽單保費 50%以上，或分出予再保人之保費之 25%以上又回分至分保公司或其關係企業？倘若答案為是時，保險公司必須額外提供再保險之補充摘要報告書檢附於質詢項目 9.3 中。質詢項目 9.2 中並沒有所謂重大性之門檻規定，而且比較有趣的部份為：倘若以“不論什麼都表示有可能 (whatever means possible)”回覆時（包括透過對再保公司直接詢問而取得書面文件），呈報之保險公司需要承擔公司可能產生過失之責任。

質詢項目 9.4

質詢項目 9.4 詢問保險公司分保出去之風險是否遵照法定會計準則 (SAP) 視為再保險處理，而另一方面是否有遵照美國一般公認會計原則 (GAAP) 視作存款處理？反之亦然；此項目也沒有重大性之門檻規定。

再保險之補充摘要報告書 (19-1)

當質詢項目 9.1、9.2 或 9.4 之回覆為肯定時，保險公司則必須檢附以下資料：

- 累計財務報表對於各再保險合約整體之影響
- 針對每份再保險契約而言，應包括所有再保條款內容之摘要，例如：INT 適用性之確認，以及必須提交報告之限定再保險成立條件
- 針對每份再保險契約而言，應包括一份公司管理階層對於簽訂此份再保合約的基本目標等內容的摘要

再保險之補充摘要報告書必須以電子檔型態歸檔備查。此項規定是此次冬季會議上，由銀行業者組成之工作小組提出並同意採用，雖然此要求與保險業者認為只需以書面資料保存即可的之最初的想法有所差異。

再保險之補充聲明書 (20-1)

如上所述，此份補充聲明書必須由保險公司資訊長與財務長共同簽署同意，而且僅適用於保險公司已分出之再保險合約，也就是說並不適用其他假設之再保合約。在簽署此聲明書時，執行長與財務長要宣誓絕對以最大誠信之嚴謹態度證明無不法偽造詐欺欺瞞行為，如被調查出來確有此事時，願意無條件接受民事或刑事罰則：

- 1 分保公司與再保公司之間並沒有存在任何另外的附加條款或口頭協議事項，足以降低、限制、減輕或以其他方式影響再保合約雙方任何真實或潛在之損失。
- 2 針對在 1994 年 1 月 1 日(含)以後簽訂、續約或修訂之再保合約，其風險移轉無法合理地認定沒有疑義者，應該提供說明此筆交易之商業動機與風險移轉符合 SSAP62 公報所規範之適當會計處理原則之文件供審閱之用。
- 3 分保公司須遵從 SSAP 第 62 號公報內容。
- 4 分保公司須遵從 SSAP 第 62 號公報內容，要求其必須建立合宜的控管機制以利監督再保險交易的運用是否得當。

第三節 日本與亞太地區財務再保險、限定再保險案例

一、Fortress Re 公司

Fortress Re 公司過去是一家核保代理人公司，以一群日本再保公司（包括 Sompo，Aioi 以及目前已破產的 Taisei 再保公司等）之身份受理再保險保單。Fortress Re 公司專營低層的航空再保險業務，並且對承保中度自留額之超額航空險之主要保險公司提供大型的核保額度。前述這群再保公司賦予 Fortress Re 公司管理階層有很大權限可以代表它們受理再保險業務，包括再保險承保範圍的安排。

2001 年 9 月 21 日恐怖份子攻擊世貿中心事件後，Fortress Re 公司蒙受巨大損失。資誠會計師事務所受 Nissan 公司之委託負責稽核 Fortress 再保公司之損失金額，在當時（Nissan 已經與 Yasuda 合併更名為 Sompo 公司）查核出來 Fortress Re 公司長期存有詐欺行為，稽核報告中更指出 Fortress Re 公司於 1995 至 2001 年間並不如其聲稱有獲利，實際上這個承保集團已經損失 34 億元，而且這些損失大部份早於恐怖攻擊活動之前就已產生。

後來發現 25% 的集保再保業務已經又分保出去給 Carolina Re 公司，這是一家百慕達商之再保公司而且由 Fortress 高層主管之所投資經營。在具爭議的會計年度間(1984 年至 2000 年)，該公司已認列 4.7 億元的獲利，其中有 4 億元已經被以現金股利方式發放。最後該公司遭百慕達法院宣告因損失 3.5 億元以致於 2001 年後期被清算結束營業。

在這些財務不當操弄的實例中，限定再保險方式正好提供 Fortress Re 公司隱瞞其真實財務狀況而虛報其航空業務公司盈利。公司稽核勤業眾信會計師事務所(Deloitte Touche)被指控表示該強制 Fortress Re 公司揭露再保險交易於財報上，而且該會計師事務所後來以約有 2.5 億元解決其在本案所涉之賠償責任。Sompo 公司最後依仲裁方式獲得 10 億元的損失賠償。

第五章：台灣地區運用財務再保險／限定再保險以移轉巨災風險之可能性評估

財務再保險/限定再保險不同於傳統再保，在適當條件下，其成本可能較傳統再保便宜，又可美化保險公司的財務報表，也正因如此，濫用財務再保險/限定再保險醜聞亦有之，也引起各國保險監理機關的留意。

台灣的住宅地震保險共保及危險承擔機制，實施至今已滿四年。該機制穩定了人心，發揮了重要的風險保障功能，也由於地震巨災債券的國際發行，提升了台灣的國際能見度。該機制是台灣風險管理市場的創舉，固然可喜，也因初試啼聲，仍有改善的空間，其中透過財務再保險/限定再保險分散巨災風險不失為可考慮的方案之一。財務再保險/限定再保險在臺灣尚無實證經驗，本章先就現行住宅地震保險共保及危險承擔機制分析檢討，其次提供未來可參考的模型，最後針對未來住宅地震保險共保及危險承擔機制的改變提供可行的建議。

第一節 現有住宅地震保險共保及危險承擔機制分析

台灣住宅地震保險危險承擔機制之目標：1) 提供地震保障；2) 保險費之負擔不能太重；3) 初期政府參與，而台灣住宅地震保險危險承擔機制自立，則為長期目標。

截止 2004 年 12 月 31 日，保單件數有 1,173,082 件，保費計新台幣 36 億，投保率約 15.44%。基金收入約新台幣 16.8 億。

第一項 現行結構及運作

台灣住宅地震保險危險承擔機制之理賠機制，每事件以新台幣 500 億為限。其結構如下：

第一層：國內產險公司	新台幣 20 億
第二層：住宅地震保險基金	新台幣 180 億
第三層：國際市場	
巨災債券(美金 1 億)	新台幣 34 億
第一層超賠再保	新台幣 66 億
第二層超賠再保	新台幣 100 億
最上層： 財政部保證	新台幣 100 億

簽單公司所簽之地震基本保險承保資料於次日以電子傳輸至中再地震部。簽單公司承擔的 20 億，各依其公司之普通火險市場佔有率承接。(詳細比例由中再地震部公佈)住宅地震保險基金承擔 20 億以上部份之 180 億損失，在保費尚未完全足以支付潛在賠款前，政府為最後支柱。

第三層之 200 億又分兩部份從國際市場上獲取保障。第一部份：發行巨災債券美金一億(新台幣 34 億)。發行公司為 Formosa 再保險公司，設於開曼島。34 億資金以信託方式握存。第二部份計安排兩層超賠再保：第一層超賠再保 66 億；第二層超賠再保 100 億(其中 20%國內市場；80%國際市場)。最上層之 100 億係由政府擔保。如以年保費量 8 億 4400 萬為據，第三層之 200 億保障，其平均費用「成本」(rate on line) 為 1.8525%。

第二項 現行機制評論

- 在國際市場上安排傳統及非傳統再保保障(兩者同稱外部承保)，就現行結構來看，其安排尚可更具靈活性。
- 業務持續成長，則機制結構與外部承保之應用或須擴增或每屆續約時，有所調整與考量。當投保率之增長趨緩時，外部承保應該隨之減少，因為基金將是機制之核心樞紐。
- 巨災債券係採補償(Indemnity)基礎，其費率(Spread) 隨每季保單件數因應調整也為一項特色。開始之費率(Spread)約 3.3%。三年期間之平均 Spread 大約 4%左右。
- 巨災債券若再繼續發行，應可爭取更佳條件。費率可採固定方式而業務成長之預期則可採 Allowance 方式。美元幣值之穩定性亦應一併考慮，以避免造成台灣住宅地震保險危險承擔機制之不穩定。
- 目前之投保率固然可以接受，而 500 億事件基礎之限額也尚無急迫調高之必要。

第二節 台灣住宅地震保險的風險與成本利益分析模型

在前面章節已經知道許多再保險風險與成本效益分析之實用工具，包括財務再保險及限定再保險(FFR)所建議的解決方案。由於這些分析十分需要獲取必要資訊，而這些資訊目前對於 TREIP 仍然不十分充足。以下介紹建議分析模型內容。

第一項 風險與成本效益分析—方法論

壹、收集資料

任何風險與成本效益評估都需要以資料作為分析基礎。在前面幾個章節裡，我們已經描述一些常用基本的隨機模型以供現行分析使用。在分析資料之前我們應先清楚要這些資料的用意何在，為了建構 TREIP 模型，我們需要先輸入一些重要數據於模型裡，而 TREIP 模型通常是雙向過程的，從 TREIP 得出之新資料可以指出後續資料需求之所在並據以進行進一步之資料供應。

貳、研究範圍

理論上，一個可使用隨機商業模型作研究的特定案例之面相是受限於個人想像力與所涉及之計算上的複雜性。

一個 TREIP 的真實案例可以包含以下部份或全部的觀點：

1. 理賠

理賠情境分析對保險公司而言應該很容易組成商業模式之主要部分，因為理賠資料可以用現行累計承保風險暴露資料及第三者製作的巨災模型輕易

產生，如果保險公司想要建置一個前瞻性的商業模型，這時候使用未來累計承保風險暴露之估計值當作分析基礎會較具意義及參考性。

此類必要的前瞻性預估值可能包含某種程度之風險不確定性而此項不確定性也會變成模型的一部分。例如：假設區域風險暴露預估新台幣 10 億元，誤差率為 $\pm 5\%$ ，則風險暴露數據本身也可能形成模型輸入資料的一部份，並且對巨災模型所產生之損失量上造成後續影響效果。

2. 理賠給付型式

當損失發生後，理賠給付作業所耗用之時間對於淨現值基礎之真實理賠成本產生重要影響。

3. 原始保單內容與條款

TREIP 可能會希望變更他們提供的原保單，這些變更內容可以建置在任何模型裡，包含 TREIP 之延伸模型以承保地震與洪水險。

4. 利率/投資報酬率

利率和投資報酬率的波動通常是影響保險公司風險與成本效益評估的主要因素，而隨機模型可以包含這些波動調整的變因。

5. 行政管理費用的變動

行政管理費用有一部份可能與保費規模大小有關，但是它也可能受到其他因素而有所變動，例如法規環境改變或適任員工短缺所引起的工資上漲。

6. 再保公司的違約機率

一個隨機模型可以包含再保公司發生違約的機率，違約機率是參考公債的違約率再連結再保公司的信用評等分數一起作參考分析。

隨機模型建構的宗旨應該要能掌握各種風險來源的可能狀況，以及這些風險對於 TREIP 之影響。

參、建置隨機模型

一旦隨機模型已經建置完成並在使用，下一個步驟便是使用模型去計算不同風險衡量方法下的相對風險度。風險衡量方法之挑選，係基於 TREIP 要研究之方向或要達成之目的為何，但是會與承保能量已經耗用之機率(以及原保單理賠支出正面調降幅度)或預期向台灣政府現金攤賠的範圍等因素有關。

不管何種方式，風險衡量可以搭配有特定或沒有特定的再保險方案一起計算。對 TREIP 而言，任何風險程度的降低都可以和在特定期間(例如在 3、5 或 10 年後)結束之際相對應的預期 TREIP 基金之減少作一比較。我們再第三章等之章中看到只要保費、佣金及賠款之流量準確而透明的話，架構 FFR 模型與一般傳統再保險是沒有差別的。

第三章第三節包含許多風險衡量與風險基礎資本之詳盡探討，然而因為 TREIP (為政府贊助的法人)，任何與資本額有關的討論目前不具意義。只要 TREIP 的自有資金可以成長到達某一定水準以更貼近商業市場，那麼風險基礎資本技術就可以被拿來用於評估降低政府贊助之程度以及 TREIP 何時可以完全自立。

第二項 持續進行的模型

過去經驗告訴我們隨機模型很少是只使用一次的工具。如果我們能持續不斷地運用模型作後續資料分析比較，再來評估每次結果是否離預期水準愈來愈接近，我們可獲得之實質效益也會愈來愈彰顯。模型是“活的”，模型永遠不會被完成，模型只會持續進化提昇到更好的功能與效益。

第三節 未來住宅地震保險共保及危險承擔機制的改變

第一項 從投保率預估基金未來可能的成果

住宅地震保險危險承擔機制之投保情形，可透過研析其每月份簽單件數(自開辦起算，用34個月估計131個月，估計全程165個月)，推估結果顯示，簽單件數至2015年12月31日止，估計預測值為33.5%穿透率，無法達成50%之市場穿透率(penetration)。當然，外在因素會改變估計預測，而預測本身也存在誤差之空間。簡言之，投保件數每月份之增長，有緩慢之趨勢。

應用我們對保單件數穿透率(投保率)預測之數字，我們可進一步估計基金之成長情形。茲分A、B、C三種情況敘述如下：

A 為最佳估計(即投保率達 33.5%)

B 為高成長估計(即投保率達 50%)

C 為低成長估計(即投保率達 25%)

表十六：不計利息

	保單件數 2008/06/30	保單件數 2015/12/31	層數(指保險費)		備考 500 億能量 佔 2008/06/30 危險單位之%
			第一層	第二層	
			額滿日期 (20 億)	額滿日期 (180 億)	
最佳	1,836,774	2,549,090	2003/04/30	20013/06/30	2.0052%
中等	2,267,836	3,800,000	2007/12/31	2011/12/31	1.6241%
最低	1,604,967	1,900,000	2008/07/31	2014/12/31	2.2948%

表十七：按年利率 1.5%複利計算

	2008/06/30 保單件數	2015/12/31 保單件數	第一層 20 億 額滿日期	第二層 180 億 額滿日期	500 億佔 2008/06/30 Exposure 之%
最佳	1,836,774	2,549,090	2003/04/30	20013/06/30	2.0052%
中等	2,267,836	3,800,000	2007/12/31	2011/12/31	1.6241%
最低	1,604,967	1,900,000	2008/07/31	2014/12/31	2.2948%

註：最高最低估計兩者日期之差指第二層額滿。

從我們分析三項情境之設定，差異其實頗大。但第二層 180 億之額滿，其時間差異僅 43 個月。在三種情況下，到 2015 年 12 月 31 日，第二層在無賠款之情下，均可額滿。在無賠款情況下，第一層之 17% 保費攤派額似乎可以考慮調降。在我們最佳假設情況下(投保率 33.5%)，到 2011 年 4 月 30 日，第一層將可二倍額滿。屆時其攤派保費應可用以支持第二及最上層。當然，第一層 17% 之攤派款也有其行政業務費用，於考慮調降之同時也應一併考量。

第二項 從現有結構分析未來可能面臨的情況

原 500 億事件基礎之限額，於現階段，不建議調整。惟就長中期觀點言，鑑於損失如果超過限額，受災保戶按比例受償，這並不符合提供受災戶原本最基本之 120 萬元保障之美意，且會損及地震基金之名譽，故俟基金茁壯後，視風險評估之結果再行調增。原保險 120 萬元保額之保障係以重置成本為基礎以及標的之包括動產也可併通貨膨脹等因素考慮調增。目前，倘房屋之重置成本大於 120 萬元而房東願意投保二個以上之地震險保障，建議可以考慮開放(無複保險問題)。

茲就原有結構分析如下：

第一層：按 17% 保費之分配，20 億之責任根據分析，2008 年此層將可自給自足。屆時，機制結構調整，此層可考慮增加。

第二層：目前所分配保費距 180 億尚遠。當真正有 180 億賠款需要時，唯一可以安慰者係政府作後盾。但存在之問題留在原地。現階段此層並無前置費用(Up front cost)，也無借款利息。所以與傳統再保保障之費率(Rate on line)比較起來，如果現況為有意之安排，則成本撙節不少。

在此特別就此層進一步分析：

茲假設有賠款(超過 180 億)400 億時，則

第二層賠款 180 億

第二層現行保費 17 億

第三層之復效保費 約 2.6 億

所以基金所需成本為 165.6 億

年利率假定 5%，計需利息 8.28 億

恢復原狀之本金利息 8.28

貸款所需年成本 16.56 億

根據計算，基金所需成本到 2007 年，都還會是大於其收取之保費。換言之，有一段期間會有赤字情況。其實，真正情況可能更壞，因為一旦發生賠款，第三層所需之再保費也會增加。因此，基金所應考慮者應為如何商業化、自給自足以減輕本身之責任，而非永遠為是政府或基金本身之一項負擔。

第二層購買再保險保障，其再保之攤賠款可用以支應第三層以上再保復效所需之再保費以及貸款所需支付之頭期款(若有貸款之情形)。就我們之例子而言，36 億之再保攤賠款足以支應兩年計 16.56 億之支付款及第三層復效保費之 2.6 億。如此安排，在發生賠款後，基金現金流量不會發生問題，且有成長空間。此項再保安排所需之成本，視起賠點多少而定。我們估計，大概在 1 億 4 到 2 億 1 之間。就現況而言，當然為一項新負擔。為擲節其成本，第三層以上之再保可以考慮不復效或不加繳保費復效之保障。另外，我們關切，萬一兩個 200 億以上之損失短期內發生，第三層之再保費將調增，而第二層之貸款額將可能被縮減，貸款之費用也會增加。

第三項 未來可能的解決方案

壹、尋求 Back Up Coverage

基於前面所述，基金可找尋(Option Cover)亦即所謂之 Back Up Coverage。當第一次大額損失發生時，本項保障立即生效。其所需再保費須事先約定，以可接受為宜。而如此安排所需之前置費用極其有限。通常為全額再保費之 10%。就以 180 億 XL 20 億之保障來看，大概須 9000 萬。一次大賠款發生後，本項保障所應支付之再保費，在上述二層購買再保保障之際，即應歸劃在其承保範圍之內。

貳、巨災債券匯率保障

第三層現存之問題為巨災債券與再保保障之匯率差額所生之保障間隙。解決之道，我們建議，再保之安排採「Difference between」基礎。例如若美金 1 億等於新台幣 30.8 億，則 66 億 XL 34 億+200 億之超賠就發生 3 億 2 之保障間隙。

其實相同保障額度之傳統再保方式應可較便。不過，我們也承認發行巨災債券對台灣住宅地震保險危險機制，及台灣市場而言將會具有名聲。就保障言，也是在傳統市場外另闢管道。就巨災債券市場言，其成本趨向便宜。

參、將財務再保險/限定再保險導入住宅地震保險機制

前面章節針對財務再保險/限定再保險所提的法律與會計監理的建議，如能被落實，則將財務再保險/限定再保險導入住宅地震保險機制是可行的方案。從技術面言，財務再保險/限定再保險之安排，再保險人通常僅承負 10%~35% 之保險風險 (Exposure)，風險轉嫁可能為 10%+ 且有極高之盈餘佣金 (Profit Commission)。

比例財務再保、巨災超賠財務再保、累積超賠財務再保，一如其他保險商品，財務再保之設計亦在分散損失。倘損失未發生，則日後以盈餘佣金方式 (通常 90% 以上) 退還被再保險人。此類交易之另一重要性質即在於他們承認貨幣之時間價值，而再保險人也承認所收被再保人之再保費大部份僅為信託性質，日後終將計息退回被再險人之事實。

TREIP 基金倘購買此類無息之保障，必將受益。TREIP 可就所收保費安排財務再保。再保費大部份以信託方式支付。有賠款則獲得賠款 (安排時原則認定賠款不致於發生)，無賠款發生則獲得盈餘佣金。再保險人也賺錢，如果賠款未發生或於契約期末才發生或雖然發生但未耗盡合約限額 (非全損)。設若巨災超賠層費率為賠償額之 10%，則 9 年後所付保費總數加計複利利息即可達所購買保障之額度。9 年後，保費可以退還或再購買更高額之保障。萬一在契約初期發生賠款，則契約可視同銀行貸款契約。其退還數額僅為該貸款 (80-90%) 之某一百分比 (%) 需償還，亦即有 10-20% 風險移轉。

Chapter Four: Cases on Financial Reinsurance/Finite Reinsurance - Foreign Countries

Introduction

At the time of this report, some 38 companies have received subpoenas and / or requests for information relating to finite reinsurance transactions. These requests had been addressed not only to insurance and reinsurance companies and they are brokers, but also accounting firms and in some cases individuals.

Companies that we are aware of who have received from such requests can be listed as follow:

Ace Ltd	CNA Financial
ACE Tempest Re	Cologne Re
Acordia Re	Deloitte & Touche
AIG	E&S Reinsurers Ltd
Alea London Ltd	Fairfax Financial Holdings
AXA Re	Fairmont Specialty Group
Benfield Re	Fortress Re
Bristol Holdings West, Inc	General Electric Co
Chubb Corporation	General Re
Chubb Atlantic Reinsurance Specialist Ltd	Guy Carpenter
Hannover Re	Platinum Underwriters Holdings
Jardine Sayer	PricewaterhouseCoopers
MBIA	Renaissance Re
Merrill Lynch	St Paul Travelers
Morgan Stanley	Swiss Re
Munich Re	Swiss Re America
National Indemnity Company of the South	Trans Atlantic Re
National Union Fire Insurance Company	XL Capital
Partner Reinsurance Company	Zurich Financial Services
Philadelphia Indemnity	

The actions that have been brought against these entities can be broadly categorised under two headings - government actions and private (commercial) lawsuits. As might perhaps be expected, the bulk of the actions in both categories has taken place in the United States, but a number of significant cases have been heard in the international market. A brief description of some of the more interesting cases follows.

Case on FFR – Europe & North America

HIH Insurance Limited (HIH)

This case has been widely reported owing to its background has Australia's largest corporate failure. HIH was placed into receivership in March 2001, and the Owens Commission was set up thereafter in order to discover the circumstances behind this collapse. The commission concluded, inter alia, that HIH's use of reinsurance had been "audacious" and there had been:

- no real risk transfer in a number of reinsurance transactions
- use of side letters and agreements
- backdating of insurance documentation
- unrealistic triggers of cover

and that the principal purpose of the transactions identified was to conceal previous under reserving and consequent overstatement of profits.

The investigation resulted in some A\$300m being returned to the liquidator by way of cancellation of between 10 and 15 reinsurance treaties, although it is not clear to what extent the monies recovered were as a result of the commutation of those treaties as opposed to their unwinding.

Brightpoint

Brightpoint was a US mobile phone distributor, who purchased a combined policy from AIG in 1988 which enabled it to reduce a one-off charge relating to a loss sustained in its UK division. It announced in October 1998 that it would recognise a \$13m to 18m charge in its fourth-quarter accounts arising out of these losses, and by December of that year the losses had allegedly grown to \$29m.

The feature of the Brightpoint policy which caught the attention of the regulators was the fact that it was backdated by some two months and covered prospective losses of almost every description in two sections. The effect of the policy was to enable Brightpoint to record an insurance receivable of \$11.9m, at a cost of \$15m, payable over a three-year period. In addition, there was an alleged oral understanding to refund excess premiums and there was no experience account. The SEC alleged that there was no transfer of risk under this policy.

In September 2003 AIG paid \$10 million to settle civil charges which were brought against it by the SEC in connection with this transaction. What is more significant however is that during the course of the Brightpoint investigation the SEC enquiry found that AIG had helped another company, PNC Financial Corporation, to create a number of special purpose vehicles which had been designed to remove some \$760 million of underperforming loans and volatile venture capital investments off the balance sheet of that company. This investigation culminated in November 2004, when AIG agreed to pay \$126 million to settle complaints by the SEC that these products had the intentional effect of engineering the financial

statements of these two companies, rather than providing risk transfer.

ROA

Richmond Virginia-based Reciprocal of America was placed in receivership in January 2003, and went into liquidation in June of that year. Regulators filed five class actions, which included two brought by the receivers, alleging inter alia that Berkshire Hathaway's subsidiary General Re was complicit in the demise of the company by the issue of a side letter and retroactive amendments to reinsurance agreements modifying coverage limits which essentially shifted the liability back to the Reciprocal.

The actions also focus on allegations that there was a protracted conspiracy among the company's management and third parties to conceal its financial difficulties, and that reinsurers knew that the Reciprocal was not properly accounting for its reinsurance agreements and that there was no true risk transfer.

Other causes of action in this case include fraud, conspiracy and violation of the consumer protection laws.

There were a number of issues that were brought to light as a result of the investigations, which ultimately culminated in a five-year prison sentence for the chief executive and one of the senior vice presidents of the company. General Re's role in the affair seems to have related to the provision of fronting capacity for an offshore captive, First Virginia Reinsurance Ltd, which was controlled by Reciprocal group officers. Gen Re commuted its contracts in 2002, [finish off]

Converium

The Swiss insurance group Converium announced on May 28 this year that it was restating its annual accounts from 1998 to 2004 inclusive and each of its quarterly accounts from 31 March 2003 to June 30 2005.

It said that the restatement was necessary because of a series of transactions entered into by its North American subsidiary Zurich Reinsurance (North America) Inc, now Converium Reinsurance North America. The contracts in question comprised two assumed contracts with MBIA, the New Jersey-based Financial Guaranty insurer, a quota share and an excess of loss, together with a retrocession of what was described as "substantially all of the liability" under these two contracts to third parties.

The contracts were entered into in 1998 in order to offset \$170m loss that it had sustained on \$265m bonds issued by the Alleghany Health Education and Research Foundation which were issued by MBIA. Under the two agreements, Converium reimbursed MBIA for \$170m., in exchange for which MBIA agreed to cede \$101m of business to Converium. In addition to this, however, it appears that Converium subsequently retroceded the liability to Axa, who in turn had an oral agreement from MBIA that they themselves would become Axa's retrocedant for this business (i.e. they would take it back themselves) by 2005.

The restatement appears to have arisen out of the investigations by the SEC into MBIA, and as a result of this a shareholder class action has risen against the company alleging a series of accounting improprieties, and violation of the securities exchange act. In the interim, MBIA has restated its own results for the past seven years reducing its profits by some \$54 million.

Renaissance Re

Similarly Renaissance Re restated its earnings in February 2005, as a result of what it described as "accounting errors associated with reinsurance ceded by the company". This restatement resulted in an increase of \$20.6m in the 2001 income, a decrease of \$21.9m in 2002 and an increase in 1.3m 2003 could sleep

AIG

The investigation by the New York Attorney General Eliot Spitzer into the business activities of AIG in recent years has attracted a great deal of media interest. The focus has been on the accounting treatment of a number of finite reinsurance deals, the most significant of which was the \$500 million transaction between AIG and Cologne Re in Dublin. The dispute has so far claims the scalps of AIG's former chairman Hank Greenberg, its former chief financial officer Howard Smith and Cologne Re (Dublin)'s chief executive John Houldsworth. There are a number of other issues which are outside the scope of this report arising from these investigations, but the salient features of the reinsurance transactions are as follows.

National Union, an AIG subsidiary, entered into two contracts of reinsurance with Cologne Re of Dublin, a subsidiary of General Reinsurance Corporation, under the terms of which, on the face of it, Cologne Re was to pay \$500m to AIG, in return for which AIG would provide \$600m of cover, and in the process allowing it to show \$500m in reserves.

It can be seen from the copy slip that is attached to this report that 98% of the premium for this transaction was held in an experience account, and the \$10m that Cologne Re did pay was subsequently returned, along with the \$5m fee that they earned for the transaction, by means of a further series of transactions involving bogus loans by clients of AIG's private bank in Zurich to a Barbados based subsidiary of the group. In March 2005 AIG admitted that the "Gen Re transaction documentation was improper and, in light of lack of evidence of risk transfer, this transaction should not have been recorded as reinsurance". What is striking about this transaction, apart from its obvious lack of substance, is that the roles of the parties appear to have been reversed – one would normally expect a professional reinsurer such as Cologne Re to be reinsuring a primary insurer such as AIG, not the other way around, and it is perhaps surprising that the individuals concerned in the transaction did not put more thought into disguising this apparent anomaly.

Chiyoda [RA to expand]

Chiyoda Marine and Fire (Europe) Ltd fell foul of the UK regulatory authorities by the purchase of a stop loss to protect their 1999 result. The contract was actually purchased in 2000, but the signature on the Covernote was backdated to June 1999, as was the accompanying letter that was sent to the company's Tokyo parent.

A further contract was bought from the Bermudan reinsurer Partner Re, who insisted on a guarantee that the losses would be paid back in full, this guarantee was signed by the company but not revealed to its auditors. The transaction came to light when the company merged with Dai Tokyo, who reported that concern to the authorities.

The premium for the Partner re's contract was repaid by two further contracts one with Ace in Bermuda the other with Cologne re in Dublin purchased in 2001.

USA

A letter dated 29 March 2005 from Howard Mills, the then acting Superintendent of Insurance of the New York State insurance Department announced as follows:

“STATUTORY REFERENCE: Insurance Law §§ 309, 310

The Department is concerned about the improper use of finite reinsurance to manipulate financial reporting results. While the Department recognizes there are legitimate uses of finite reinsurance (such as the transfer of interest rate risk and of timing risk), these transactions can distort the underwriting and surplus positions of insurers entering into them when there is no actual transfer of risk or the transaction is accounted for improperly.

Therefore the Department will now require as part of its examinations of insurers, the Chief Executive Officer to attest, under penalty of perjury, that with respect to cessions under any reinsurance contract, that:

(I) there are no separate written or oral agreements that would under any circumstances, reduce, limit, mitigate or otherwise affect any actual or potential loss to the parties under the reinsurance contract; and

(II) for each such reinsurance contract, the reporting entity has an underwriting file documenting the economic intent of the transaction and the risk transfer analysis evidencing the proper accounting treatment, which is available for review.

In addition, the Department will require increased disclosure of finite risk transactions in the annual statement, including the attestation described above. ”

Four months later, on 3 August 2005, the department issued a supplementary letter stating that

"...the Blanks Working Group of the National Association of Insurance Commissioners (NAIC) has adopted additional disclosures regarding finite reinsurance for the annual statement of property/casualty insurers, including a CEO and CFO attestation. These additional requirements will be effective for the filing of the 2005 annual statement for all authorized property/casualty insurers in the United States.

In conjunction with the formal adoption by the NAIC of these new national requirements and in the interest of uniformity, the Department will discontinue the requirement for the Circular Letter 8 (2005) attestation for property/casualty insurers. However, until such time as the filing of the 2005 annual statements, the attestations will be required on examination of property/casualty insurers."

This signalled a major change in approach by the US regulators to the reporting requirements for transactions of this nature, and is indicative of how seriously they were taking the ramifications of the reported cases discussed above.

Perhaps the most interesting aspect of this however is that there has been no clear definition of what exactly constitutes finite reinsurance. The approach so far has been rather to define its attributes, the intention being that the identification and reporting of such a contract is principle based and that there is no so-called "bright line" standard. The NAIC Property and Casualty Reinsurance Study Group has produced the following guidelines as to what constitutes a finite reinsurance contract for these purposes:

- A contract term longer than two years when the contract is non cancellable by the reporting entity during the contract term;
- A limited or conditional cancellation provision under which cancellation triggers an obligation by the reporting entity, or an affiliate of the reporting entity, to enter into a new reinsurance contract with the reinsurer, or an affiliate of the reinsurer;
- Retroactive reinsurance coverage;
- Aggregate stop loss contract reinsurance coverage;
- An unconditional or unilateral right by either party to commute the reinsurance contract;
- The management of the reporting entity believes that there is greater than a fifty percent (>50%) probability the reporting entity will commute the treaty;
- A provision permitting reporting of losses, or payment of losses, less frequently than on a quarterly basis (unless there is no activity during the period); or Payment schedule, accumulating retentions from multiple years or any features inherently designed to delay timing of the reimbursement to the ceding entity.
- The business or risk originated by the reporting entity or its affiliates represents greater than 50% of the entire amount of business underwritten by the assuming reinsurer; or twenty-five percent (25%) or more of the risks ceded in the contract have been retroceded back to the ceding reporting entity or its affiliates. This provision excludes approved pooling arrangements.
- Contracts are accounted for differently between generally accepted accounting principles (GAAP) and statutory accounting principles (SAP). (If so, explain how and why the contract is treated differently for GAAP and SAP.)

As noted above, these changes come into effect for the 2005 reporting period, and company Report and Accounts will be forthcoming at around the date of this report. The basic principle that will need to be adhered to it as follows:

Insurers must answer several new General Interrogatories in their annual accounts related to the use of finite reinsurance. If an insurer answers certain of the new interrogatories in the affirmative, the insurer must submit a Reinsurance Summary Supplemental Filing form (19-1) with its annual statement.

All insurers must include with their annual statement is a reinsurance attestation supplement (20-1) signed by the CEO and CFO. Corresponding revisions to the P&C annual statement instructions were adopted at the winter meeting of the NAIC in Chicago, effective for the 2006 annual statement, and are posted on the NAIC's web site for utilisation as guidance for the 2005 statement.

There are six new General Interrogatories, and a brief description of their purpose follows:

7.3

This is required only if the existing interrogatory 7.1 is answered in the affirmative. 7.1 asks "does the insurer seed risk or under a quota share contract that includes provisions reducing the reinsurer's losses below the stated quota share percentage?" (e.g. loss ratio corridors, aggregate limits, etc)

If the answer is yes, then the new interrogatory 7.3 asks the question "does the amount of reinsurance credit taken by the insurer reflect the reduction in quota share percentage caused by the loss limiting provisions?" A "no" answer to this does not (by itself) trigger a reinsurance summary supplemental filing.

9.1

This asks whether the insurer has any material reinsurance contract that is accounted for under reinsurance accounting but has finite attributes. A "yes" answer triggers the need to file a Reinsurance Summary Supplemental Filing under 9.3.

Materiality in this case is any applicable to contracts that drive a positive or negative underwriting result, or where the reported calendar year written premium or loss reserves ceded are greater than 3% of the prior year end surplus. Multiple contracts to a single reinsurer, or its affiliates, are to be aggregated for the purposes of this statement. (Only to the extent however that each of the contracts has one or more of the listed finite re attributes).

9.2

This asks whether the insurer cedes any reinsurance contract where the written premium ceded to the reinsurer represents 50% or more of the total direct and assumed written premium by the reinsurer or 25% or more of the written premium ceded to the reinsurer has been retroceded back to the insurer or its affiliates. A "yes" answer triggers the need to file a Reinsurance Summary Supplemental Filing under 9.3. There is no materiality threshold for 9.2, and an interesting aspect is that the reporting requirement puts

the onus on the company to make its inquiries by "whatever means possible" of the reinsurer, including obtaining written documentation through e.g. direct inquiry to the reinsurer.

9.4

This asks whether the insurer cedes risk under any reinsurance that is accounted for as reinsurance under SAP and a deposit under GAAP, or vice versa. Again there is no materiality threshold.

The Reinsurance Summary Supplemental Filing (19-1)

Where answers to any of 9.1, 9.2 or 9.4 have been in the affirmative, the following must be shown:

- The aggregate financial statement impact gross of all such reinsurance contracts
- For each contract, a summary of the reinsurance contract terms, including identification of the applicable INT and finite attributes that triggered the reporting.
- For each contract, a brief discussion of management's principal objectives in entering into the contract.

This reinsurance summary supplemental filing must be filed electronically. This was a requirement that was recently adopted by the bank's working group at the winter meeting, against the initial wishes of the industry, which had been pushing for hardcopy filing only.

Reinsurance Attestation Supplement (20-1)

As mentioned above, this must be signed by the CTO and CFO, and applies to the insurers ceded reinsurance contracts only, i.e. not to any assumed reinsurance. By signing this statement, the CEO and CFO are attesting, under penalty of perjury, that to the best of their knowledge and belief after diligent inquiry four factual statements are true with respect to their reinsurance ceded:

- 5 There are no separate written or oral agreements between the insurer and a reinsurer that would reduce, limit, mitigate or otherwise affect any actual or potential loss to the parties under a reinsurance contract.
- 6 For contracts entered into, renewed, or amended on or after 1/1/94, for which risk transfer is not reasonably considered to be self-evident, documentation concerning the economic intent of the transaction, and the risk transfer analysis evidencing the proper accounting treatment under SSAP 62, is available for review.
- 7 The insurer complies with all requirements of SSAP 62.
- 8 The insurer has proper controls in place to monitor the use of reinsurance and adhered to SSAP 62.

Case on FFR – Japan & Pan-Pacific

Fortress Re

Fortress Re was an underwriting agency which underwrote on the behalf of a pool of Japanese reinsurers, amongst whom were Sompo, Aioi and the now bankrupt Taisei. Fortress Re specialised in writing low level aviation reinsurance business and provided large limits to companies writing the major airlines excess of relatively modest retentions. The agency agreement entered into by the Japanese gave the management of Fortress wide powers to conduct business on their behalf, including the arrangement of reinsurance protection.

Following the terrorist attack on the World Trade Centre in September 2001, the Fortress Re pool was hit with enormous losses. An audit by PricewaterhouseCoopers was commissioned by Nissan, one of the participants at the time (Nissan subsequently merged with Yasuda to become Sompo), as a result of these losses, and it revealed an alleged long-standing pattern of fraud. The report indicated that far from being profitable during the period 1995 to 2001, as had been reported, the pool had in fact suffered losses that had amounted to some \$3.4 billion, most of which were incurred before the terrorist attacks.

It transpired that some 25% of the pool's business had been ceded to Carolina Re, a Bermuda-based reinsurer which was owned by the principals and close family of Fortress executives. During the period in question, (1984 to 2000) the company booked some \$470 million in profit, of which some \$400 million was taken out in dividends. This company subsequently became insolvent to the tune of some \$350 million and was liquidated in late 2001 by a Bermuda court

At the heart of these financial manipulations, was finite reinsurance that gave a deceptive view of the profitability of the company's aviation book and its own capital strength. It was alleged that the company's auditors, Deloitte Touche, should have forced the company to disclose the reinsurances in its financial statements, and the auditors subsequently settled their part in a case for approximately \$250 million. Sompo themselves were awarded \$1bn in damages by an arbitration panel as compensation for their share of the pool losses.

Chapter Five: The Possibility of Catastrophe Risk Transfer by Financial Reinsurance/Finite Reinsurance in Taiwan

TREIP – Analysis of Risk and Cost Benefit

Introduction

We have seen in the preceding chapters that there are a number of techniques available for analysing the risk and cost benefit of reinsurance structures, including FFR. Such analyses depend very much on having the requisite data available, which we do not currently have for TREIP. With this limitation in mind, we shall set out in this chapter the methodology we would recommend be used to analyse the potential risk and cost benefits available to TREIP from any reinsurance structure.

Analysis of Risk and Cost Benefit – Methodology

Data Gathering

Any analysis of the risk and cost benefit of reinsurance relies on data. In earlier chapters we have built some very basic stochastic models in order to highlight the points we have been trying to make, often using data we have made-up specifically for the purpose in mind. To build a model for TREIP would require significant data input from TREIP and often a two-way process whereby new data from TREIP would highlight further data requirements (or questions to be answered) and thus initiate further provision of data.

Areas to be Studied

In theory the aspects of a particular case which can be studied in a stochastic business model are limited only by one's imagination and the computational complexity involved.

A real study for TREIP could include some or all of the following aspects:

- Claims

Claim scenarios should obviously form a major part of any business model for an insurance entity. Claims data can easily be produced using current aggregate exposure information and a third party cat model however, if one is building a forward-looking business model, it would be of more interest and benefit to use an estimate of future aggregate exposures as the input.

Such forward estimates by necessity would include degrees of uncertainty and this uncertainty could itself form part of any model. For example, if a regional exposure is estimated as TWD 1bn with an error of +/- 5% then the exposure figure could itself form a model input with consequent effect on the quantum of losses produced from the catastrophe model.

- Claim Settlement Pattern

The time taken for claim payments to be made once a loss has occurred can have a major impact on the real cost of claims in net present value terms.

- Original Policy Terms and Conditions

TREIP may wish to consider changes in the original policy they offer – these changes could be built into any model. This could also include the extension of TREIP to cover Typhoon and Flood.

- Interest Rates / Investment Returns

Fluctuations in interest rates and investment returns are often a major exposure to insurance companies, a stochastic model can accommodate these.

- Changes in Administration Costs

Administration costs may be partly correlated with premium volume but may also be influenced by many other factors such as changes in the regulatory environment or wage inflation caused by a shortage of qualified staff.

- Reinsurer Defaults

A stochastic model can include probabilities for reinsurer defaults based on the default rates for bonds corresponding to the security ratings of each reinsurer on the panel.

The objective of the model should be to capture all the various sources of risk to which the success of TREIP is exposed.

Once the Model is Constructed

Once a stochastic model is in place, the next step would be to use the model to calculate comparative risk measure statistics. The risk measure chosen would depend on what TREIP were trying to achieve or study, but could be related to the probability of the capacity being exhausted (and the original policy payouts being pro-rated down) or on the expected extent of cash calls to the Taiwanese Government.

Either way, the risk measure could be calculated with and without a particular reinsurance proposal. Any reduction in the level of risk to TREIP could then be compared with the corresponding reduction in the expected level of TREIP's funds at the end of a particular period (such as after 3, 5 or 10 years). We have seen in Chapter 15 that as long as the flows of premium, commission and claims can be accurately and transparently defined, the modelling of FFR is no different to that of traditional reinsurance.

Chapter 15 contains more detailed discussion of risk measures and risk based capital, however since

TREIP is a government-sponsored entity any discussion of capital is currently meaningless. Once TREIP's own funds have grown to a level more in line with the commercial market, risk based capital techniques could be used to assess the reducing level of government backing required or, indeed, to define a time when TREIP can stand alone.

Conclusion - The Ongoing Model

Experience tells us that stochastic modelling is very rarely a one-off exercise. The real benefit comes from on-going analysis to provide further comparative data and to assess performance compared to expectation. Models are also often "living" in nature – they are never finished, rather they continue to evolve.