The Impact of Models
On
Carriers and Program Administrators

Scott Hanson – Division President, AmRisc

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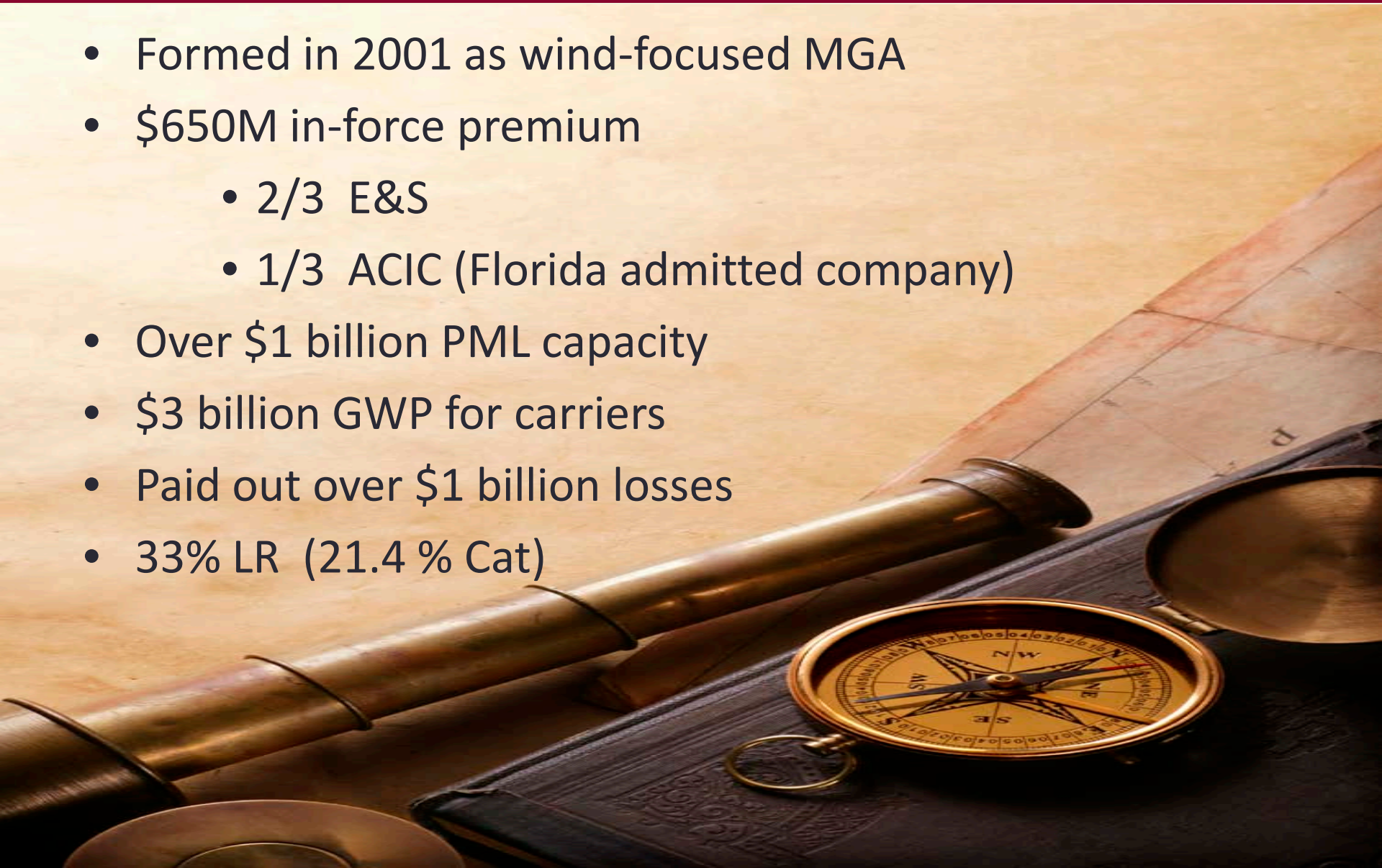
Background

- Formed in 2001 as wind-focused MGA
- $650M in-force premium
    - 2/3 E&S
    - 1/3 ACIC (Florida admitted company)
- Over $1 billion PML capacity
- $3 billion GWP for carriers
- Paid out over $1 billion losses
- 33% LR (21.4 % Cat)



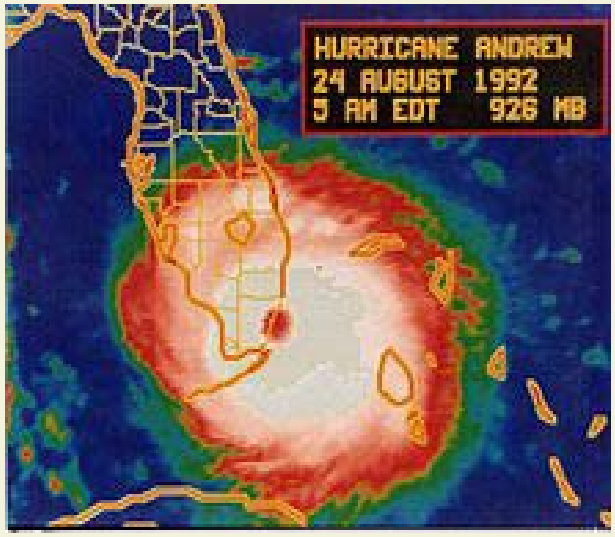
Overview

- Models and Market Influence on Portfolio Management and Account Underwriting
- Model Utilization – example of account underwriting and risk selection
- Portfolio Management –American Coastal example

Models and Market Influence

- Catastrophe models
- Variance of model design
- Model change cycle drives Portfolio Management and Account Underwriting

Models and Market Influence



Models and Market Influence

Catastrophe Models

	AIR	RMS	EQECAT AN ABS GROUP COMPANY	ARA	RisCalc
	Clasic/2	RiskBrowser	RQE	HurLoss	AmRisc
When	1987	1988	1980s	1998	2001
Perils					
Wind	X	X	X	X	X
Quake	X	X	X		X
Version	13.0 2011	11 2011	13 (Fall 2012)	5.0 2011	N/A

Models and Market Influence

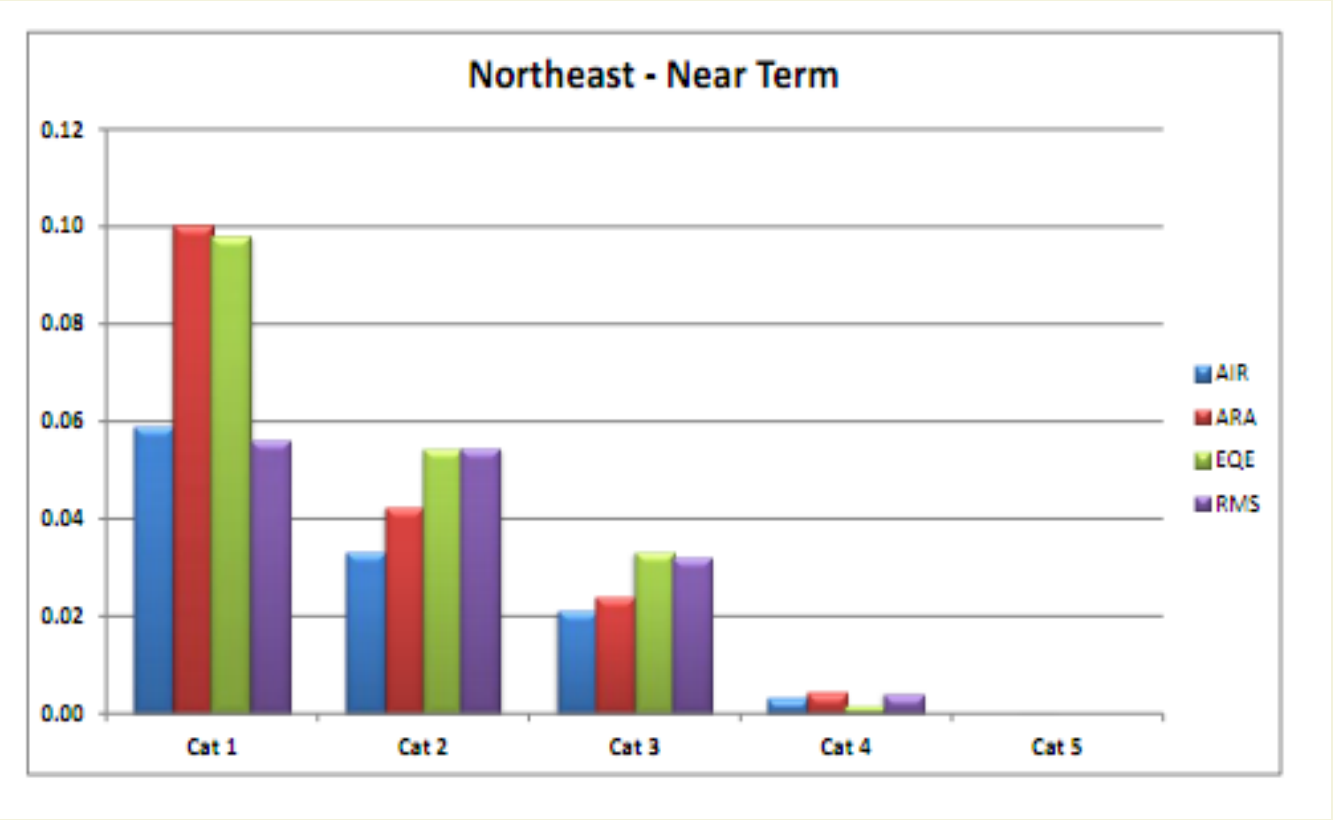
Catastrophe Models – Influencing Factors

- Geography
- Storm surge
- Geometry
- Secondary characteristics
- Occupancy
- Building Codes (pre-1995, post 2001)

Models and Market Influence

Variance of Model Design

Annual Landfall Frequencies*

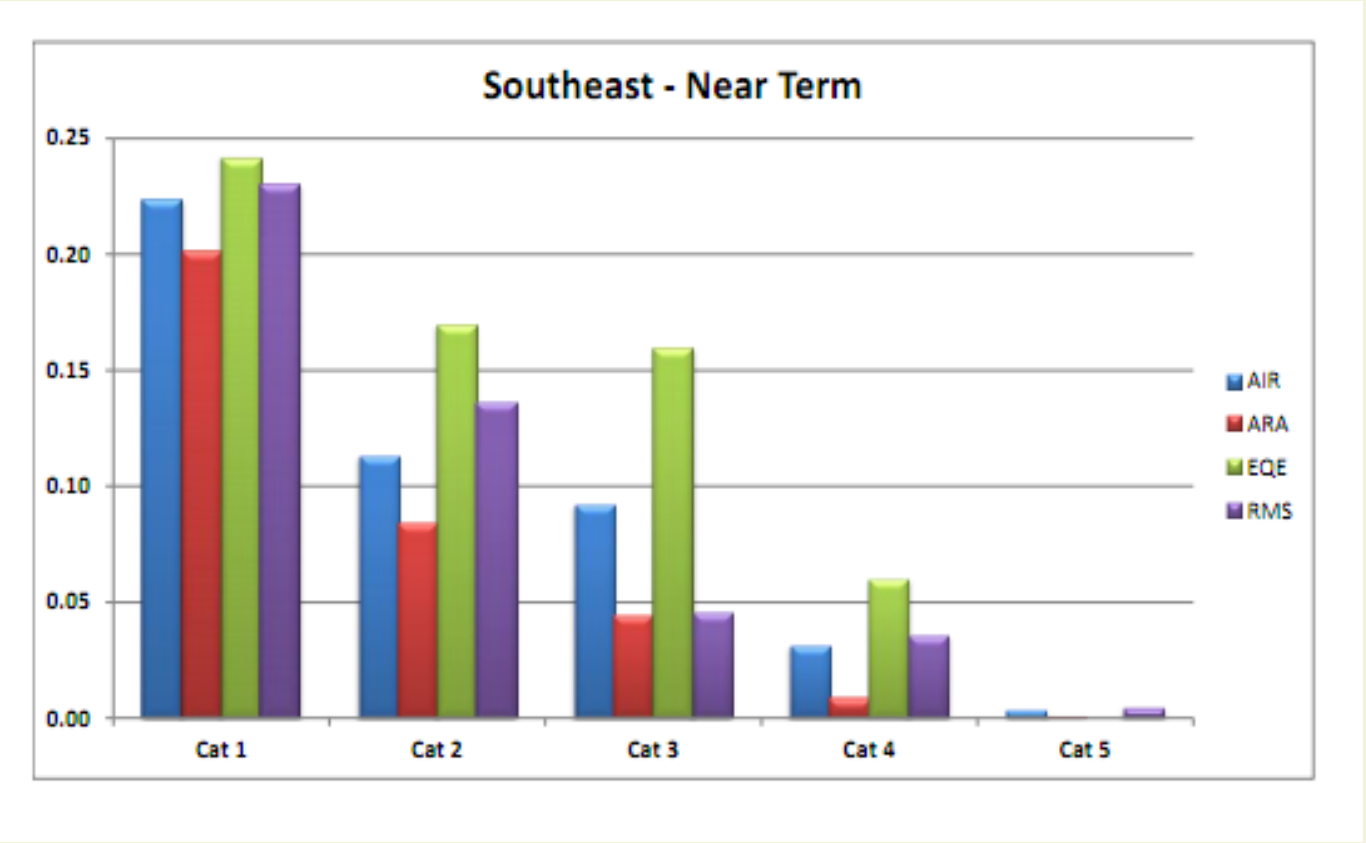


*Source: Salient Risk Advisory Services. RAA/iSCM – Catastrophe Modeling 2012. Cat Models – The New Risk. February 14-16, 2012.

Models and Market Influence

Variance of Model Design

Annual Landfall Frequencies*



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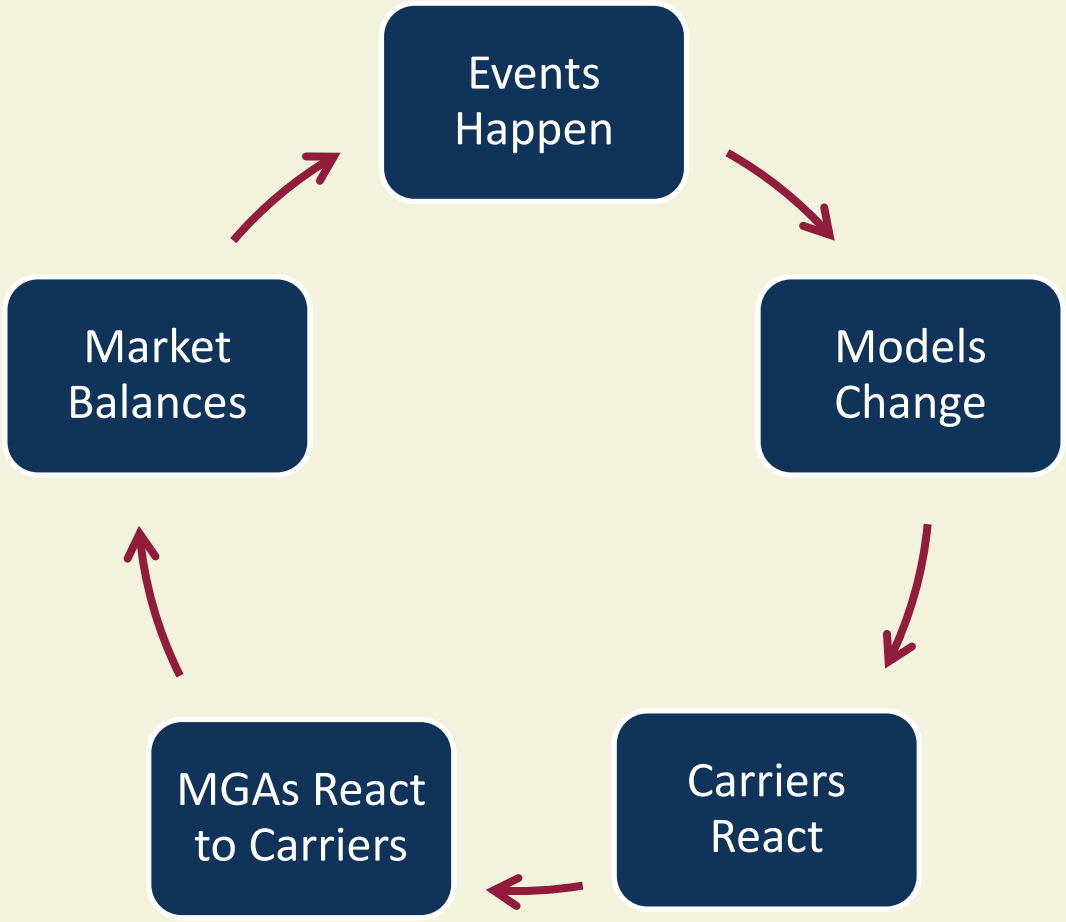
Models and Market Influence

Events Happen

Models and Market Influence

Model Change Cycle



Models and Market Influence

Hurricane Ike

September 13, 2008

Models and Market Influence

Models Change

Example: RMS v. 11

- In 2008, Hurricane Ike produced new loss data that was applied in RMS v. 11
- RMS v. 11 reduced the effect of secondary characteristics
  - Diminished underwriting risk selection
- Changed rates of certain geographic areas
  - Texas and Louisiana & Inland properties
- Impacted certain occupancies harder (i.e., schools)
- Storm surge weighted heavily

Models and Market Influence

Carriers React & Adapt

RMS v. 11 – Carriers' PMLs grew by 100-200% overnight

- A.M. Best gives carriers time to manage
  - Some reacted immediately, others cautiously

- How carriers adapted
  - Blended model approach
  - Looked at historical vs. near-term probabilities
  - Changed storm set (frequency of large events)
  - Reduced storm surge impact when flood excluded
  - Purchased additional reinsurance

Models and Market Influence

MGA Response

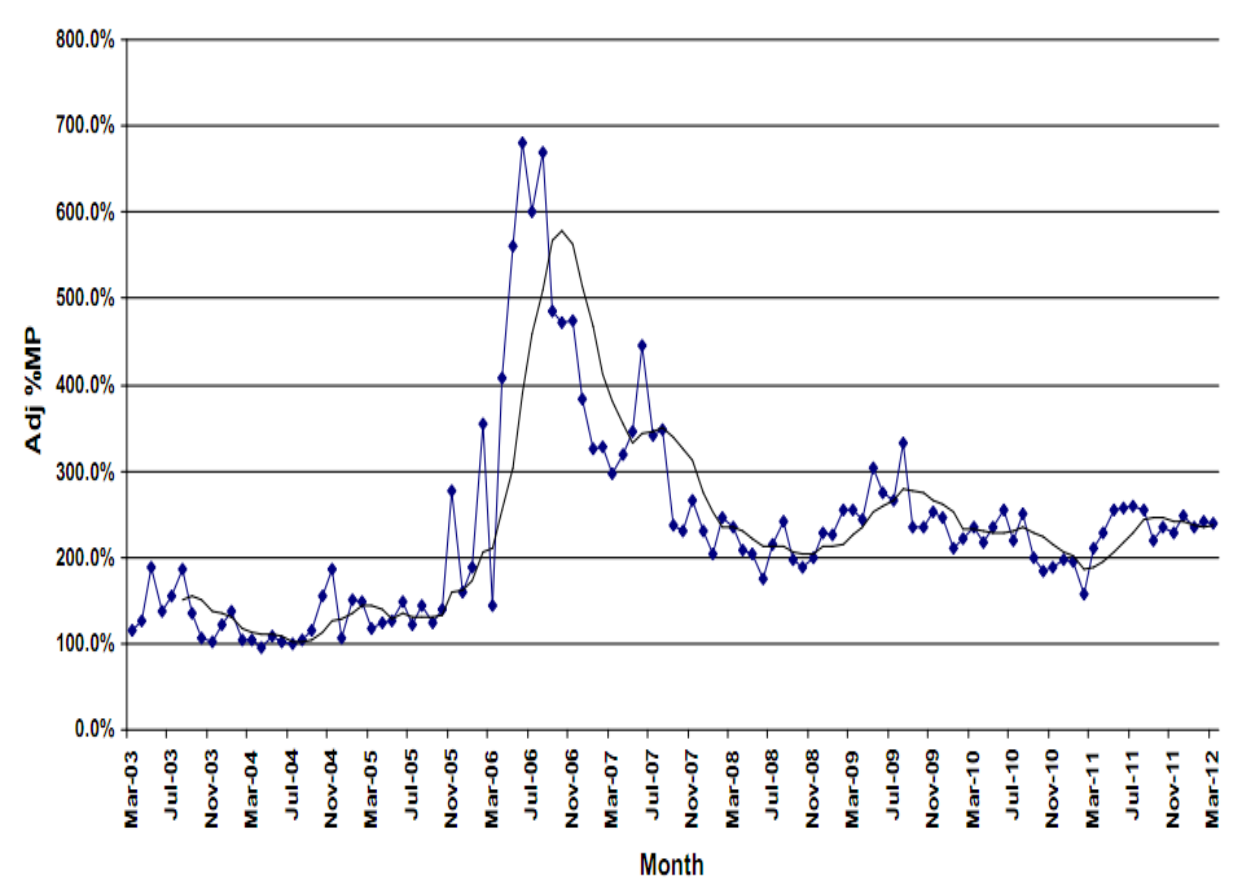
Strategy with Carriers

- Know how your Carrier manages their CAT (capital)
  - Where are they full?
  - What are their reinsurance costs (cost of capital)?
- Optimize your (their) portfolio to generate highest ROE
- Revise underwriting pricing/terms to achieve their metrics
- Stay nimble

Models and Market Influence

Markets Balance

- Models can adjust (i.e., RMS v. 11 fix in January)
- Technical Pricing is managed over time



RISCTrack
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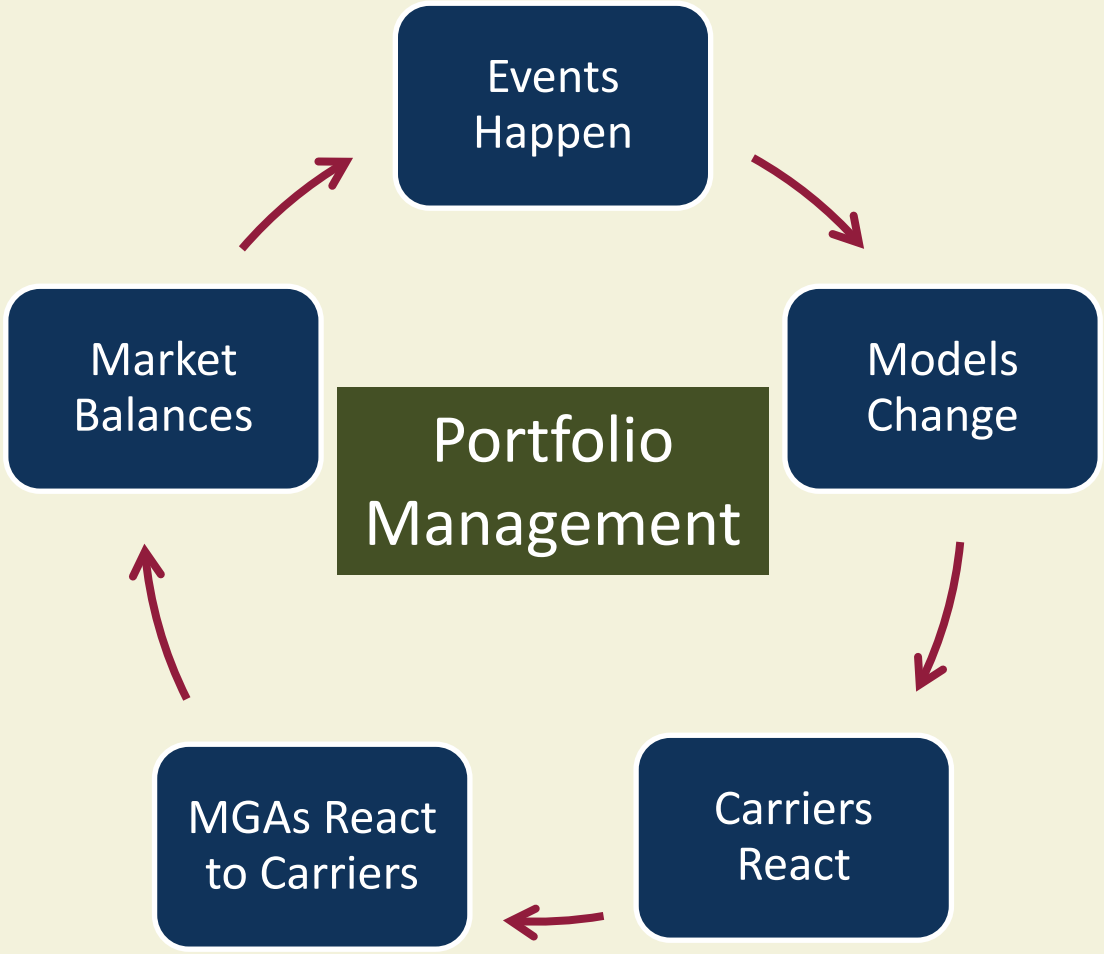
Models and Market Influence

Model Change Cycle



Portfolio Management

- Utilize multiple models
- Optimize the portfolio by identifying ‘drivers’
- Manage ROE
- Refine data (geocoding, inspections)
- Verify bound information (inspect, enforce)
- Set UW Guidelines to focus on target risks
- Avoid loss leaders

Account Underwriting

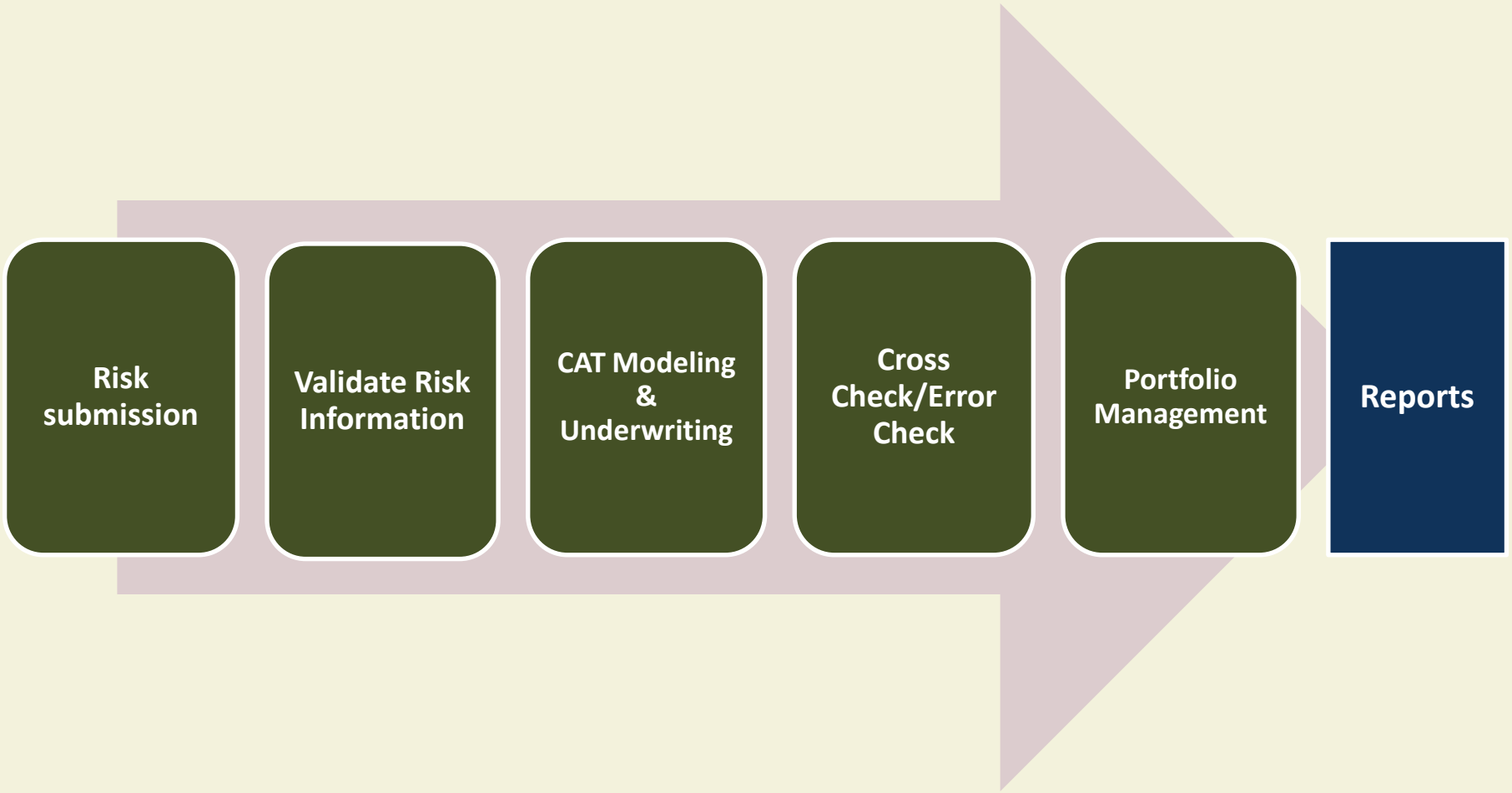
- Cross check submission information
- Execute with high quality data
- Run risks through applicable Wind, EQ, Flood models
- Compare modeled results (understand their weaknesses)
- Consider effect of portfolio and ROC (ROE)

Model Utilization

- Defined modeling ⇨ underwriting workflow
- Skilled underwriting
- Key construction components
- Practical example
- Cat model results comparison

Model Utilization

Defined Modeling ➡ Underwriting Workflow



Model Utilization

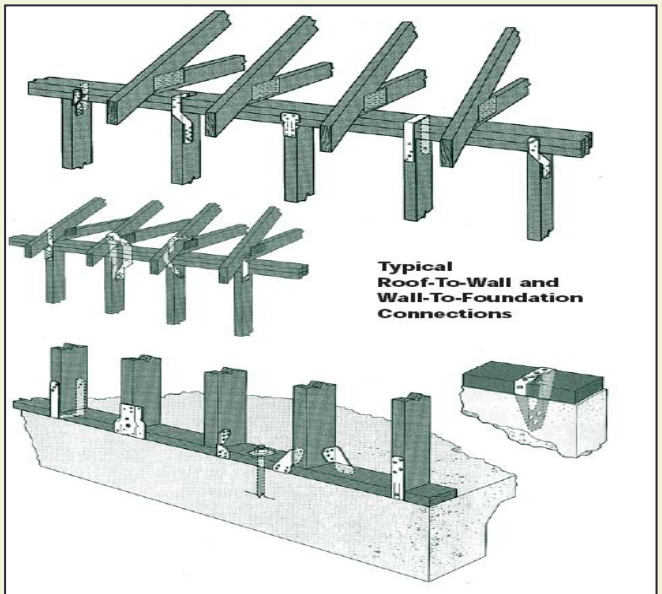
Skilled Underwriting

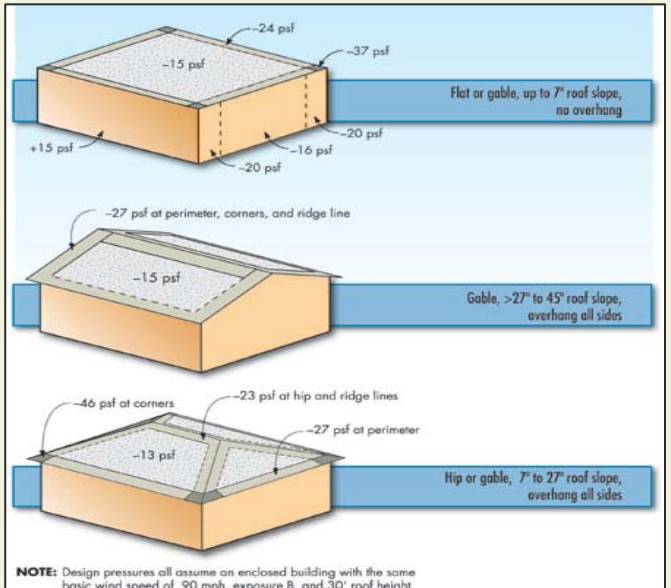
- Focus on target risks
- Utilize the CAT models for what they are – tools to assist in the UW process and decision making
- Understand construction and how CAT models and construction aspects of a building impact its wind resistance
- Utilize all tools available and follow through on the UW process from beginning to end

Model Utilization

Key Construction Components

- Primary Construction Type (Frame, JM, MNC, etc.)
- Roofs (Geometry, Slope, Cover, Anchorage)
- Many others but lessor impact:
  - roof equipment, wall cladding, opening protection, type of roof framing, ground equipment, etc.





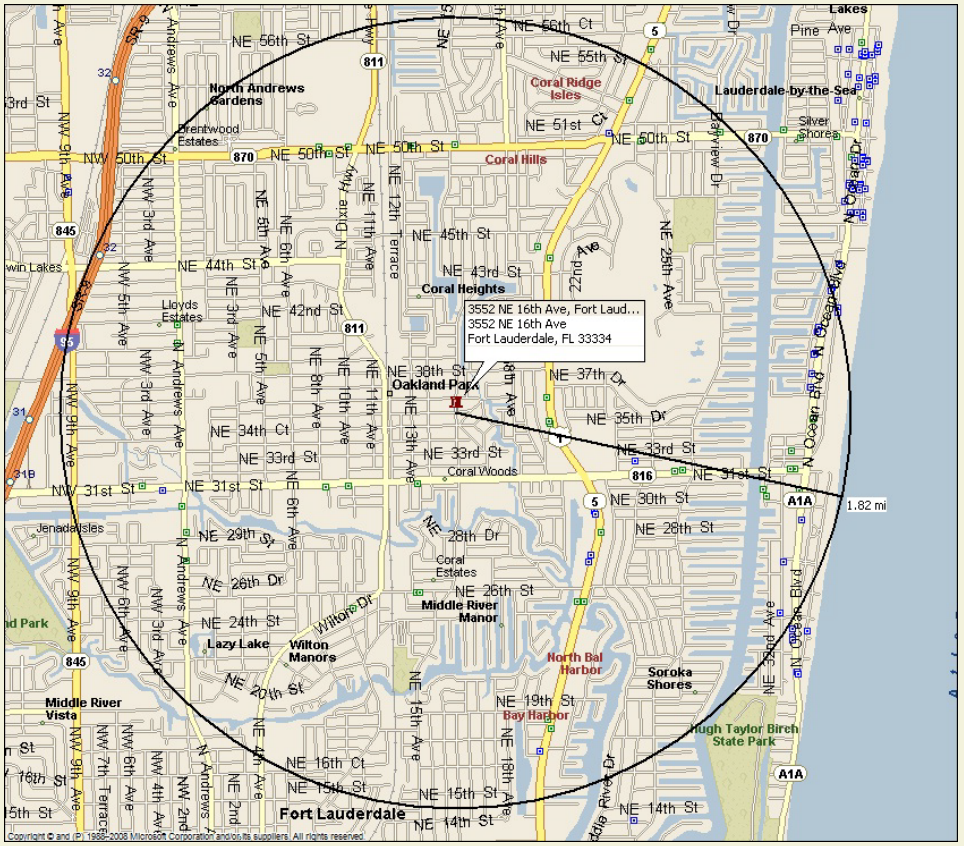
Model Utilization

Practical Example

The Importance of Accurate CAT Modeling in the Underwriting Process

Risk Considered

- Apartment Complex
- $25M TIV
- Ft. Lauderdale, FL
- Constructed in 1986
- Joisted Masonry



Model Utilization

CAT Model Results with Unknown Information

Modeled only based on ISO 2 Construction code, 1986 construction date, and scheduled values

Result	Unknown
RMS/AIR AAL Avg	$153,586
RMS/AIR AAL Avg Rate	0.614
RMS/AIR 250-yr Net PML Avg	$7,496,107

Model Utilization

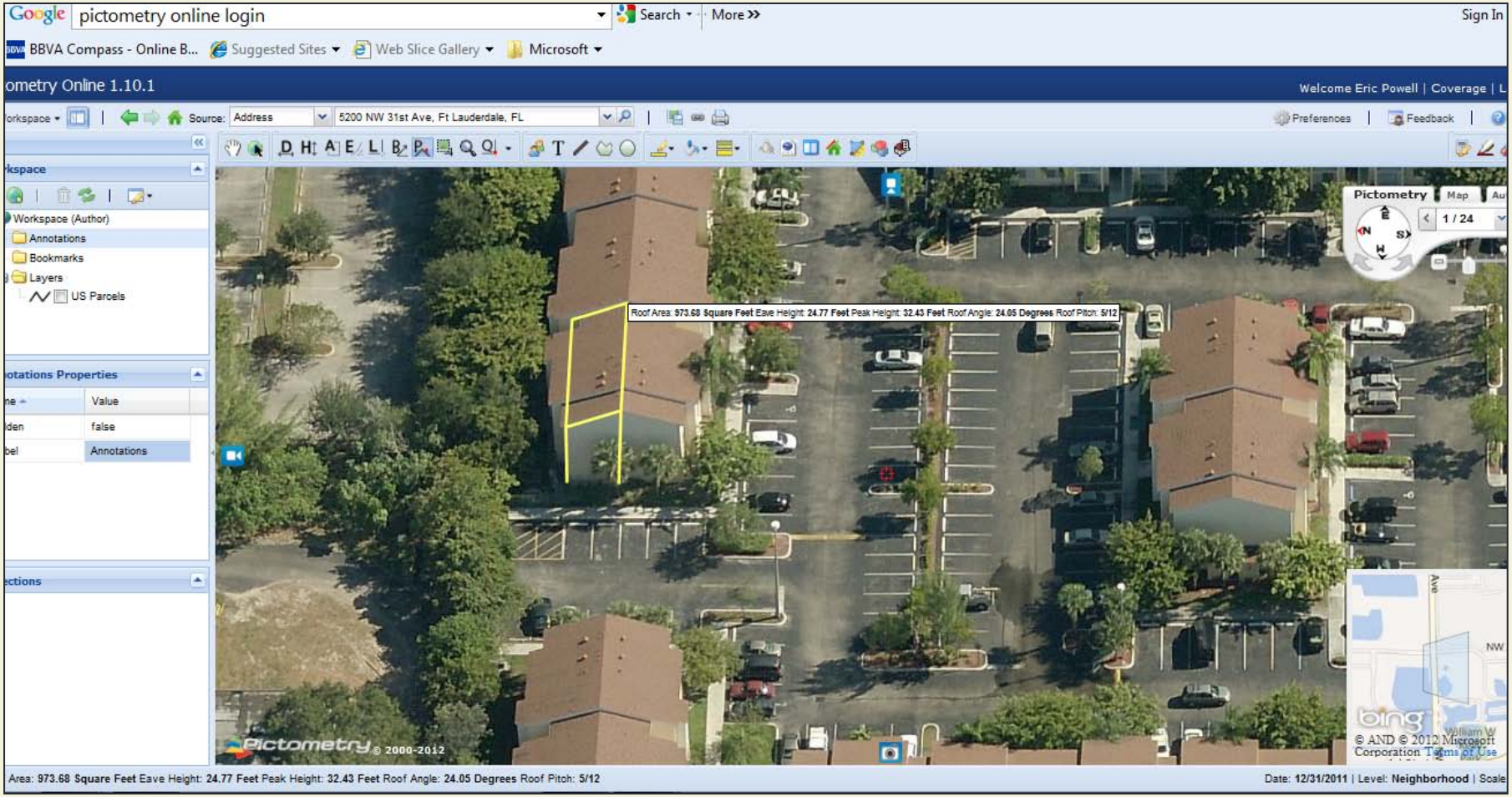
CAT Model Results with Updated SOV from Broker

Model updated with 2-story construction, hip roofs, clay tile roof covering, high strength (double wrap) roof anchorage, roof cover replaced and building rehabbed in 2006

Result	Unknown	Optimistic Broker
RMS/AIR AAL Avg	$153,586	$24,674
RMS/AIR AAL Avg Rate	0.614	0.0987
RMS/AIR 250-yr Net PML Avg	$7,496,107	$1,102,366

Model Utilization

CAT Model Results with Skilled UW Revisions



Model Utilization

CAT Model Results with Skilled UW Revisions

Model updated with Gable Roof Medium Slope, Normal Shingles, Above Average Anchorage (Single Wraps)

Result	Unknown	Optimistic Broker	Skilled Underwriter
RMS/AIR AAL Avg	$153,586	$24,674	$39,787
RMS/AIR AAL Avg Rate	0.614	0.0987	0.159
RMS/AIR 250-yr Net PML Avg	$7,496,107	$1,102,366	$1,854,645

Model Utilization

CAT Model Results with Inspection Information

Model Utilization

CAT Model Results with Inspection Information

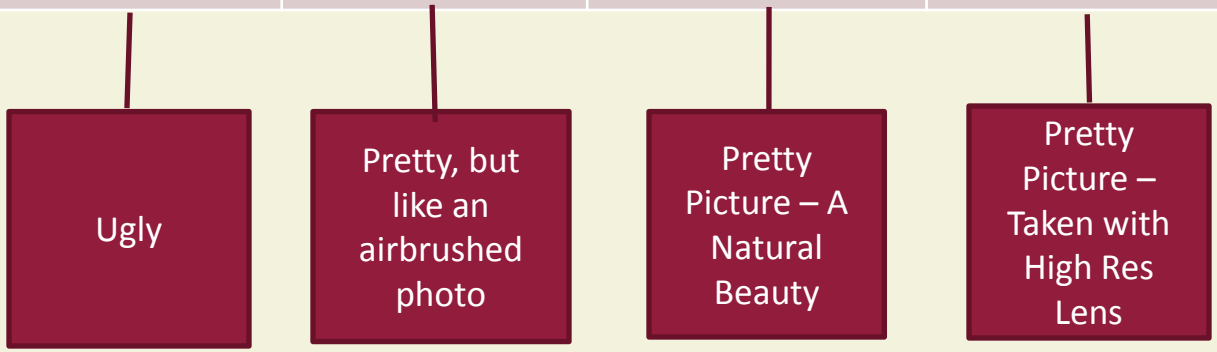
Confirms the roof was damaged and Wilma and roof cover fully replaced 2006 with rated shingles, provides photo confirm roof straps, no parapets, engineered shutters, no roof equipment, etc.

Result	Unknown	Optimistic Broker	Skilled Underwriter	Inspection Verified
RMS/AIR AAL Avg	$153,586	$24,674	$39,787	$28,655
RMS/AIR AAL Avg Rate	0.614	0.0987	0.159	0.114
RMS/AIR 250-yr Net PML Avg	$7,496,107	$1,102,366	$1,854,645	$1,298,335

Model Utilization

CAT Model Results Comparison

Result	Unknown	Optimistic Broker	Skilled Underwriter	Inspection Verified
RMS/AIR AAL Avg	$153,586	$24,674	$39,787	$28,655
RMS/AIR AAL Avg Rate	0.614	0.0987	0.159	0.114
RMS/AIR 250-yr Net PML Avg	$7,496,107	$1,102,366	$1,854,645	$1,298,335



Model Utilization

Real Life Example when modeling tells us one thing and inspection paints another picture…

- The SOV provided by the insured/Broker noted:
  - 1974
  - 2 story
  - Frame with roof clips
  - Condo complex in FL
  - 1998 to 2007 roof coverings
  - 100% occupied
- All of the above true, but the inspection revealed:
  - No maintenance, poor exterior conditions, low occupancy rate, toe-nailed roof anchorage
- Account was cancelled
- Evaluate, model, inspect and follow through

Model Utilization

CAT Model Results Comparison

What if there are 5,000 similar locations in a Portfolio…?

Result	Unknown	Optimistic Broker	Skilled Underwriter	Inspection Verified
RMS/AIR AAL Avg	$767.9 M	$123.4 M	$198.9 M	$143.3 M
RMS/AIR AAL Avg Rate	0.614	0.0987	0.159	0.114
RMS/AIR 250-yr Net PML Avg	$37.48 B	$5.51 B	$9.27 B	$6.49 B

Portfolio Management

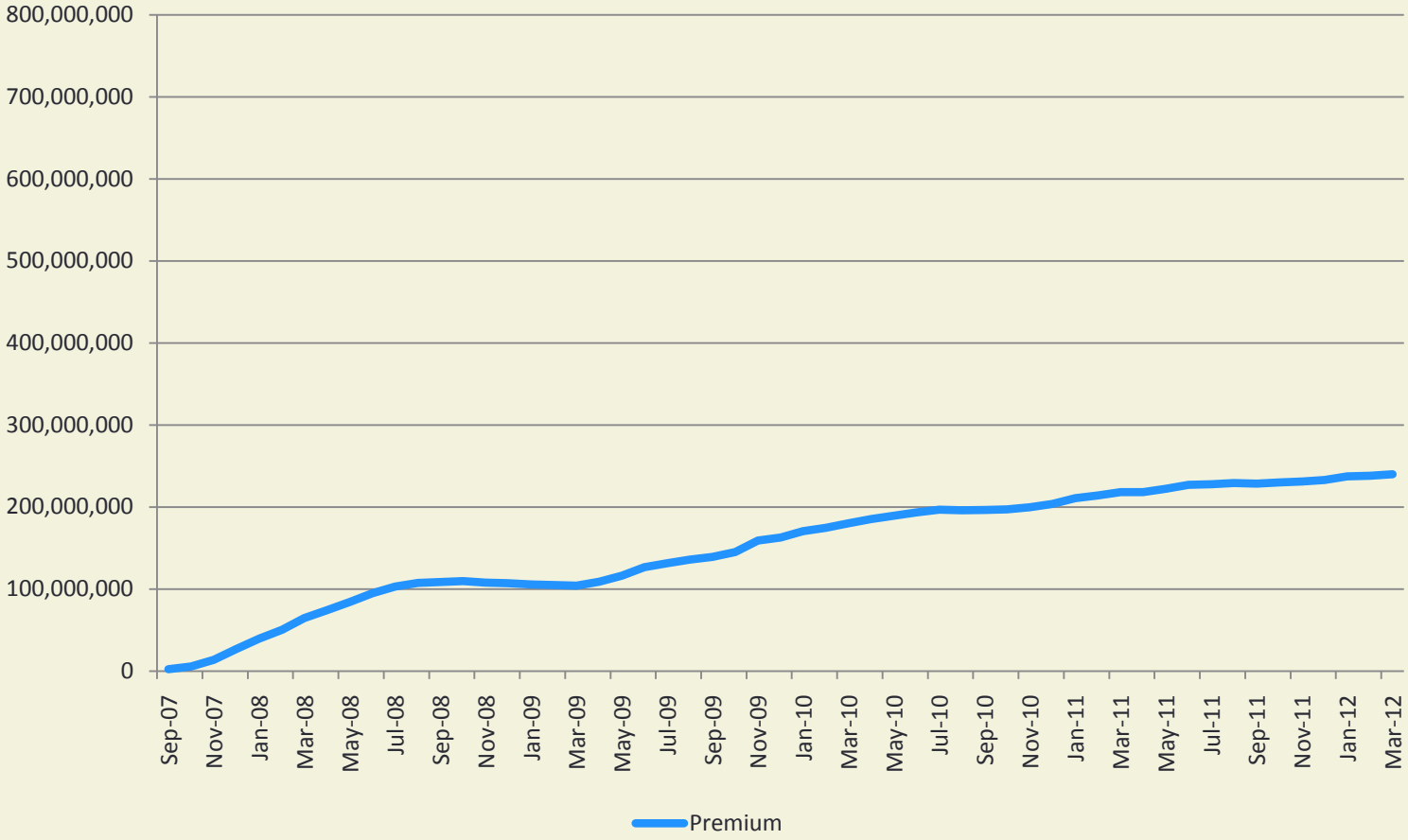
Theory is nice, but what about a real life example?

Background

- Contracted with Amrisc as the sole MGA since 2007
- Initial $50M Surplus
- Florida domiciled, admitted coverage
- Single line of business – Commercial Residential
  - Condominium and Homeowner Associations
- Property Coverage only
- ISO based forms

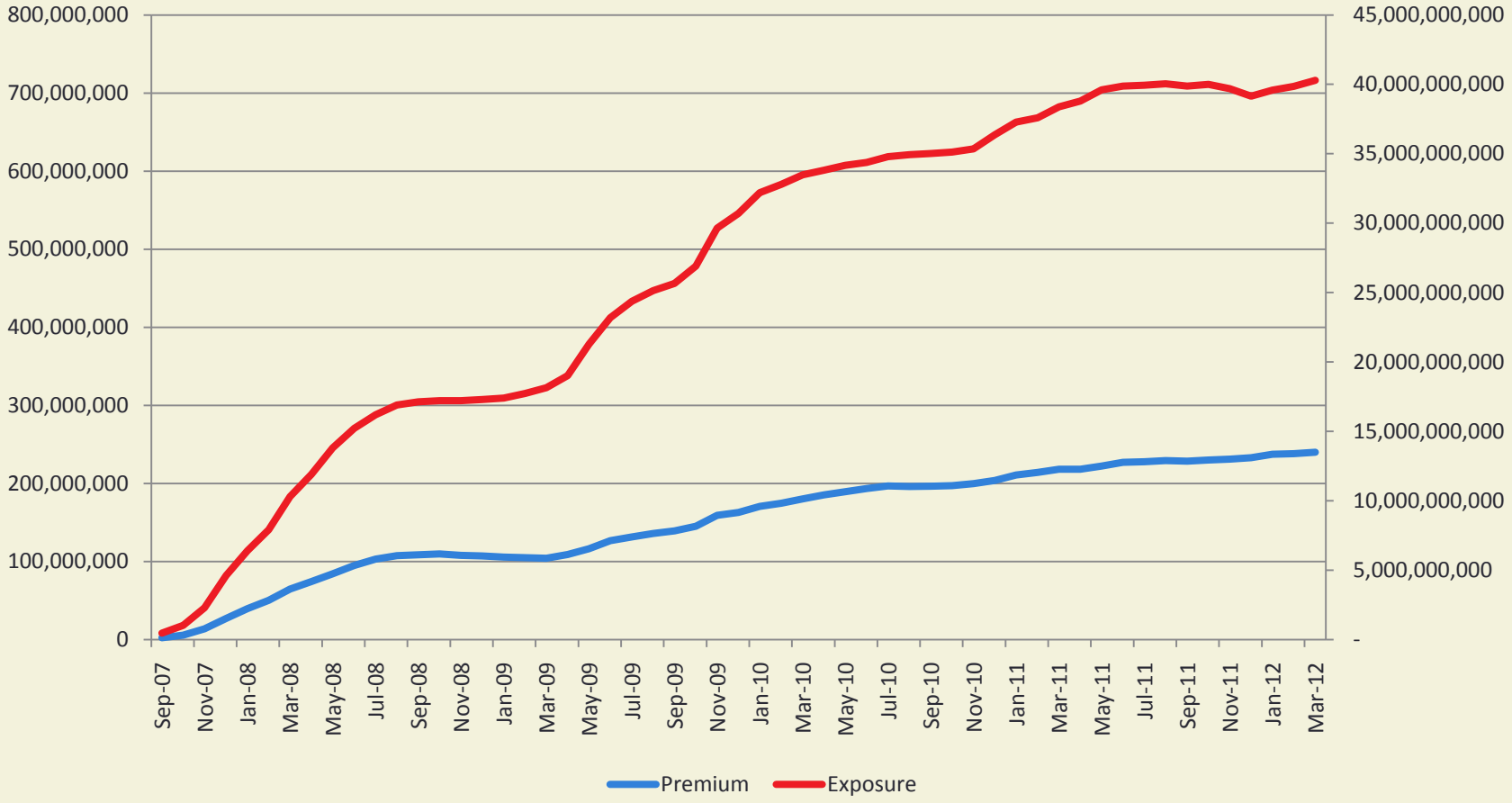
Portfolio Management

Growth Since Inception



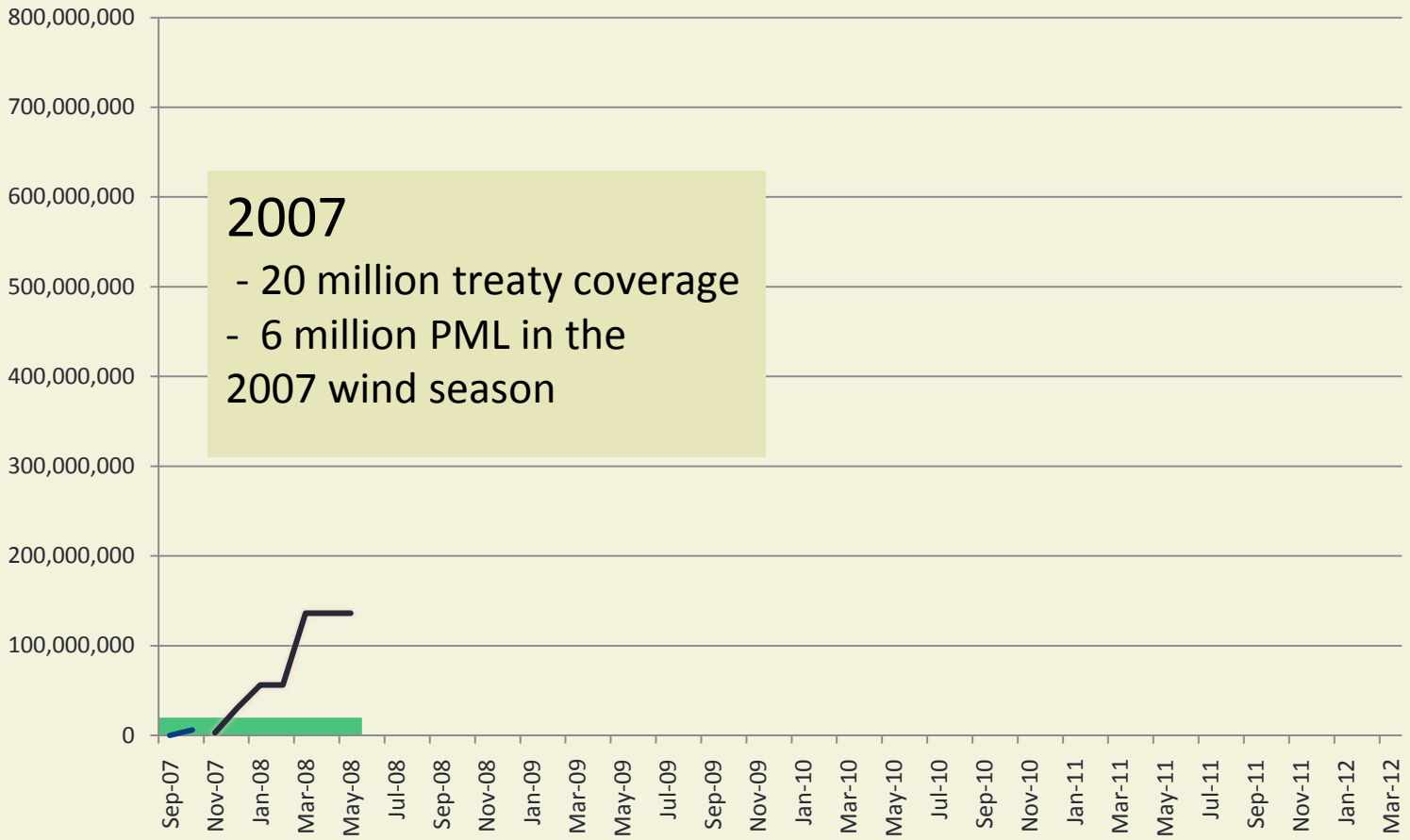
Portfolio Management

Growth Since Inception



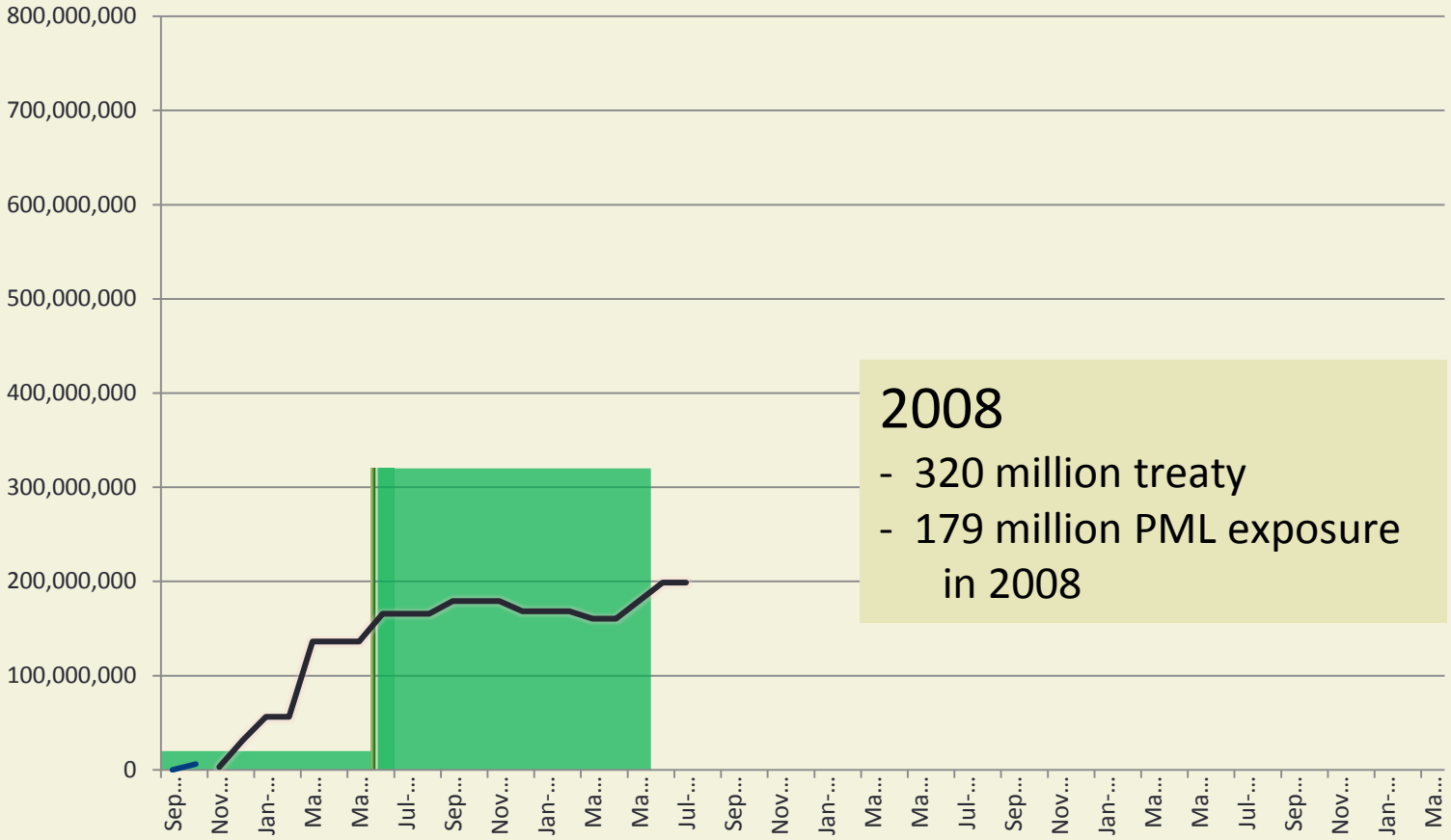
Portfolio Management

Growth Since Inception



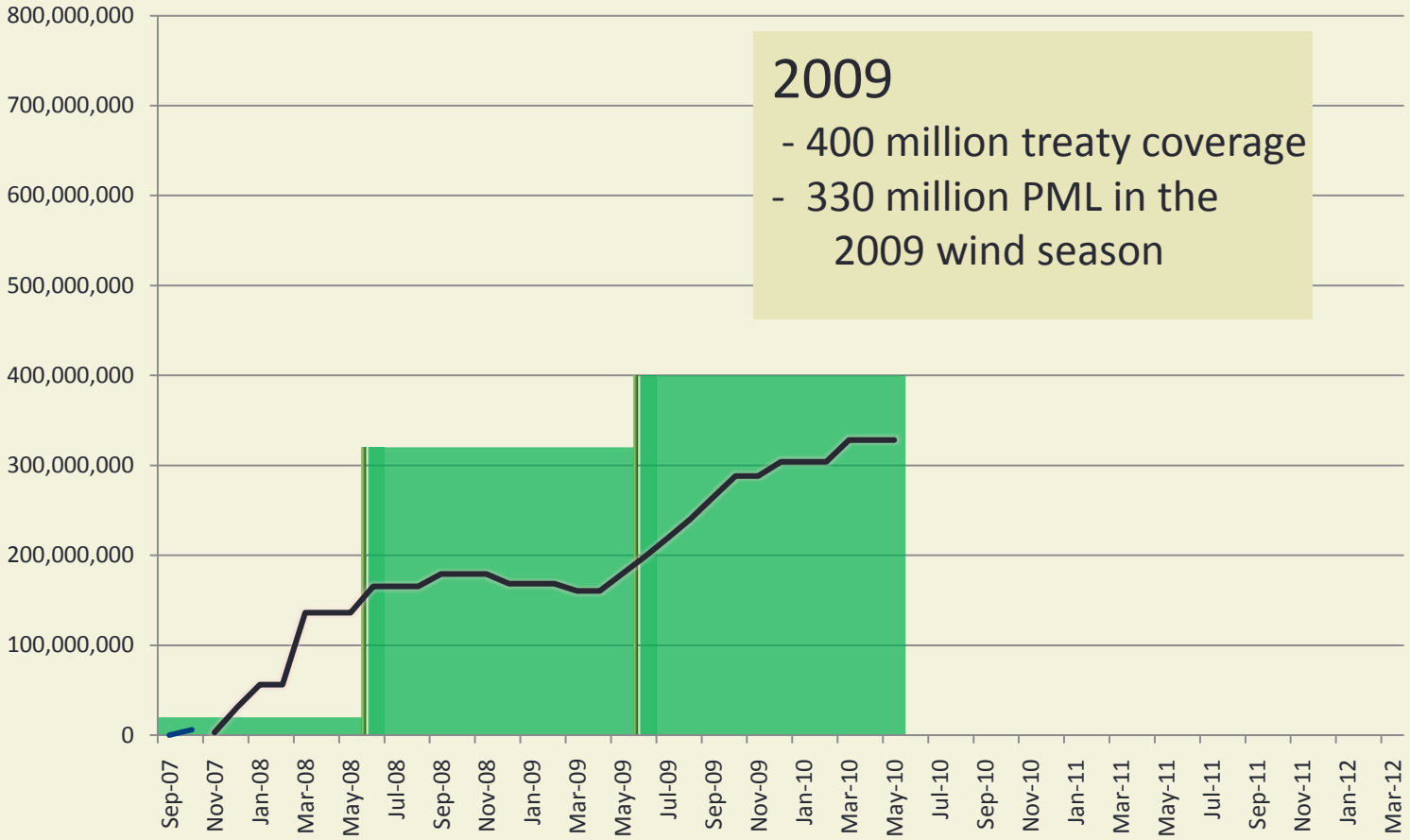
Portfolio Management

Growth Since Inception



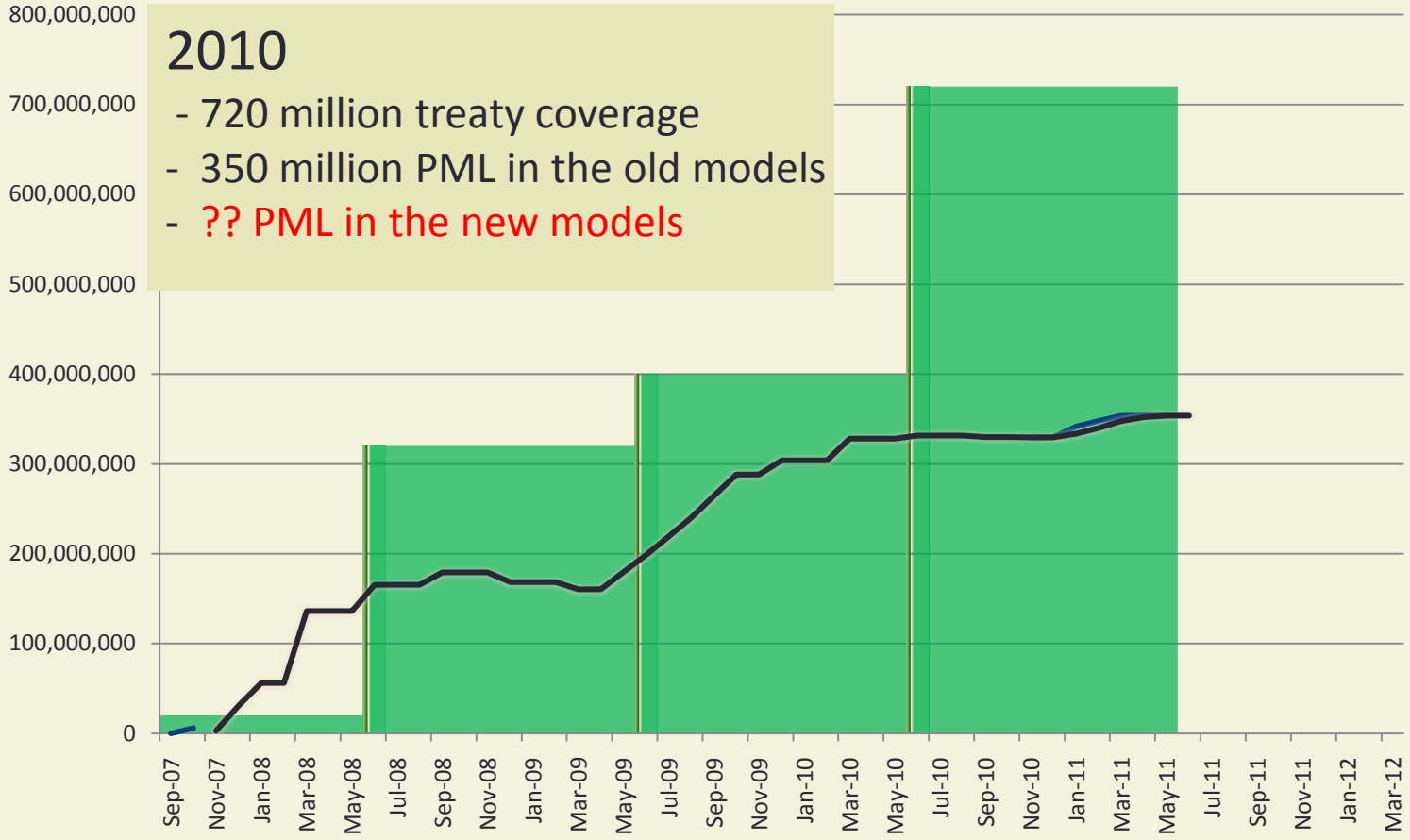
Portfolio Management

Growth Since Inception



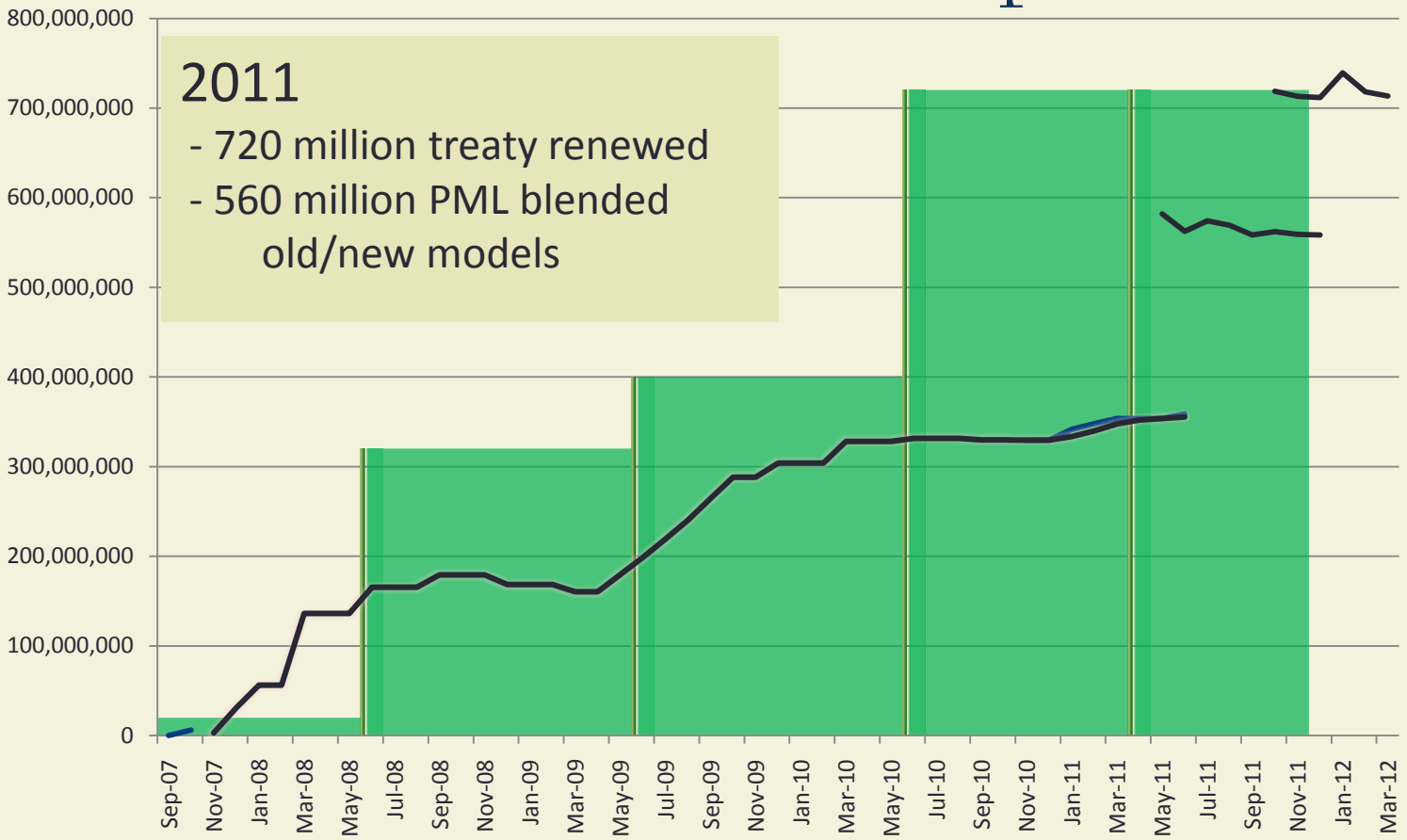
Portfolio Management

Growth Since Inception



Portfolio Management

Growth Since inception



Portfolio Management

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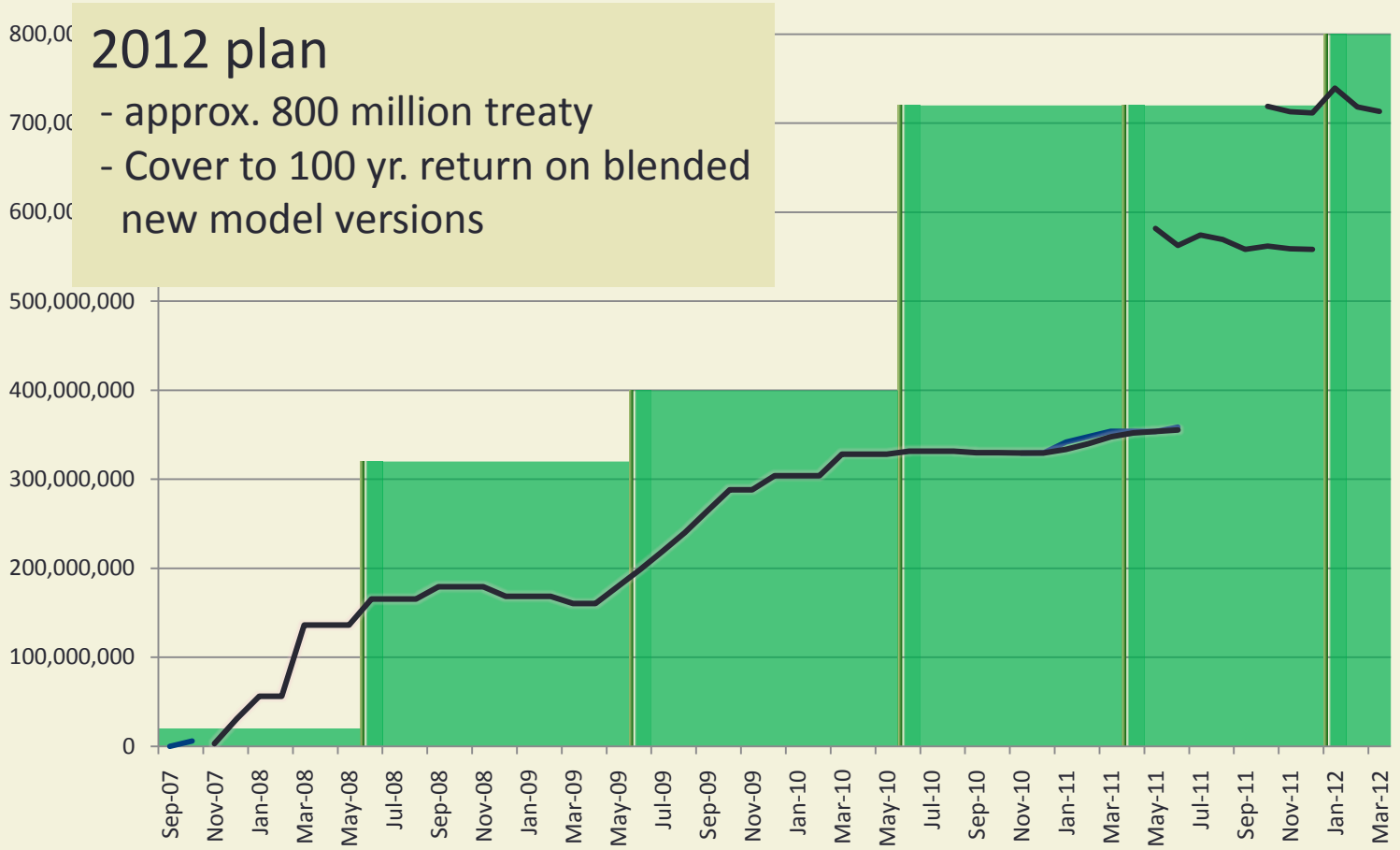


Portfolio Management

How Do We Manage the Exposure?

- Portfolio Management
  - Monthly, quarterly review of portfolio stats
    - Aggregates by state, zip code, territory , etc….

Zip Code	Aggregate
33484	583,784,779
33433	583,349,949
33321	575,133,184
33319	574,300,546
33436	563,454,075
33063	554,429,326
33437	551,297,110
33027	548,880,520

County	Aggregate
Martin	801,302,518
Volusia	772,431,879
Pasco	663,583,911
Orange	480,404,431
Saint Lucie	443,430,049
Charlotte	408,588,673
Indian River	352,892,411
Seminole	296,918,726
Okaloosa	273,045,676
Escambia	241,592,668
Saint Johns	233,436,785
Duval	208,163,512
Polk	169,801,234
Bay	119,555,101
Osceola	114,189,703
Marion	78,557,209
Alachua	75,589,420
Lake	67,082,581
Citrus	66,381,317

Portfolio Management

How Do We Manage the Exposure?

- Portfolio Management
  - Monthly, quarterly review of portfolio stats
    - Aggregates by state, zip code, territory , etc….
    - PML Review of portfolio

Return Period	wind demand (USD) Gross Loss OEP
5,000	5,156,408,762
1,000	2,963,868,090
500	2,156,095,383

Metrics	Base 12/31/2011
TIV	39,150,736,786
1:100 RMS	865,542,194

Contract	Analysis Type	Model/Version	Contract Limit	Result_03_2012	Current %	02_2012 %	01_2012 %
ACIC	EP 100yr	AIR_12.5	720,000,000	536,422,023	74.5%	75.6%	80.4%
ACIC	EP 100yr	RMS_11	1,000,000,000	890,219,257	89.0%	89.2%	90.0%
ACIC	EP 25yr	AIR_12.5	450,000,000	192,122,002	42.7%	42.8%	47.7%
ACIC	EP 25yr	RMS_11	450,000,000	309,397,555	68.8%	68.9%	69.5%
ACIC	EP ACIC BldPML (100yr)	RMS_AIR	750,000,000	713,320,640	95.1%	95.8%	98.6%

Portfolio Management

How Do We Manage the Exposure?

- Portfolio Management
  - Monthly, quarterly review of portfolio stats
    - Aggregates by state, zip code, territory , etc….
    - PML Review of portfolio
    - PML impact account analysis

Account	Expire	Values	PML Impact
165790	03/18/12	2,915,400	273,161
164153	04/04/12	31,598,192	3,162,263
163915	03/19/12	30,151,800	1,438,075
168432	06/01/12	20,021,800	1,545,232
172751	08/09/12	5,666,000	701,863
157111	03/31/12	13,059,180	1,229,238
	01/31/12	4,069,385	276,017
	11/08/12	35,304,184	4,120,497
	06/29/12	12,855,026	613,905
	05/23/12	5,495,000	288,367
	06/01/12	9,438,090	710,685
	02/01/12	15,618,718	849,188
	03/30/12	24,132,688	1,480,333
	06/26/12	8,418,176	905,301
	01/31/12	6,801,663	449,384
	06/01/12	32,833,752	2,118,406
	05/12/12	11,995,200	783,755
	10/29/12	27,491,000	1,929,365
	05/31/12	5,772,000	354,316
	11/30/12	13,992,000	643,410
	06/01/12	18,538,352	1,168,310

Account	Expire	Prem/PML	KeyCounty	UW
161758	04/14/12	59.02%	PINELLAS COUNTY	LHA
159397	03/08/12	59.50%	PASCO COUNTY	MNI
170673	07/11/12	59.54%	MIAMI-DADE COUNTY	STS
175619	12/09/12	59.71%	PINELLAS COUNTY	MNI
178932	10/22/12	59.74%	PINELLAS COUNTY	MNI
157948	03/16/12	59.80%	MANATEE COUNTY	MWA

	Premium	PML	Prem / PML	PML : Prem
Total Portfolio	229,982,626	876,802,694	26.2%	3.8 : 1
Top 80%	208,096,589	701,677,585	29.7%	3.3 : 1
Bottom 20%	21,886,037	175,125,109	12.5%	8 : 1
Bottom 20% use		9.5%	20.0%	47.7%

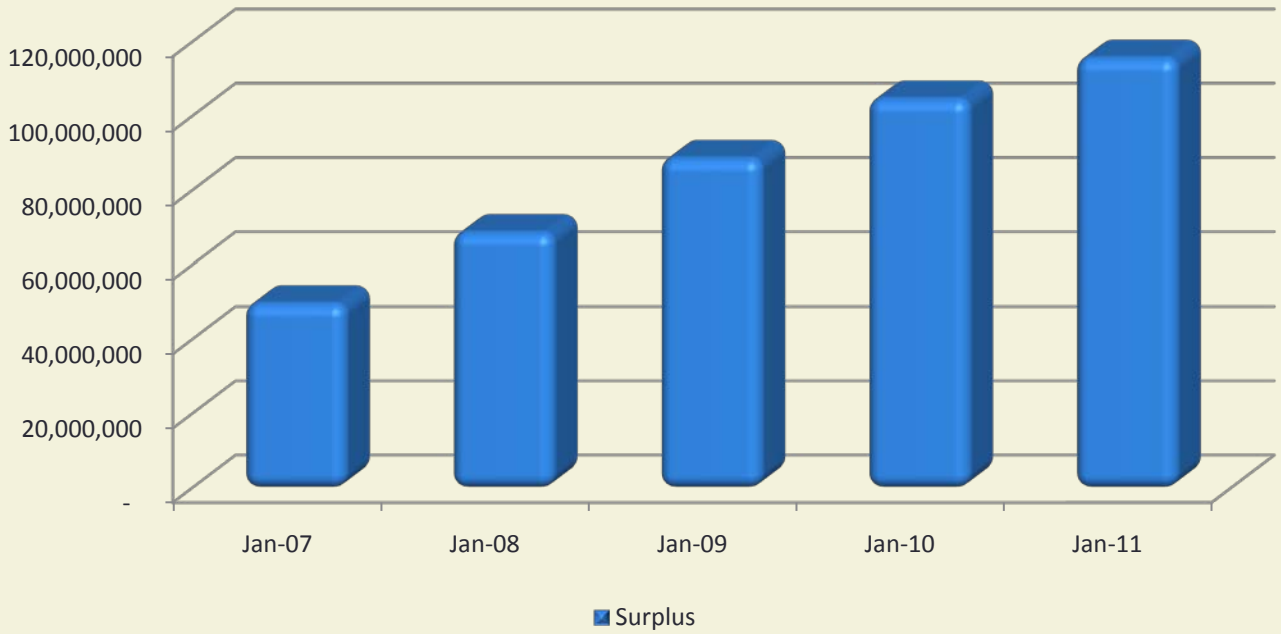
Portfolio Management

How Do We Manage the Exposure?

- Portfolio Management
  - Monthly, quarterly review of portfolio stats
    - Aggregates by state, zip code, territory , etc….
    - PML Review of portfolio
    - PML impact account analysis
    - ROC analysis
    - Market intelligence
    - Planning ahead for changes

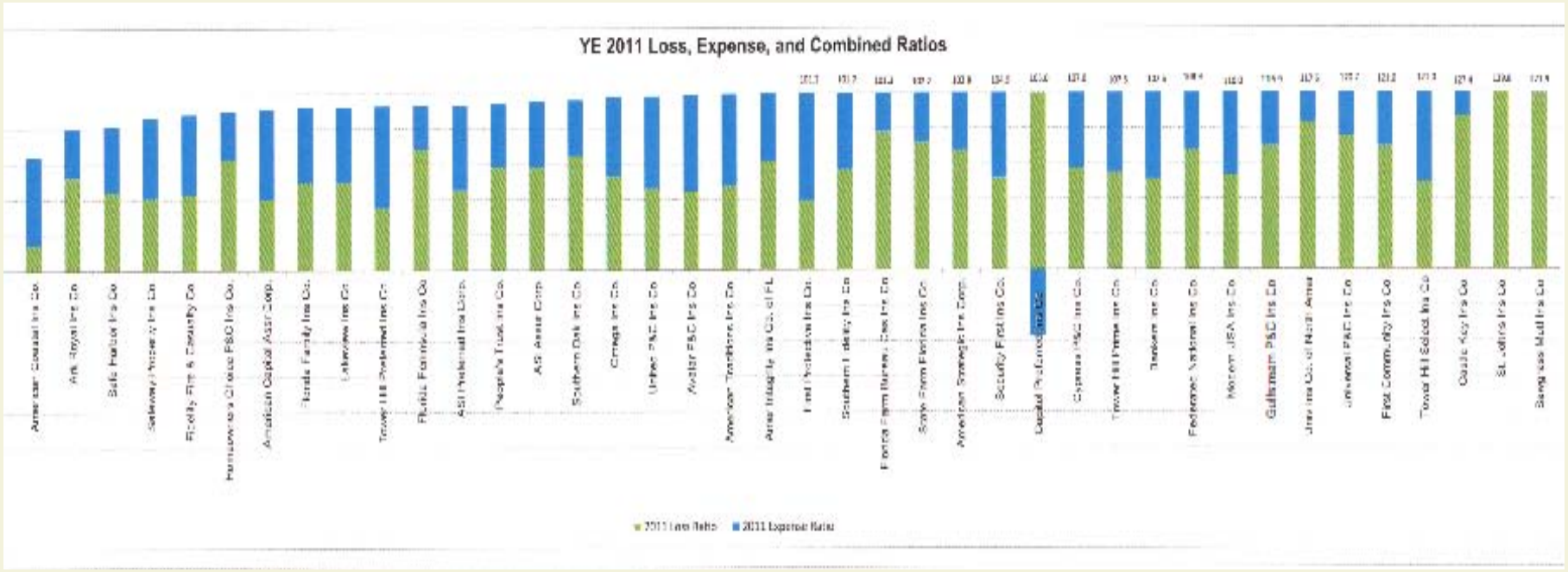
Portfolio Management

Results It Provides



Portfolio Management

Results It Provides



*From SNL Financial Data provided by TigerRisk

Summary

- Remember ALL models' intrinsic fallibility
  - Probability-based historical information; no way to accurately predict future
- Underwriter's skill level is important
- ACCURACY OF DATA INPUT is CRUCIAL
- Portfolios require constant monitoring and adaptations