Analysis of the US Economic Impact of Bermuda Based Insurers and Reinsurers

Conducted by GSP Consulting Corp

November 2007

"*Floridians are pummeled on a regular basis by hurricanes. We know full well the support our insurance market receives from Bermuda insurers and reinsurers. These companies supplied critically important capital to our region when we were hit with the terrible storms of 2005 -- Katrina, Rita and Wilma. In Florida, they alone paid enough to rebuild more than 12,000 homes. We need these carriers and their capacity – they write business other insurers don't want to write*."

Rep. Don Brown, Chair, Insurance Committee, State Representative, Florida House of Representatives

"American jobs supported by non US companies that invest heavily in the United States are often overlooked. *Bermuda-based insurers and reinsurers directly employ nearly 10,000 people in the United States. In addition to jobs, the insurance claims payments that come from these companies – an estimated $17 billion in 2005 for catastrophic loss claims alone --also make an important contribution to the U.S. economy*."

Todd M. Malan, President & CEO, Organization for International Investment (OFII), an association of U.S. subsidiaries of companies headquartered abroad.

"*Louisiana needs insurance capital to protect against future hurricane losses. Bermuda's reinsurers paid approximately $3.9 billion in Louisiana residential property losses from Hurricane Katrina. In addition, their commercial property and business interruption claim payments contributed about $4.7 billion to help return our employees to work and rebuild our economy. Coastal states are dependent on capital from all over the world to protect our people – Bermuda insurers provide a big share of that needed capital.*"

Jim Donelon, Commissioner of Insurance, State of Louisiana

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Executive Summary

Emergencies, Farms, Jobs

The Bermuda Insurance and Reinsurance industry plays a critical role in the United States economy. Billions in claims paid to home owners and small businesses have helped stabilize the economies of regions hit by natural disasters over the past 20 years. These Bermuda-backed claims payments have moderated the overall impact of catastrophic property losses and helped Americans rebuild in the wake of hurricanes, earthquakes and other natural disasters. Bermuda insurers and reinsurers also play an active role in the economic health of our nation on an on-going basis, not just in emergencies. Nearly 20 companies incorporated in Bermuda provide insurance or reinsurance coverage for farmers across the United States, affording choice and enhancing the availability of crop insurance to millions of American farmers. In addition, Bermuda carriers are a major provider of jobs, as the companies generate a significant additional volume of commercial and business activity throughout the U.S.

In the following pages, this study will explore the impact of Bermuda firms on the US economy and discuss some key facts, including:

- **Bermuda firms employ 9,600 Americans directly in the United States and indirectly generate an additional 95,045 jobs**
- **Paid $17 billion in property claims in 2005 for hurricane damage, representing 25% of the total property damages covered**
- Bermuda insurers provided enough funds to replace 87,042 homes (based on median home values), – 45,419 homes in Louisiana and more than 24,000 homes in Mississippi
- Following Hurricane Katrina, the claims paid by Bermuda insurers helped 14,170 people return to work as employment recovered in 2006; 9,564 of these workers were in Louisiana and 4,607 were in Mississippi

- **Protect (via reinsurance) four out of 10 US homes and businesses with property coverage**
- **Provide 40% of the hurricane and earthquake reinsurance coverage in the US**
- **Account for 26% of the total U.S. reinsurance market.**
- **Generate as much as $96B of the gross output for the U.S. insurance market**
- **Write 57% of the total US crop insurance and reinsurance market, supporting an estimated:**
    - 26,731 farms in Arkansas
    - 17,347 farms in Colorado
    - 33,556 farms in Indiana
    - 50,619 farms in Iowa
    - 36,684 farms in Kansas
    - 15,925 farms in Montana
    - 17,233 farms in North Dakota

Background

The Association of Bermuda Insurers and Reinsurers (ABIR) contracted with GSP Consulting Corporation, based in Pittsburgh, Pennsylvania to review the economic impact that its members have on the economy of the United States. Members of ABIR provide significant benefit to the United States economy and this report assesses the breadth and depth of that impact.

General Facts

Insurance plays a key role in the economy of the United States. In addition to a stable source of employment, the industry provides products and services that protect businesses and individuals from catastrophic losses. These risk management products directly support the growth of US businesses, most of which could not operate without insurance coverage. The assets of the insurance firm not only serve this risk mitigation and stabilization function, their access to low cost capital positions them to provide US business owners with attractive financing to further enhance their long-term growth strategies.

Bermuda firms also represent an active segment of the reinsurance coverage in the US. Reinsurance helps primary insurers diversify the risk of the policies they have written and provides additional capital to support the market during periods of heavy loss when businesses and consumers might otherwise lose access to affordable coverage. According to data from the Reinsurance Association of America (RAA), Bermuda domiciled firms accounted for 28% of the total US reinsurance market in 2006. In addition, Bermuda insurers and reinsurers lead the market for coverage from hurricanes and earthquakes. These innovative providers account for as much as 40% of the U.S. market. This study has found that as many as four out of 10 homes and businesses rely on Bermuda firms for their insurance protection, a major economic contribution that may be overlooked as reinsurers stand behind the primary insurers.

Table 1: Bermuda's role in reinsurance

Total U.S. Premiums Ceded ($ In Millions)						
Domicile	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Bermuda	$ 14,955	$ 16,018	$ 21,266	$ 24,826	$ 27,498	$ 27,456
United States	$ 41,629	$ 48,036	$ 47,496	$ 42,685	$ 42,404	$ 42,948
All Others	$ 22,362	$ 30,151	$ 32,243	$ 29,096	$ 34,564	$ 27,228
GRAND TOTAL	$ 78,946	$ 94,205	$101,005	$ 96,607	$104,466	$ 97,632

Source: Reinsurance Association of America

Insurance is an integral part of the lives of North Americans. The risk management *product* that it produces is directly or indirectly consumed by virtually everyone; helping homeowners and automobile owners pay for minor repairs as well as marshalling billions of dollars to help rebuild neighborhoods leveled by a devastating natural catastrophe. Here's how Bermuda insurers and reinsurers are playing an increasingly important role in the large, dynamic growth sector of insurance.

- Insurance is the 12th largest industry in the United States, ranked by Gross Output for 2005.
- Insurance is a fast growing industry; gross output grew 29% from $187.9B in 1990 to $593B in 2005.
- Bermuda firms accounted for $15.5B of the gross output in 2002 and $28.1B in 2005 – but given their role in reinsurance and property and catastrophe lines, they may account for as much as $96B of the gross output for the U.S. insurance market.[1]

Gross Output by Industry [Billions of dollars]	2002	2003	2004	2005
U.S. Insurance carriers and related activities	$ 458.9	$ 498.7	$ 569.6	$ 593.0
Bermuda share of Net Premiums	3.4%	4.4%	4.7%	4.7%
Bermuda share of U.S. Insurance GDP	$ 15.5	$ 22.0	$ 26.8	$ 28.1

Source: Bureau of Economic Analysis, Gross-Domestic-Product-by-Industry Accounts, Insurance Information Institute and IBNR Weekly, #26, Vol. XIV, June 28, 2007. Dowling and Partners.[2]

Given the scale of Bermuda's role in the reinsurance and property catastrophe markets, this estimate does not begin to capture the scale of the contribution of Bermuda insurer and reinsurers to U.S. economic output. The specialization of Bermuda firms in reinsurance is a critical piece in the overall interlocking system of risk management that sustains economic growth in the world today. Insurance and reinsurance are not static tools but rather integral parts of a flexible system that has allowed the U.S. economy to

[1] The larger estimate is based on Bermuda's 40% share of the property reinsurance catastrophe market related to the total insurance market. The Gross Output estimates do not break out the role of property and life insurance, but it is likely that property catastrophe accounts for an even larger share of Gross Output than its share of premiums. Life insurance provides compensation but it does not restore economic function in the manner of property catastrophe insurance. As a result the $28B and the $96B figures for gross output represent extremely conservative estimates.

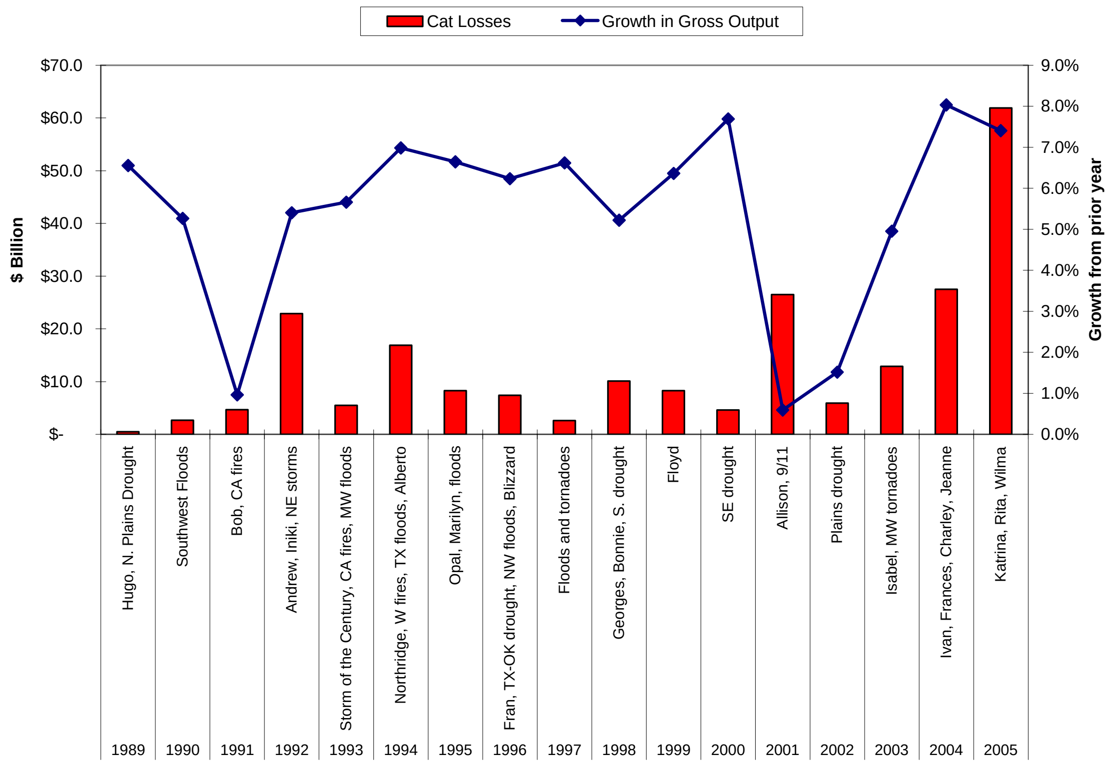
[2] Gross output for the Bermuda insurers was based on estimates of Net Premiums Written in the United States from the Insurance Information Institute and Net Premiums Written by Bermuda firms tracked by Dowling and Partners. Bermuda's share of NPW was used to estimate their share of Gross Output of the U.S. Insurance industry.

recover from significant catastrophes over the past few years with nominal economic disruption. The insurance industry is a primary economic mixer in the flow of capital that sustains our economy. In the absence of major events, insurance functions more like the financial sector, but in times of crisis, the insurance industry fulfills its function to assist with recovery. Experts predict that worse storms and more expensive natural disasters are likely to occur in the near future. These predictions should cause the insurance industry, its stakeholders, and regulators to cautiously proceed with changes to existing programs or structures.

Stability and Growth

The insurance industry in general and reinsurance in particular has helped to stabilize the US economy in the wake of natural disasters and other external disruptions.[3] From 1989 to 2005, catastrophes in the U.S. caused more than $450 billion in property losses. The overall economy, however, maintained positive yearly performance and has maintained positive year over year growth through that entire period (Figure 1).

Figure 1: Catastrophes and Economic Output, 1989-2005



The insurance industry has helped to ensure that the economy continues despite these interruptions (Figure 1). The economic downturn of the early 1990s was due to economic factors and not hurricanes Hugo and Bob, the droughts, floods or the Northridge earthquake. Throughout the rest of the decade, insurance absorbed the damages to keep growth on track. It was not until 2001 that the terrorist strikes of 9/11 and other economic forces combined to derail the economy. As growth returned, the

[3] A disruption is economically external when it involves a natural disaster or other non-economic event that creates economic consequences. Alternatively, an economically internal disruption is a credit crisis or a market collapse.

worst two years of catastrophes, 2004-2005, generated only a small decline in output growth. The global insurance industry, backed by reinsurance, provided the capital to keep the economy on track. The 2005 Hurricane season was unprecedented in the sheer size of its impact. More than $66 billion in insured loss was sustained in several states. The payment of these claims and their ability to allow people to begin to rebuild and get back to their lives moderated much of the potential economic damage. **In particular, Bermuda firms were responsible for paying $17 billion in claims, or more than 25% of the total property damage covered, a significant portion of the insurance safety net and an equally important contributor to stability in the US economy.**

The U.S. economy is so large that it can absorb a significant amount of localized disruption. However, if we examine economic growth and natural catastrophes in specific states, the impact of the catastrophes is more apparent, but so is the resiliency of the economy (Table 2). There are times when these events seem to suppress growth, such the tornados and drought that struck Arkansas in 1999-2001. At other times we see only the effect of economic cycles, such as California's 1% growth during the technology fizzle in 2000-2001, down from 9% in 1999. There are also cases where economic cycles and natural disasters coincide: Louisiana and Mississippi suffered drought and hurricanes from 2000-2002 that coincided with the end of the IT boom and the post-9/11 recession.

Table 2: Catastrophes and State Economic Growth

Annual Percent Change in Gross Domestic Product							
State	1999-2000	Recession		2002-2003	2003-2004	2004-2005	2005-2006
		2000-2001	2001-2002				
United States	6%	3%	3%	5%	7%	6%	6%
Alabama	2%	4% Drought	4%	5%	9%	7%	6%, Katrina, Wilma, Rita
Arkansas	2% Tornadoes	3% Drought	5%	5%	8%	6%	6% Katrina, Wilma, Rita
California	9%	1%	3%	5% Fires	8% Fires	7%	7%
Florida	6%	6% Drought	5% Allison	7%	9%	10% Charley, Ivan, Jeanne, Frances	7% Katrina, Wilma, Rita
Louisiana	6%	2% Drought	0% Allison	9%	11%	11% Ivan	7% Katrina, Wilma, Rita
Mississippi	2%	3% Drought	3% Allison	6%	6%	4% Ivan	6% Katrina, Wilma, Rita
New York	6% Floyd	4%	2% Sep 11	3%	7% Isabel	6%	6%

On the whole, however, these natural disasters have done very little to disrupt even the states that were most directly affected because of the inherent creativity of the U.S. economy, including the availability of a healthy insurance safety net.

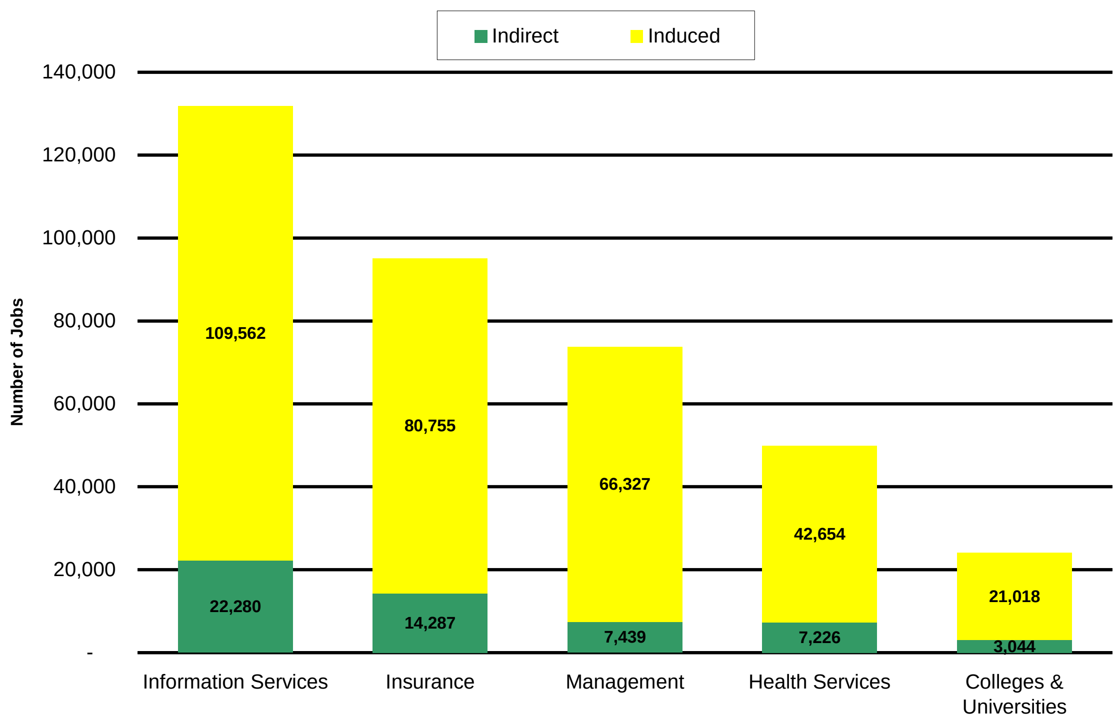
A natural disaster typically has two adverse economic impacts: it destroys property and disrupts the flow of income. The effect of property destruction has a longer term effect, while the flow of income is a short-term effect. During the recovery, the flow of income will be boosted through the clean up and repair activities. The economic effect of property losses is to increase both the consumption of fixed capital and business transfer payments (primarily from insurance). Uninsured losses will further increase the consumption of fixed capital as there will be less business transfer payments to compensate.

What our analysis has shown is that reinsurance provides economic stabilization in times where catastrophic events can seem to overwhelm the system. For example, while some regions are still overcoming the impacts of Hurricane Katrina – it is hard to imagine how much more long-lasting the destruction would have been if the Bermuda Insurance and Reinsurance industry was not there to pay out over $17 billion in claims. The funds from reinsurers continue to help victims of this and other catastrophic events. Families and business owners have literally rebuilt their lives and their livelihood.

What 9,600 U.S. Insurance Jobs Mean

Insurers and reinsurers domiciled in Bermuda have a significant employment presence in the United States. According to ABIR's member survey, these firms employ 9,600 Americans in the United States. In states like Pennsylvania, New York, Connecticut, California and Georgia, these jobs leverage an additional 95,043 jobs in the U.S. In order to put this multiplier effect into perspective, compare the insurance industry to other service industries (Figure 2). For each industry, we assumed the direct employment of 9,600 jobs. Information services, as might be expected, has a higher multiplier and produces a total impact of more than 130,000 jobs. However, other industries that might be expected to have a larger impact than insurance, such as Management of Companies, Health Services and Colleges and Universities, all have significantly lower impact.

Figure 2: Impact of 9,600 Direct Jobs in Insurance and Other Services



Source: IMPLAN Analysis

Table 3: Top industries that supply the insurance sector

Industry	Indirect Jobs
Insurance agencies- brokerages- and related	7,209
Insurance carriers	1,118
Securities- commodity contracts- investments	1,081
Real estate	577
Funds- trusts- and other financial vehicles	352
Employment services	236
Food services and drinking places	189
Legal services	185
Nondepository credit intermediation and related a	174
Telecommunications	170
Other	2,996
TOTAL	14,287

The impact multiplier on the U.S. economy for insurance is 10.9, compared to 14.7 for information industries and only 3.5 for colleges and universities. The jobs that are sustained through this multiplier effect are distributed across the entire economy. In term of the indirect jobs – those created in the industries that supply the insurance industry – the jobs are concentrated in finance, insurance and real estate (Table 3).

Table 4: Top industries for induced jobs

Industry	Induced Jobs
State & Local Education	5,939
Food services and drinking places	5,355
State & Local Non-Education	3,157
Wholesale trade	2,540
Real estate	2,513
Employment services	2,047
Hospitals	2,037
Offices of physicians- dentists- and other health	2,023
Nursing and residential care facilities	1,451
Commercial and institutional buildings	1,426
Other	52,267
TOTAL	80,755

Because these are generally high paying industries, **the insurance sector generates a large induced effect as well across a variety of mostly service industries (Table 4)**. For definitions and methodology on direct and induced jobs see Appendix 1.

Insurance spreads, but does not eliminate risk. The American economy has thrived on risk, but it is the risk of the entrepreneur and the innovator. We are able to take such risks in part because we have the security that insurance provides from the uncertainty of natural disasters and other catastrophic events. Insurance has become an ingrained feature of economic activity. It is not an overstatement to say that you can't put up a building without insurance. In the aftermath of the terrorist attacks on the United States, many banks wouldn't lend money for new construction in major cities without the new terrorism insurance policies. Insurance cannot eliminate the risk, but it prevents risk from paralyzing the economy.

The Role of Bermuda Insurers and Reinsurers in the 2005 Hurricane Recovery

Restoring Homes

Insurers and reinsurers paid historically high claims for the damages from hurricanes Katrina, Rita and Wilma. Of that amount, Bermuda firms paid **$17 billion**, with much of that money paid through reinsurance. Residential property accounted for 43% of the estimated damages and claims from the three hurricanes. Assuming that the distribution of reinsurance follows the distribution of claims and losses, Bermuda firms provided more than $7.3 billion for residential property damage. Louisiana and Mississippi accounted for more than $5.6 billion of that total.

Table 5: Estimating Home Replacement

State	Distribution of Losses	Residential Property Claims Reimbursed by Bermuda ($M)	Median Home Value	Homes Replaced by Bermuda Firms
Alabama	2%	$ 158	$ 85,100	1,860
Arkansas	0%	$ 2	$ 72,800	27
Florida	**17%**	**$ 1,273**	**$ 105,500**	**12,067**
Georgia	0%	$ 4	$ 111,200	34
Louisiana	**53%**	**$ 3,861**	**$ 85,000**	**45,419**
Mississippi	**24%**	**$ 1,724**	**$ 71,400**	**24,139**
Tennessee	0%	$ 10	$ 93,000	105
Texas	4%	$ 280	$ 82,500	3,390
Grand Total	**100%**	**$ 7,311**	**NA**	**87,042**

Source: Insurance Information Institute

Based on median home values, Bermuda insurance providers provided enough funds to replace 87,042 homes – 45,419 homes in Louisiana and more than 24,000 homes in Mississippi alone. There are an estimated 275,000 homes that need to be replaced as a result of the storms. Insurers and reinsurers from Bermuda are providing funds to meet 32% of that need.[4]

Restoring Livelihood

One of the most devastating economic blows of Katrina was to throw 167,377 people out of work.[5] This amount peaked at 167,583 in November 2005. Although, unemployment abated to levels below historical averages, by February, 2006, the loss of wages, spending and investment remained traumatic. For the purposes of this report, we have focused on the initial displacement of people and businesses from September to December of 2005 to provide conservative estimates of the social and economic impact of the storm.

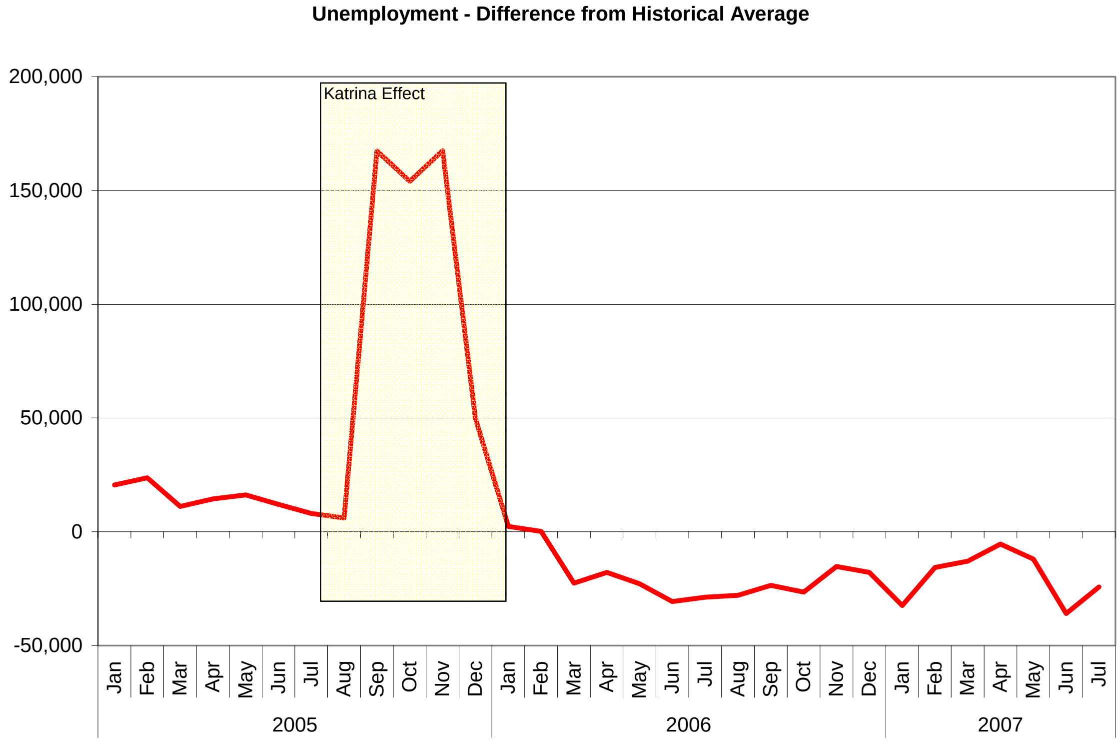
Table 6: Monthly Unemployment in Louisiana and Mississippi

Month	Actual Unemployment	Historical Average for Month	Variance from Historical Average
Sep-05	350,846	183,470	167,377
Oct-05	338,204	184,082	154,123
Nov-05	342,042	174,459	167,583
Dec-05	222,779	172,996	49,783

[4] [4] Estimates are based on the distribution of claims and losses data from the PCS Division of ISO. This distribution of claims data most likely undercounts the property insurance contribution from Bermuda insurers and reinsurers, which are more heavily weighted to property lines than other insurers. The cost of rebuilding is often higher than the median value of the homes, which would suggest that these estimates inflate the number of homes replaced. However, the median home value includes the value of the land, which would not be included in the cost of rebuilding which would suggest that these estimates undercount the homes replaces. There would some variation in the rebuilding costs for stand-alone housing versus condominiums. Furthermore, these estimates assume that no fraud occurs and that everyone actually uses the funds for the intended purpose of rebuilding.

[5] Based on the difference from the historical average presented in Table 6.

Figure 3: Katrina Impact on Unemployment in Louisiana and Mississippi



The impact of this unemployment on the economy was a minimum of 538,865 lost "person months" of work. This amount does not even attempt to account for the total amount of loss of life or disruption of business that represent the true impact of the catastrophe. However it is still important to provide estimate of the magnitude of the effect from this disaster. Using a conservative assumption of average wages of $5.50 per hour, Katrina wiped out more than $463 million in wages for residents of Louisiana and Mississippi.

Table 7: 2005 Hurricane-Related Unemployment in LA & MS

	Louisiana	Mississippi	Total
Person Months of Lost Work[6]	375,249	163,616	538,865
Value of Lost Wages (@ $5.5/hour)	$ 322,479,609	$ 140,607,178	$ 463,086,787

[6] Person months of lost work is the sum of people unemployed above the historical average for the months of September to December of 2005.

Bermuda insurers and reinsurers provided nearly $4.7 billion that was paid for business related claims in Louisiana and $2.1 billion in Mississippi.[7] Other insurers and reinsurers provided an estimated $15.8 billion to Louisiana and $8.3 billion to Mississippi.

Table 8: Private and Federal Aid to Businesses ($M)

	Louisiana	Mississippi
Bermuda insurers and reinsurers	$ 4,749	$ 2,120
Other insurers and reinsurers	$15,848	$ 8,371
Federal Aid to Businesses	$25,992	$ 8,335
Total Business Aid	$46,590	$ 18,826
Bermuda Share	10%	11%

Federal aid for the storm damage was also tallied. This aid was broken out in terms of aid to residential homes, business recovery and infrastructure. Where aid dollars were specifically identified as business aid to Louisiana or Mississippi they were counted directly. The rest of the federal aid for business recovery and infrastructure repair was totaled and then allocated to the states based on each state's share of the losses in Table 9. This provided an estimated $26 billion for Louisiana and $8.3 billion to Mississippi. In total Bermuda provided 10% of the business recovery assistance to Louisiana and 11% to Mississippi.

[7] The aid to businesses from insurers was allocated based on the distribution of claims to the states and then by the type of claim (residential or commercial property) reported by the PCS division of ISO as of February 8, 2006. These estimates would include commercial property and business interruptions claims.

Table 9: Distribution of Claims and Losses by State

State	Total Insured Commercial Losses ($ M)	Bermuda's Share of Commercial Losses
Alabama	$ 610.5	$ 194.8
Arkansas	$ 7.5	$ 2.4
Florida	$ 4,909.5	$ 1,566.0
Georgia	$ 14.8	$ 4.7
Louisiana	$ 14,888.5	$ 4,749.2
Mississippi	$ 6,646.9	$ 2,120.3
Tennessee	$ 37.8	$ 12.1
Texas	$ 1,078.7	$ 344.1
Grand Total	$ 28,194.2	$ 8,993.5

Source: Insurance Information Institute. As of February 8, 2006. PCS Division of ISO.

Based on these estimates, the business aid provided by the insurers and reinsurers of Bermuda helped 14,170 people return to work as employment recovered in 2006 (Table 10). 9, 564 of these workers were in Louisiana and 4,607 in Mississippi.

Table 10: Bermuda's share of employment recovery

	Louisiana	Mississippi	Combined
Jobs Restored	9,563	4,607	14,170

An Interlocking Safety Net

There are many complications in estimating the impact of regulatory and tax changes on the insurance industry. Insurers and reinsurers are part of an intricate financial network that is simultaneously a consumer of capital (for claims and benefits), a source of capital for investment (lending to other industries) and a repository of capital that provide returns to investors. Changes in the regulatory landscape don't affect insurance in isolation; they change the relative structure of risk and reward, shifting capital around different investment products – of which insurance is only one. Currently the U.S. market is served by a mixture of U.S. domiciled businesses, as well as non-U.S. firms conducting cross-border business either directly or through U.S. subsidiaries. If taxes on the non U.S. insurers and reinsurers are raised, then these firms become relatively less attractive as a place to invest capital. Insurers and reinsurers have several potential responses and the greatest complexity is determining how these individual responses will ultimately affect the economy.

One of the most drastic responses a non-U.S. firm may have to a punitive tax on its operations would be to shift its operations out of the U.S. market entirely, reducing or eliminating its U.S. employment base and the amount of direct premiums written. While this might be dramatic from the perspective of the individual firm, it does not necessarily carry the greatest consequences for the U.S. economy. These impacts are explored in the following section, *Economic Impact of the Average Bermuda Domiciled Insurance and Reinsurance Firm*.

Since a tax increase may make insurers and reinsurers less attractive to investors, another response is for the insurers and reinsurers to reduce their underwriting losses so that they can maintain attractive returns for investors. **In order to reduce underwriting losses, the insurer will have to adjust its portfolio to reduce its risk of losses**, so it will tend to write fewer policies in high risk regions or for high risk types of insurance. Changes in federal regulatory and tax policy do not have a uniform effect on the U.S. market for insurance because the states have considerable oversight. The U.S. market is in reality a patchwork of fifty sub-markets. Furthermore, there has been a tendency for some firms to isolate their business in high risk regions under subsidiary firms in order to protect the parent corporation or by ceding a portion of their portfolio to non-US reinsurers operating on a cross border basis. Changes in federal regulations could cause firms to reduce their business activity in a specific state, such as one with an unattractive risk/reward ratio. This report examines a variety of specific impacts in the following sections.

A third potential response of the insurers and reinsurers would be to raise the price of insurance. This might occur as a general increase for all policies, or it might be isolated to compensate for high risk underwriting.

Economic Impact of the Average Bermuda Domiciled Insurance and Reinsurance Firm

There are 25 global providers of insurance and reinsurance firms domiciled in Bermuda.[8] Our analysis seeks to define these firms in order to provide a broader understanding of their individual impacts. We choose to utilize the average firm size to provide an understanding of what a particular firm looks like and provides to the economy.

Table 11: Average Bermuda Firm's U.S. Operations

	Direct	Indirect	Induced	Total
Jobs	400	585	3,307	4,292
Output ($ Millions)	$ 94.6	$ 86.3	$ 402.7	$ 583.6

The average firm employs 400 direct employees, leveraging an additional 585 indirect jobs and 3,307 induced jobs (Table 11)[9]. The total impact is 4,292 jobs. The average also leverages a total of $583.6 million in output to the economy based on $94.6 million in direct output. In addition, the average firm pays a variety of indirect business taxes (e.g., sales taxes and licenses) that amount to an estimated $22.9 million. In addition, there are taxes paid from the income and expenditures of the employees and the indirect and induced employment, which amounts to $42.9 million.

Loss of an Average Bermuda U.S. Operation

The contribution of the average firm doesn't really tell us what would happen if the average Bermuda insurer, which employs 400 U.S. workers, pulled its operations out of the United States. Assuming that the average firm would still assume business from the U.S. on a direct procurement/cross border basis it would have to subcontract with vendors to continue to service the business it writes in Bermuda. Based on the IMPLAN

[8] In addition, another 1,200 "captives" operate in Bermuda as well.
[9] The average firm size was calculated based on ABIR's survey of total U.S. employment of 9,600 employees. The number represents only U.S. employees based in the U.S. and was rounded down to 400 for simplicity of presentation.

estimates, the average firm would support 302 jobs through subcontractors and arrangements with other firms. The net job loss would be -98 direct jobs.

Table 12: Loss of the Average Bermuda U.S. Operation

	Net Direct	Net Indirect	Net Induced	Total Net Effect
Employment	-98	-479	-1,975	-2,551
Output ($ Millions)	-$56.0	-$72.3	-$239.1 M	-$367.5 M

The shifting of employment from direct employees to subcontractors however has a greater net effect than the loss of 98 jobs. An additional -479 jobs would be lost in the industries that supply the insurers and reinsurers, even after accounting for the replacement effect of the subcontracted services. These decreases in economic activity would trickle through the economy to induce a further job loss of -1,975 jobs in miscellaneous industries. The loss would also subtract $367 million in output from the U.S. economy. Indirect business taxes (sales taxes and licenses) would also be reduced by $15.6 million and taxes collected from household expenditures would drop by $26 million. These effects are in addition to any losses caused by any price increases or reduction in insurance capacity for the U.S. market.

The employees of Bermuda's insurers and reinsurers are concentrated in six states. Any reductions in the U.S. operations of Bermuda companies are most likely to affect one or more of these states.

Table 13: U.S. Employees of Bermuda Insurers and Reinsurers

State	Employment
Pennsylvania	2,053
New York	1,744
Connecticut	1,124
California	759
Georgia	708
Delaware	685
Other	2,546
Total	9,619

Crop Insurance

One can also easily see the important role that Bermuda-based insurers and reinsurers play when the crop insurance industry is examined. There are two major forms of crop insurance; crop-hail and multiple peril crop insurance (MPCI). In terms of dollar amounts, MPCI dwarfs crop-hail and will be studied more closely in the following examination. While both forms are insured by the private insurance industry, the U.S. Department of Agriculture (USDA) administers, regulates and subsidizes the MPCI program. There are 16 official companies designated by USDA to provide insurance coverage through the Standard Reinsurance Agreement (SRA) of the MPCI for the year 2008. Of these, there are four Bermuda-based direct insurers. Based on 2006 data, if the past foretells the future, as many as 17 Bermuda firms will be providing reinsurance to the direct insurers.

Table 14: Bermuda Share of US Crop Insurance

	U.S. Direct Premiums Written
Total U.S. Crop Insurance	$4,886,591,000
Bermuda Supported	$1,326,971,000
Bermuda Share	27%

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting.

Table 15: Cessions of U.S. Crop Insurers

	U.S. Cessions
Total U.S. Crop Insurance	$2,825,625,000
Bermuda Supported	$1,607,071,000
Bermuda Share	57%

In 2006, Bermuda-based insurers wrote 27% of the direct crop insurance in the U.S. and they assumed a portion of the crop reinsurance ceded by U.S. insurers (both affiliated and unaffiliated). In total, Bermuda-based insurers and reinsurers accounted for 57% of the gross U.S. premiums ceded by U.S. crop insurers during the year. With direct premiums of $1.3 billion and reinsurance of $1.6 billion, Bermuda based insurers and reinsurers may account for as much as 58% of the market. This report uses the more conservative 57% market share.[10]

Since MPCI is backed by the federal government, federal subsidies help to buoy the market and mitigate the impact of firms entering or leaving the crop insurance business. However, fewer firms in the crop market decrease the capacity to service claims, creating serious ramifications for service to farmers. Such a move could significantly decrease the amount of interaction a farmer has with the insurance provider, but also *increase* the amount of time it takes to process losses and pay out claims that a farmer may desperately need. With fewer firms in the market, each firm would be responsible for a greater share of the coverage, both in terms of acreage and number of farms. The unintended consequences on the service side could be serious because it is difficult to replace the expertise provided by those in the market. Crop insurance requires experience with crop hazard modeling in order to establish sound underwriting, so firms cannot be easily replaced in this market.

Arkansas

	Premiums Written	Number of Farms	Liabilities[11]	Losses Paid
Arkansas Total	$26,392,751	47,000	$489,904,505	$28,257,369
Bermuda Firms	$15,010,847	26,731	$278,632,629	$16,071,346

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril only.

Bermuda insurers and reinsurers account for more than $15 million of the premiums written in Arkansas, but more importantly, greater than $278 million of crop liability. It is estimated that nearly 27,000 farms are insured through Bermuda-based firms.

[10] State Crop Insurance Calculation Methodology. Insurer market shares vary by state and by year making it very difficult to estimate accurate state market shares over time. For this report, national estimates were used to derive the state numbers. The amount of Direct Premiums Written (DPW) for crop insurance in each state was divided by the crop DPW for the United States. This proportion was then multiplied by the US total Gross Premiums Written (GPW) to account for the ceding of reinsurance premiums in the estimated Gross Premiums Written (GPW) for each state. We assumed that Bermuda-based companies account for the same share of the market in each state as they do for the entire U.S. market, which is 56.9% of the premiums after accounting for all reinsurance transactions.

[11] According to the Risk Management Agency, liability is defined as total value insured. For example, if 100,000 bushels of $3.00 corn is insured, than the liability is $300,000.

In 2005, more than 4.5 million acres were insured, representing nearly $490 million in liabilities with a subsidy of $34 million. Currently, the amount of liabilities has grown beyond $610 million with $46.5 million subsidies, while the net acreage covered has slightly decreased to 4.4 million acres.

Colorado

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Total	$47,568,299	30,500	$580,679,083	$98,762,158
Bermuda Firms	$27,054,416	17,347	$330,260,567	$56,170,865

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril only.

Bermuda insurers and reinsurers account for more than $27 million of the net premiums written in Colorado, but more importantly, crop liability in excess of $330 million. It is estimated that there are more than 17,000 farms insured through Bermuda-based companies.

In 2005, Colorado had 3.9 million acres covered, with liabilities of $579 million and a $49 million subsidy. Since that time, the numbers have risen dramatically. Liabilities have increased to $825 million, insuring more than 6 million acres. The subsidy has also increased, rising above $80 million. These increases may be due in part to the fact that Colorado has consistently had losses that exceeded the premiums written. From 1992 to 2006, Colorado averaged a loss ratio of 1.29, meaning that losses averaged 29% more than the amount of premiums written.

Indiana

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Total	$98,373,312	59,000	$2,003,427,216	$19,190,066
Bermuda Firms	$55,949,709	33,556	$1,139,446,947	$10,914,328

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril and Crop-Hail.

Bermuda insurers and reinsurers account for nearly $56 million of the premiums written in Indiana and in excess of $1.1 billion of crop liability. It is important to note that there may be more than 33,000 farms insured through Bermuda-based companies.

Indiana was the country's leader in catastrophic losses in 2006 where one April hail storm alone caused more than $1.3 billion in property damage. While not all the destruction was incurred on crops, it is worthwhile to know that the most recent crop/hail insurance figures (2005) indicated that only $7 million in premiums had been written. Such a figure displays the need for the increased capacity that Bermuda-based insurers and reinsurers bring to farmers, especially cases of extreme and unexpected storms and losses.

In 2005 the Federal Crop Insurance Corporation had more than 7.5 million acres of Indiana cropland insured with total liabilities greater than $2 billion and $87 million in premium subsidies. In just two years these figures have grown to 7.8 million acres, covering $3.5 billion in liabilities, with $160 million in subsidies.

The reinsurance provided by Bermuda firms helps to keep premium subsidies at a reasonable level. If private reinsurance was not available, more reinsurance would likely be provided by the federal government to the direct insurers and thus higher losses would accrue to the federal budget in years in which loss experience was poor.

Iowa

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Iowa Total	$204,981,199	89,000	$4,513,739,942	$72,764,024
Bermuda Firms	$116,582,824	50,619	$2,567,184,450	$41,384,456

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril and Crop-Hail.

Bermuda insurers and reinsurers account for more than $116 million of the premiums written in Iowa, but more importantly, over $2.5 billion of crop liability. In fact, there may be more than 50,000 farms insured through Bermuda-based insurers/reinsurers.

While Iowa is a fairly stable environment, it is important to note that in 2003 Iowa's farmers reported more than $237 million in crop insurance claims. Each individual firm represents a significant share of Iowa's capacity to respond to a bad year, and the loss of a single company could have significant impacts on servicing the needs of imperiled farmers as a result of a catastrophe or difficult year.

In 2005, the Federal Crop Insurance Corporation had greater than 19.9 million acres of Iowa cropland insured with total liabilities exceeding $4.5 billion and nearly $167 million in premium subsidies. Currently, over 20 million acres are insured, representing $8.2 billion in liabilities and over $321 million in federal, premium subsidies.[12]

Kansas

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Total	$261,379,158	64,500	$1,894,477,214	$118,152,275
Bermuda Firms	$148,658,289	36,684	$1,077,481,757	$67,198,972

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril only.

Bermuda insurers and reinsurers account for nearly $149 million of the premiums written in Kansas, but more importantly, almost $1.1 billion of crop liability. In total there may be in excess of 36,000 farms insured through Bermuda-based companies.

In 2002, Kansas had $446.8 million in losses against $169 million in premiums, a loss ratio of 2.64. The premium subsidy of $98 million in 2002 represented 6% of total premiums; by 2005 the subsidy increased to $151 million in 2005, or 8% of total premiums. In that year, the Federal Crop Insurance Corporation currently has more than 16.4 million acres of Kansas cropland insured with total liabilities of $1.9 billion, an increase of 14%. Over the past 15 years (1992-2006), Kansas has averaged a loss ration of 1.1, meaning that on average, losses have been 10% more than the premiums written.

The capacity provided by Bermuda insurers and reinsurers has helped Kansas to maintain insurance coverage for more than 82% of its total acres protected by insurance coverage. Since 2005, while the net acres insured have remained virtually the same, liabilities covered have risen to $2.9 billion with a subsidy of over $256 million.

[12] Federal Crop Insurance Corporation, "Crop Year Statistics for 2007" Accessed 10/15/2007

Montana

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Total	$55,710,297	28,000	$673,119,503	$31,716,495
All Bermuda Firms	$31,685,168	15,925	$382,835,951	$18,038,720

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril only.

Bermuda insurers and reinsurers play account for more than $31 million of the premiums written in Montana, but more importantly, nearly $383 million of crop liability. It is estimated that there are nearly 16,000 farms insured through Bermuda-based firms.

In 2005, over 33.9 million acres were insured, representing $673 million in liabilities with a subsidy of $56 million. Currently, the amount of liabilities has grown to over $735 million with $79 million subsidies, while the net acreage covered has decreased to 29 million acres.

Montana remains a volatile marketplace for insurers and reinsurers. Over the past 15 years (1992-2006), the environment has displayed streaks of gross premiums slightly surpassing losses, followed by several years where losses greatly surpassed premiums written. During this time period, the loss ratio averaged 1.17 showing that losses averaged 17% more than the premiums written.

2001 was a particularly difficult year for insurers as losses exceeded the premiums by more than $106 million. Such figures display the need for the added capacity that Bermuda-based insurers and reinsurers bring to bear.

North Dakota

	Premiums Written	Number of Farms	Liabilities	Losses Paid
Total	$178,379,916	30,300	$2,033,358,321	$225,552,332
All Bermuda Firms	$101,453,374	17,233	$1,156,470,229	$128,282,632

Sources: Federal Crop Insurance Corporation, Crop Year Statistics for 2005; Risk Management Agency; U.S. Department of Agriculture; additional calculations by GSP Consulting. Data for Multiple Peril only.

Bermuda insurers and reinsurers account for more than $101 million of the premiums written in North Dakota, but more importantly, crop liability greater than $1.1 billion. More than 17,000 farms are insured through Bermuda-based firms. In 2005, North Dakota had 20.4 million acres insured, with liabilities of over $2 billion and a $179 million subsidy. Since that time, the numbers have risen dramatically. Liabilities have increased to $3.2 billion, covering over 21.7 million acres. The subsidy has also increased, rising to over $311 million.

These increases may be due in part to the fact that North Dakota has consistently had losses that exceeded the premiums written. From 1992 to 2006, North Dakota averaged a loss ratio of 1.16, meaning that losses averaged 16% more than the amount of premiums written.

Appendix I: Impact Methodology

Explaining Impact Models and Terms

The economic impact was conducted using an IMPLAN model for the United States. IMPLAN is an input-output model that enables the estimation of an impact of changes in economic activity, or an estimation of the total economic contribution of an industry such as insurance. An input-output model estimates the flows and interactions between households and industries in the production and consumption of goods and services within an economy. An impact estimate has three basic elements. The direct effects are the changes that are stimulating the economy. A direct effect may be a positive event such as the opening of a new manufacturing facility or the expansion of a store, or a negative effect such as the loss of a particular business. In this report, we are examined the insurance industry, therefore the direct effects are the jobs and output of the industry as a whole and the average firm. The next category of impact is indirect effects. Indirect effects take account of everything that an industry needs to produce a unit of a commodity. For example, producing $100 worth of paper takes a certain amount of labor, as well as services and material from a variety of supplier industries such as wood, chemicals, tool makers, trucking companies, etc. All of the economic activity from the direct production of the paper and the indirect goods and services increases the wages of people in those industries. The impact of their additional income and spending represents the third category of impact known as indirect effects.

The impact multiplier is the ratio: (Direct + Indirect + Induced) / Direct