Fundamentals of Property and Casualty Insurance

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The Griffith Educational Foundation

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Catastrophic (CAT) Risk

• What are potential damages from
  • Hurricane
  • Flood
  • Tornado
  • Earthquake
  • Terrorism

• How does society bear the cost of these events?
Paying for CAT Losses

• While many losses are borne by individuals and government, a large portion of losses are paid by property & casualty insurance companies.

• Questions:
  • How big are these events?
  • How do insurers fund catastrophes?
  • How does the insurance market react to catastrophic loss?
## Major CAT events – Property Losses in 2015 USD

<table>
<thead>
<tr>
<th>Rank</th>
<th>Date</th>
<th>Event</th>
<th>Loss Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 2005</td>
<td>Hurricane Katrina</td>
<td>$49,000</td>
</tr>
<tr>
<td>2</td>
<td>Sep. 2001</td>
<td>9/11 Terrorist Attacks</td>
<td>$24,600</td>
</tr>
<tr>
<td>3</td>
<td>Aug. 1992</td>
<td>Hurricane Andrew</td>
<td>$24,100</td>
</tr>
<tr>
<td>4</td>
<td>Oct. 2012</td>
<td>Hurricane Sandy</td>
<td>$19,550</td>
</tr>
<tr>
<td>5</td>
<td>Jan. 1994</td>
<td>Northridge earthquake</td>
<td>$18,600</td>
</tr>
<tr>
<td>6</td>
<td>Sep. 2008</td>
<td>Hurricane Ike</td>
<td>$13,800</td>
</tr>
<tr>
<td>7</td>
<td>Oct. 2005</td>
<td>Hurricane Wilma</td>
<td>$12,300</td>
</tr>
<tr>
<td>8</td>
<td>Aug. 2004</td>
<td>Hurricane Charley</td>
<td>$9,200</td>
</tr>
<tr>
<td>9</td>
<td>Sep. 2004</td>
<td>Hurricane Ivan</td>
<td>$8,750</td>
</tr>
<tr>
<td>10</td>
<td>Apr. 2011</td>
<td>Tuscaloosa tornadoes</td>
<td>$7,750</td>
</tr>
</tbody>
</table>
Property and Casualty (P&C) Insurance In the U.S.

• In 2015...
  • More than 2,500 insurance companies
  • $520 billion net premiums written
    • Auto insurance makes up nearly 40% of industry premium
    • Homeowners insurance makes up roughly 15% of industry premium
  • Roughly 600,000 individuals *directly* employed by the P&C industry; more than 2.5 million individuals employed by the insurance industry
  • Insurance coverages include property, liability, business interruption, workers’ compensation, and more
## Top 10 Largest U.S. P&C Insurers (by premium)

<table>
<thead>
<tr>
<th>Company</th>
<th>Direct Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Farm</td>
<td>$59.3B</td>
</tr>
<tr>
<td>Allstate</td>
<td>$30.2B</td>
</tr>
<tr>
<td>Berkshire Hathaway</td>
<td>$30.0B</td>
</tr>
<tr>
<td>Liberty Mutual</td>
<td>$29.8B</td>
</tr>
<tr>
<td>Travelers</td>
<td>$23.2B</td>
</tr>
<tr>
<td>Progressive</td>
<td>$21.3B</td>
</tr>
<tr>
<td>Chubb/Ace</td>
<td>$20.7B</td>
</tr>
<tr>
<td>Nationwide</td>
<td>$19.6B</td>
</tr>
<tr>
<td>American International Group (AIG)</td>
<td>$19.1B</td>
</tr>
<tr>
<td>Farmers Group</td>
<td>$19.1B</td>
</tr>
</tbody>
</table>
Property Risk

• Property is typically categorized as real or personal
  • Real property includes land, structures, and permanent attachments
  • Personal property includes contents and other mobile equipment or property
• Property risks can be direct or indirect
Liability & Casualty Risk

• Liability insurance covers losses stemming from negligent acts
• Liability insurance covers the value of a judgment or settlement plus legal defense costs (often as an additional benefit)
• Casualty insurance is a broad term which includes liability coverages, workers comp, and other non-property, non-life
Some Major Insurance Coverages

• Auto Insurance
• Homeowners Insurance
• Federal Catastrophe Insurance Coverages

• We will also discuss:
  • Reinsurance
  • Excess & Surplus Lines Insurance
The Personal Auto Policy

The most common tool for individuals and families to protect against the risk of property damage and physical injury stemming from car accidents.
The Personal Auto Policy (PAP)

- What does auto insurance cover?
  - Part A – Liability
  - Part B – Medical Payments
  - Part C – Uninsured/Underinsured Motorists
  - Part D – Physical Damage
  - Personal Injury Protection / No Fault
Auto Insurance and Catastrophes

• Auto damage occurs when CAT events occur

• Usually auto damage is secondary to structure damage during CATs

• Evacuations tend to involve personal vehicles
The Homeowners Insurance Policy

An individual or family insurance policy which protects against losses to real property, personal property, extra expenses after a loss, and liability claims.
Understanding The Homeowners Policy

• Section I – Property Coverages
  • Coverage A: Dwelling
  • Coverage B: Other Structures
  • Coverage C: Personal Property
  • Coverage D: Loss of Use

• Section II – Liability Coverages
  • Coverage E: Personal Liability Insurance
  • Coverage F: Medical Payments to Others
Section I—Property Coverages, Dwellings and Other Structures

Protects:

• House and structures attached to house
• Detached structures on premises

Perils insured against depend on policy.
Section I—Property Coverages, Personal Property and Loss of Use

- Personal Property—property other than dwelling and other structures
- Loss of Use—financial losses when an insured residence is uninhabitable
  - Reimbursement for living or meal expenses
  - Fair rental value
Section II—Liability Coverages, Personal Liability + Medical Payments to Others

• Bodily injury or property damage for which the insured is legally liable.
• Insurer is obligated to defend the insured.

• Medical Payments
• For persons injured at insured’s premises.
• Applies whether or not insured is liable.
• Claim must be made within three years.
Homeowners Insurance and Catastrophes

• CAT losses drive pricing and availability of homeowners insurance
  • California earthquakes & wildfire
  • Florida, Mississippi, Louisiana wind coverage
  • Flood risk excluded by standard policies

• We will discuss:
  • National Flood Insurance
  • Reinsurance

  which help fill gaps in homeowners insurance markets subject to CAT
Federal Catastrophe Insurance Programs

Two federally underwritten insurance programs are Federal Crop Insurance (FCIC) and the National Flood Insurance Program (NFIP). Both may be sold or serviced by primary insurance companies but are ultimately underwritten by the federal government (risk borne by taxpayers).
Rationale for Federal Insurance Coverage

• Crops risks are often systematic – many farmers suffer losses simultaneously
  • Losses caused by famine, drought, flood, storm
• Flood risks are often systematic – many property owners suffer losses simultaneously
  • Waters driven by storm, current, or other tidal surges
• Private insurers have difficulty budgeting and paying for large, simultaneous losses (affecting thousands of insureds at the same time)
Reinsurance

Reinsurance is a financial tool used by insurers to protect against catastrophic risk exposure, write greater limits of insurance (insure larger risks), grow their book of business, and more. Reinsurance helped the U.S. insurance industry withstand major catastrophic events such as the 9/11 Terror Attacks and Hurricane Katrina.
Understanding Reinsurance

• Insurer transfers liability for certain losses to reinsurer.
  • Insurer pays the reinsurer a premium for this transfer
  • Reinsurer pays the insurer a ‘ceding commission’ to help offset administrative costs of selling

• Insurer retains some of the loss; Coverage is subject to limits

• Excess-of-loss reinsurance
• Proportional reinsurance
Benefits & Costs of Reinsurance

- Reinsurers share part of the burden of primary insurers’ financial loss
- Reinsurance improves insurers’ financial stability (good for policyholders)
- Reinsurance may help an insurer grow its book of business

- Reinsurance increases premiums to policyholders (additional risk transfer is costly)
- Policyholders cannot collect directly from reinsurers (Two exceptions):
  - Cut-through endorsement
  - Purchase of reinsurance for captive insurer or pool
Reinsurance and Catastrophes

- Reinsurance allows the P&C industry to write catastrophic risk
  - Reinsurers usually participate globally which spreads risk beyond one region

- Reinsurers have been instrumental in providing funding for major CAT events
  - Hurricane Andrew
  - 9/11 Terror Attacks
  - Hurricane Katrina
  - Global disasters
Insurance Coverage for Catastrophe

• Excluded:
  • Flood
  • Earthquake

• Covered:
  • Wind
  • Wildfire

• Rationale for coverages:
  • Floods have been loss drivers for centuries
  • Hurricanes became the dominant loss driver in the 1980’s/early 1990’s
Major Catastrophe Periods

- 1992 – Hurricane Andrew
  - Changed industry perspective on CATs
- 2004 & 2005 – Atlantic Hurricanes
  - More than $100B in insured losses in two-year period
  - Hurricane Katrina most costly insurance event in history
- 2011 – U.S. Storms
  - Only landfalling hurricane was Irene but numerous other storms hit
- 2012 – Hurricane Sandy
  - Roughly $20B in insured property losses – even more in federal flood loss
The P&C Insurance Market Cycle

• A documented trend is the underwriting cycle:
  • Periods of high price and limited coverage (Hard Market) lead to
  • Periods of low price and wide coverage (Soft Market), etc.

• CAT events often disrupt the underwriting cycle by shrinking available insurance and increasing prices (led from the Reinsurance Market)
Catastrophe Coverage Trends

• In 1992 Hurricane Andrew caused major disruption in the U.S. P&C market – 13 insurer bankruptcies in Florida. Pricing and reserving changed.
• The pre-2004 P&C market was softening due to high investment returns and fewer CATs
  • Insurers make their profit through investments
• Post-2005 insurers shrank their homeowners business (esp. in FL and LA); simultaneously investments started to decline
The Current P&C Market

• Insurance coverage increased rapidly after 2008
  • Many CATs happened in this period, but often only one major event per year

• Unlike previous “soft” markets, prices have remained relatively high
  • Why?

• Many in the industry ask if the underwriting cycle is broken based on recent trends
How prepared is the industry for another CAT?

• Capitalization of P&C insurers is very high
  • Justification and support from regulators for relatively high cash reserves
• Reinsurance is supplemented by financial market mechanisms
  • Retrocessions
  • Sidecars
  • Hedge funds
  • CAT bonds
• U.S. risks are traded internationally which helps improve diversification