

Analysis and Interpretation of the Clarity Act Data Call

On Behalf of the Mississippi Insurance Department



April 19, 2022



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I. Background and Approach

Homeowners' insurance premiums in Mississippi are among the most expensive in the U.S., and vary by region, but have stabilized in recent years

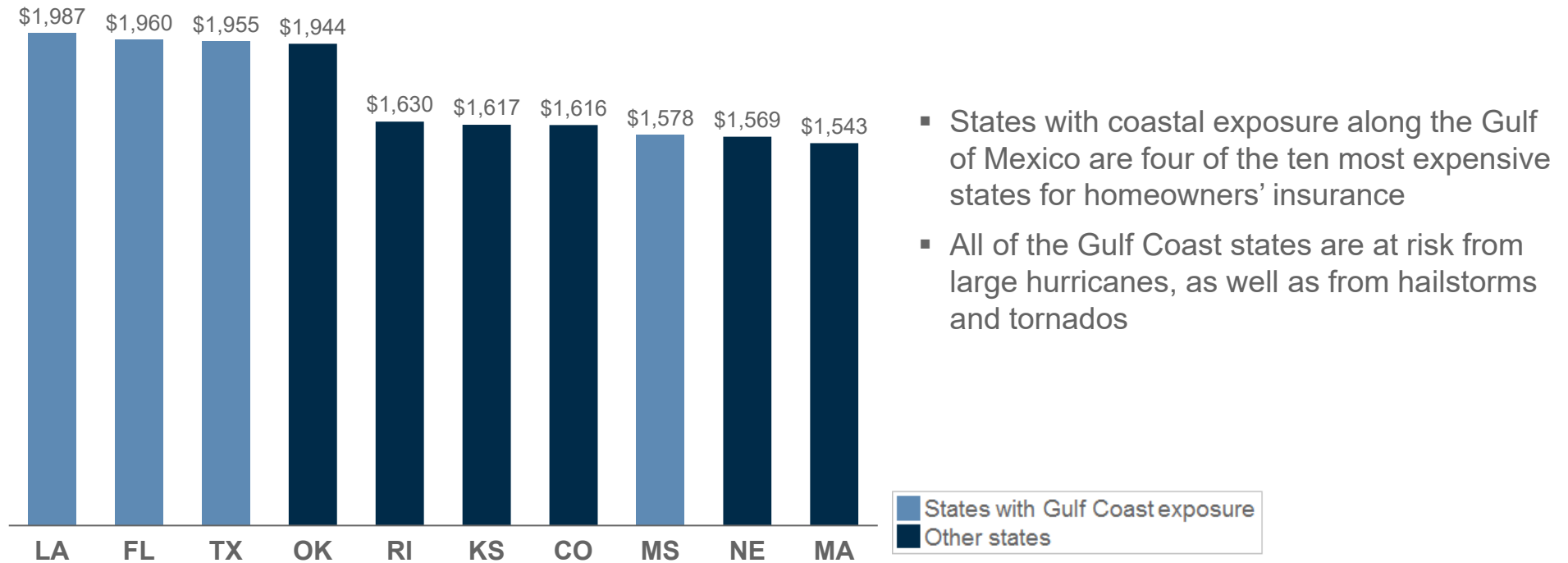
Gulf Coast states, including Mississippi, are among the most expensive U.S states for homeowners' insurance

Homeowners' insurance premiums are higher in Mississippi's Coastal counties than its Inland counties

Mississippi homeowners' insurance premiums stabilized over the last 6 years after more than a decade of growth through 2014

Gulf Coast states, including Mississippi, are among the most expensive U.S. states for homeowners' insurance

Ten Most Expensive U.S. States for Homeowners' Insurance in 2018⁽¹⁾



(1) Underlying data includes policies written by Citizens Property Insurance Corp. (Florida) and Citizens Property Insurance Corp. (Louisiana), Alabama Insurance Underwriting Association, Mississippi Windstorm Underwriting Association, North Carolina Joint Underwriting Association and South Carolina Wind and Hail Underwriting Association. Other southeastern states have wind pools in operation and their data may not be included in this chart. Based on the HO-3 homeowner package policy for owner-occupied dwellings, 1 to 4 family units. Provides "all risks" coverage (except those specifically excluded in the policy) on buildings and broad named-peril coverage on personal property and is the most common package written.

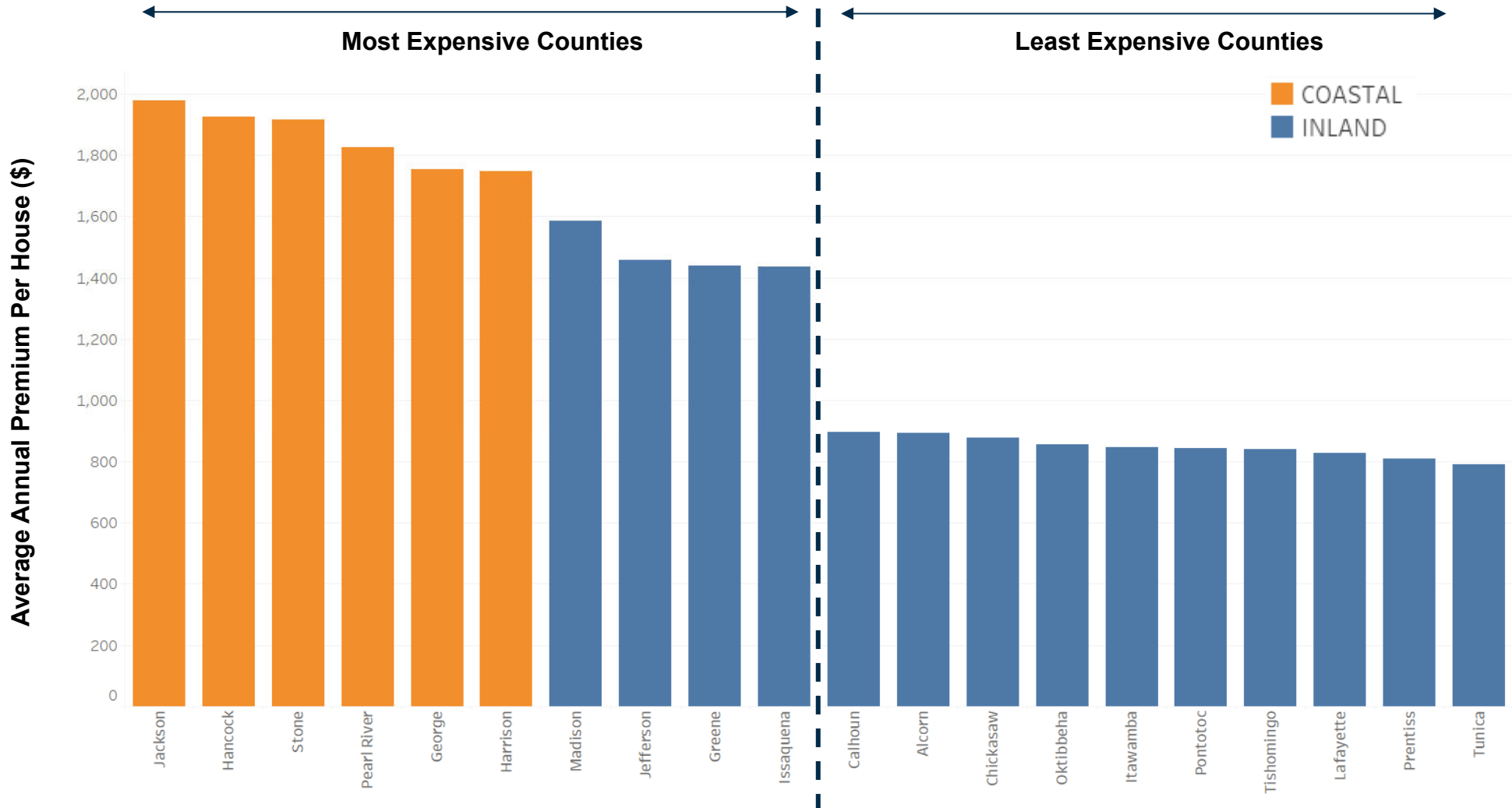
(2) The Texas Department of Insurance developed home insurance policy forms that are similar but not identical to the standard forms. In addition, due to the Texas Windstorm Insurance Association (which writes wind-only policies) classifying HO-1, 2 and 5 premiums as HO-3, the average premium for homeowners' insurance in TX may be overstated.

Note: Average premium = Premiums per house year. A house year is equal to 365 days of insured coverage for a single dwelling. The NAIC does not rank state average expenditures and does not endorse any conclusions drawn from this data.

Source: © 2018 National Association of Insurance Commissioners (NAIC). Reprinted with permission. Further reprint or distribution strictly prohibited without written permission of NAIC.

Homeowners' insurance premiums are higher in Mississippi's Coastal counties than its Inland counties

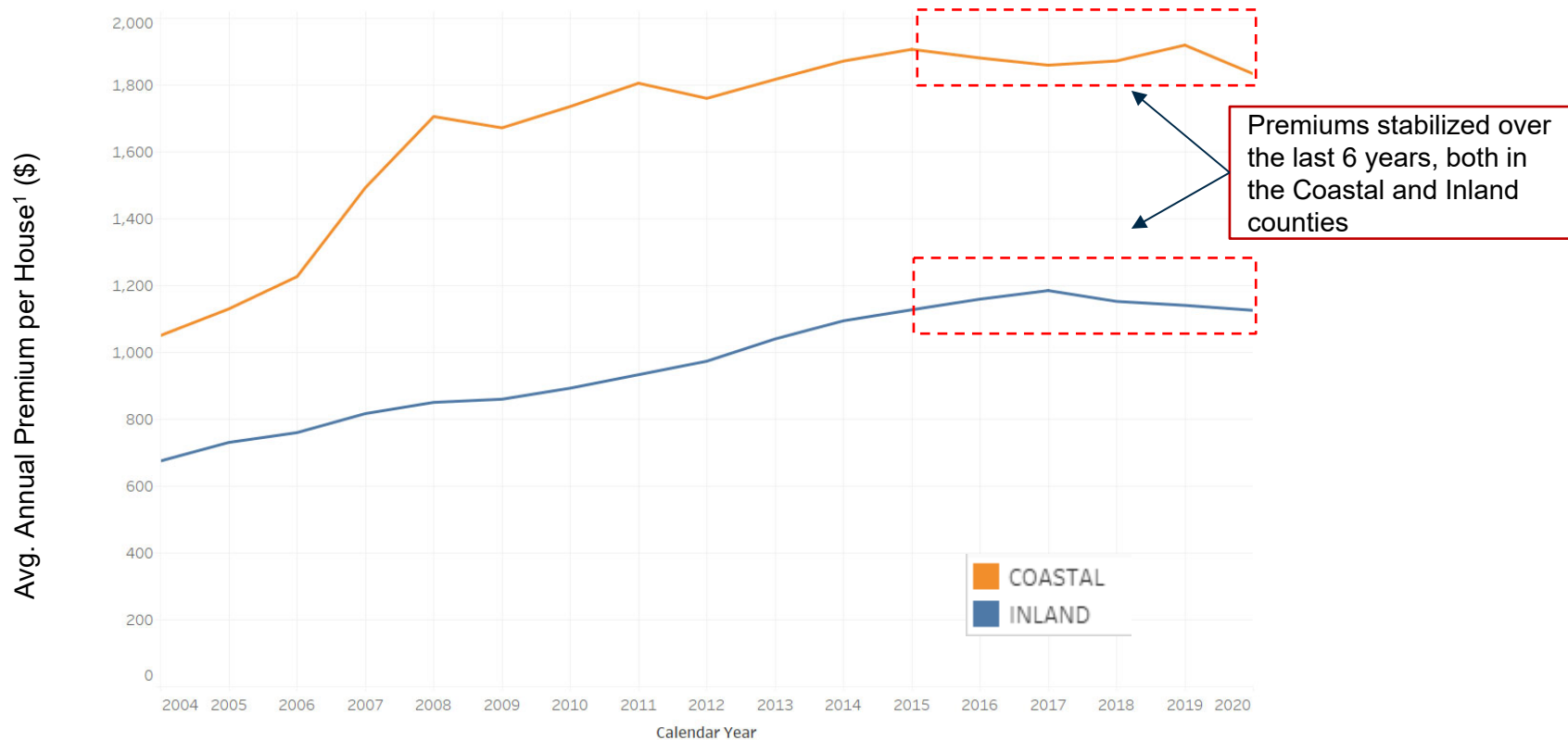
Ten Most and Least Expensive Counties for Homeowners Insurance in the State of Mississippi in 2020



Source: Data provided by Participating Insurers and A&M analysis. Note these results are **averages that include renters (HO4) and condominium (HO6) insurance policies**, whose Direct Earned Premiums are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Mississippi homeowners' insurance premiums stabilized over the last 6 years after more than a decade of growth through 2014

Average Annual Premium for Homeowners' Insurance in Mississippi, 2004-2020



⁽¹⁾Direct Earned Premiums per Adjusted Earned House Year.

Source: Data provided by Participating Insurers and A&M analysis. Note these results are **averages that include renters (HO4) and condominium (HO6) insurance policies**, whose Direct Earned Premiums are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Homeowners' insurance premium rates are requested by insurers, then approved or denied by the Department, based on key actuarial principles

Homeowners' insurance premium rates are based on actuarial estimates of all future costs of providing the insurance for each property individually

When estimating future costs, actuaries must consider historical trends as well as costs related to catastrophes and reinsurance, which is necessary for most insurers

Homeowners' insurance premium rates are based on actuarial estimates of all future costs of providing the insurance for each property individually

The Casualty Actuarial Society has established four ratemaking principles:

Ratemaking is prospective because the property and casualty insurance rate must be developed prior to the transfer of risk

1. A rate is an **estimate** of the expected value of **future costs**
2. A rate provides for **all costs associated with** the transfer of risk
3. A rate provides for the costs associated with **an individual risk** transfer
4. A rate is **reasonable and not excessive, inadequate, or unfairly discriminatory** if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer

Source: *Statement of Principles Regarding Property and Casualty Insurance Ratemaking.*
<https://www.casact.org/sites/default/files/2021-05/Statement-Of-Principles-Ratemaking.pdf>

When estimating future costs, actuaries must consider historical trends as well as costs related to catastrophes and reinsurance, which is necessary for most insurers

- **Trends:** When using past losses as a proxy for expected future losses, consideration should be given to past and prospective changes in claim costs, claim frequencies, exposures, expenses and premiums
- **Catastrophes:** Consideration should be given to the impact of catastrophes on the experience, and procedures should be developed to include an allowance for the catastrophe exposure in the rate. Catastrophe costs include the expected loss caused by the peril under consideration, reinsurance costs to protect the insurer and the cost of increased capital required to maintain solvency after a high-severity event
- **Reinsurance:**¹ Consideration should be given to the effect of reinsurance arrangements. Reinsurance premiums paid less the amount of claims and expenses that are expected to be reimbursed by the reinsurer is the “Net Cost of Reinsurance.”

Insurers must demonstrate to insurance regulators and ratings agencies their ability to pay losses from a major catastrophe (e.g., a “1-in-100” year event)². Typically, insurers with major catastrophic property exposure must purchase reinsurance in order to satisfy this requirement.

¹ *Supplementary comments in blue text*

² See *Catastrophe Analysis in A.M. Best Ratings*, October 13, 2017 (<http://www3.ambest.com/ambv/ratingmethodology/OpenPDF.aspx?rc=190784>)

In 2015, the Mississippi Legislature and Department took action to gather and analyze data in order to clarify whether differences in premiums by region are justified

In 2015, the Mississippi Legislature passed a law (the “Clarity Act”) intended to clarify whether differences in costs justify the differences in premium rates by region

The Department and its consultants gathered data to assess premium adequacy by region, while taking trends, catastrophes and reinsurance costs into account

A&M used two primary analytical approaches to assess premium adequacy by region: the “Actual” and “Modeled” approaches

In 2015, the Mississippi Legislature passed a law (the “Clarity Act”) intended to clarify whether differences in costs justify the differences in premium rates by region

Purpose

The Clarity Act requires insurers to provide data (via a “Data Call”) to the Department that can be used for the purposes of determining the accuracy and adequacy of catastrophic models and the adequacy of homeowners’ insurance premium rates

Data Scope & Structure

- Include condominium insurance, dwelling fire policies, renters/tenants' insurance and mobile home/manufactured housing property insurance policies
 - Submit data **by zip code**, for each calendar year from 2004 through 2020¹
 - Submit data by policy category, including those that (i) cover windstorms and other perils; (ii) exclude windstorm coverage; (iii) only cover windstorms
-

Required Data Fields

- Direct incurred losses
- Direct earned premiums
- Policy limits
- Reinsurance
- Allocated loss adjustment expense
- The number of policies in force by earned house years

Source: Mississippi Legislature, Regular Session 2015, House Bill No. 739 – the “Property Insurance Clarity Act”

<http://www.mid.ms.gov/companies/madc/HB0739SG.pdf>

¹ In 2015, carriers submitted data from 2004 through 2014. In 2018, they submitted data from 2015 through 2017 and in 2021, submitted data from 2018 through 2020

The Department and its consultants gathered data to assess premium adequacy by region, while taking trends, catastrophes and reinsurance costs into account

Required by Clarity Act

The data submitted in response to the Clarity Act, including premiums, losses and certain expenses by type of policy

Unallocated Expenses

- Unallocated Loss Adjustment Expense¹
- Commissions and Brokerage Expenses
- Taxes, Licenses and Fees
- Other Acquisition Expenses
- General Expenses

Data by Type of Peril

- **Hurricane or Named Storm** such as hurricane Katrina
- **Non-Named Wind Catastrophe** such as major hailstorms or tornados
- **Other Wind**, including any windstorm or winter storm that isn't a catastrophe
- **Other Non-Named Catastrophe** such as wildfires or explosions
- **All Other Perils** that aren't included in the above categories

Catastrophe Model Results

- Key inputs to and outputs from catastrophe models, by zip code, including:
 - Model inputs: policy count, in-force value, premiums
 - Model outputs: average annual loss (“AAL”) predicted by the catastrophe model

Reinsurance Data

- Description of the reinsurance program structure used by the insurer
- Summary of estimated and historical losses ceded to reinsurers

¹ Also known as “LAE-Adjusting and Other”

A&M used two primary analytical approaches to assess premium adequacy by region: the “Actual” and “Modeled”¹ approaches

In both approaches, the **Unallocated Expense** estimates were derived from Annual Statements, and the **Net Cost of Reinsurance** was estimated by Merlinos & Associates² from data provided by Participating Insurers

The primary difference between the approaches is in the treatment of Premiums, Losses and ALAE:

1 Actual Premiums, Losses, ALAE:

- Are based on the raw results from the Data Call as reported by Participating Insurers
- Do not consider trends such as the impact of inflation or changes in frequency and severity of losses
- Will tend to overstate catastrophe losses if the time period covered by the reported data includes a very large (e.g., “1-in-100” year) event, and understate catastrophe losses if there is no such event in the reported data

2 Modeled Premiums, Losses, ALAE:

- Modeled premiums and losses are based on the results from the Data Call, adjusted to reflect (i) catastrophe model estimates of hurricane and severe convective storm losses, and (ii) trends in premiums and other costs over the trailing six years¹ through 2020
- Modeled ALAE is estimated based on each insurer’s average ratio of ALAE to direct losses incurred
- This approach is consistent with the actuarial principles outlined in the prior section of our report

¹ In certain areas of this report, we use the word “**Trended**” rather than “**Modeled**” when referring to metrics – such as premium – that are derived from historical data adjusted to reflect historical trends, rather than from catastrophe model results.

² Merlinos & Associates is an actuarial consultancy retained by the Department to assist with this project.

II. Results

The data shows that the regional premium differential is attributable to hurricane risk, which causes higher costs for insurers on the Coast than Inland

Coastal costs are higher than Inland costs

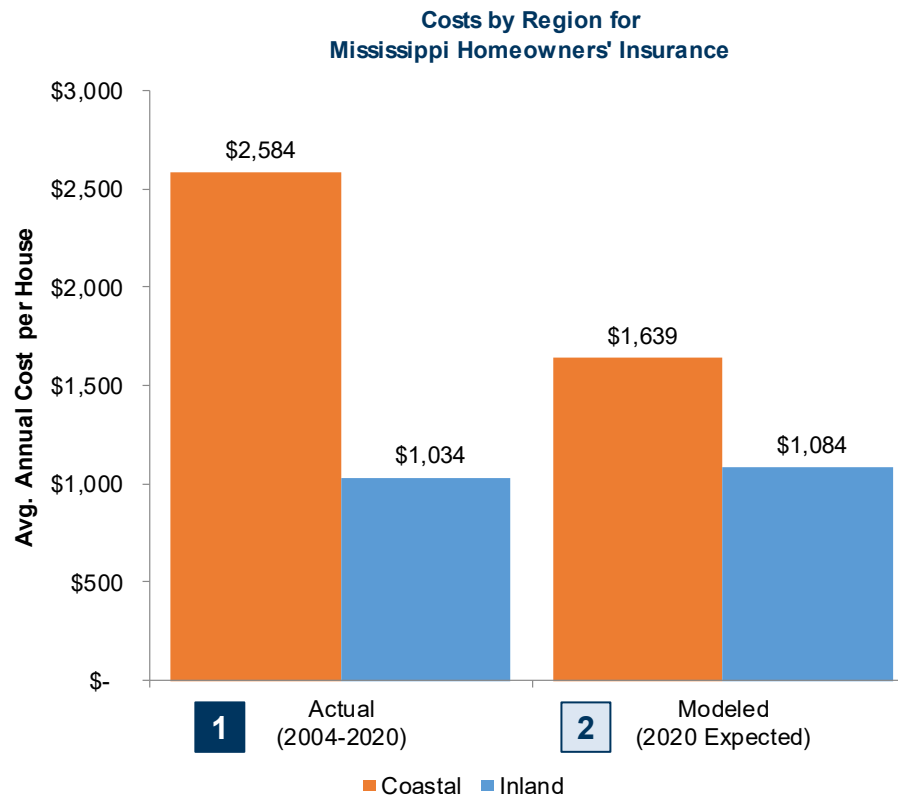
Hurricane losses and reinsurance costs are the primary causes of the difference in insurers' Actual cost by region from 2004 through 2020

Hurricane losses and reinsurance costs are the primary causes of the difference in insurers' Modeled cost by region in 2020

Higher hurricane losses and reinsurance costs in the Coastal region more than offset lower costs from other perils¹

¹ Perils other than hurricane include hail, tornados, other severe storms, fire and other.

Coastal costs are higher than Inland costs



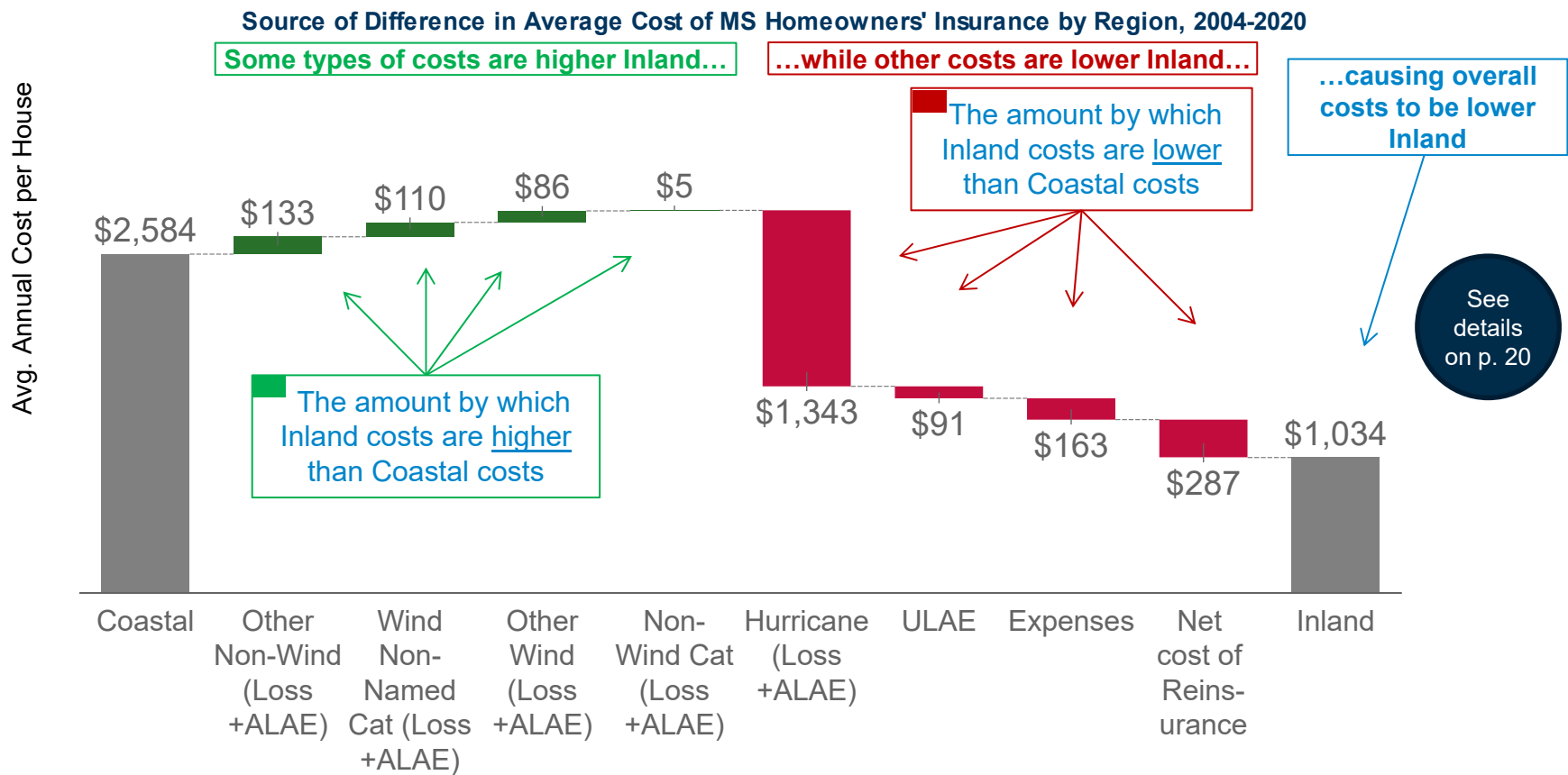
Source: Data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis

1. "Actual" figures represent the aggregate Combined Costs over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. Certain components of "Modeled" Combined Costs are adjusted to reflect trends over the past 6 years, and to replace actual wind catastrophe losses and ALAE with the Modeled amounts. Unallocated costs are estimated both in the "Actual" and "Modeled" approaches from publicly-available sources, including Annual Statement page 14 ("State Pages") and the Insurance Expense Exhibit of the Participating Insurers.
2. Note these **results are averages that include renters (HO4) and condominium (HO6) insurance policies**, whose losses are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Hurricane losses and reinsurance costs are the primary causes of the difference in insurers' Actual cost by region from 2004 through 2020

1 Actual

Difference in Actual Total Cost



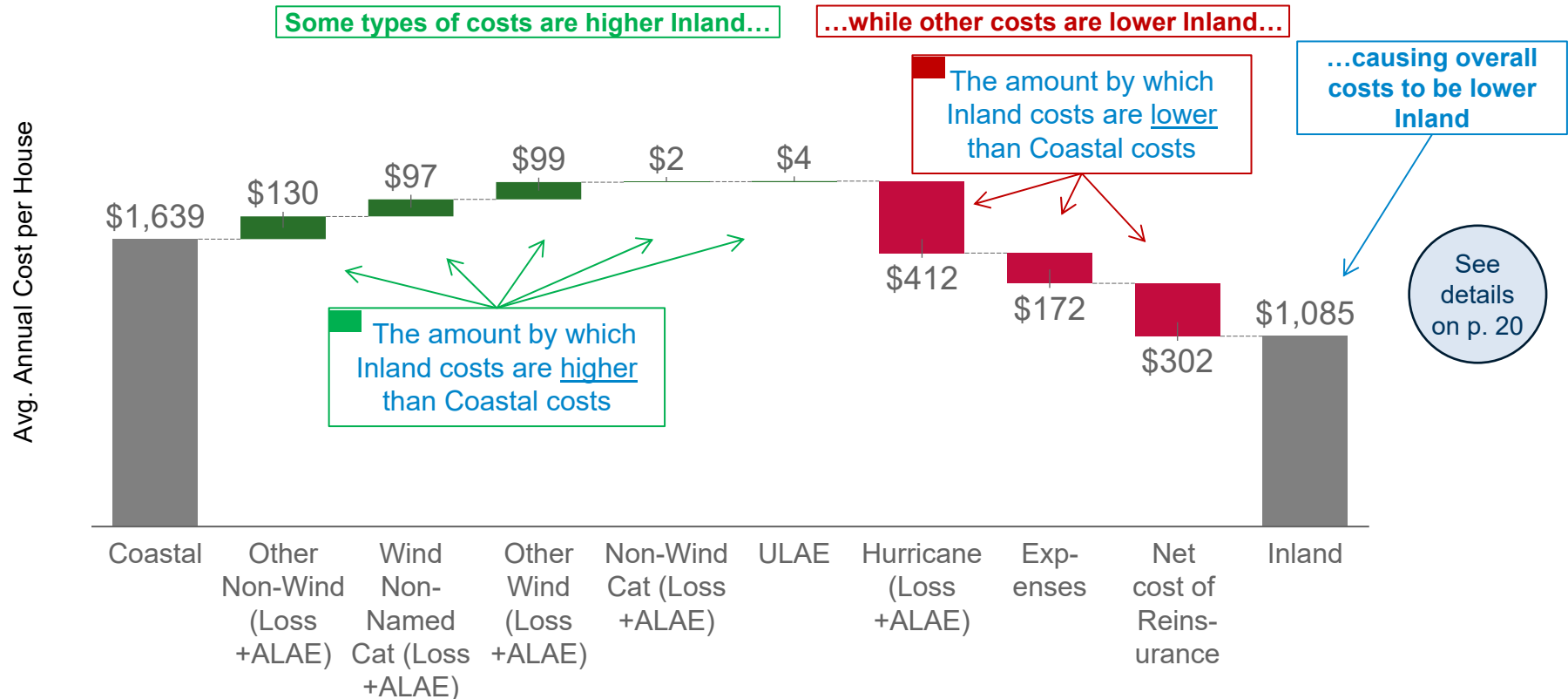
Source: Participating Insurers' Annual Statements, data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis 1. Figures represent the aggregate Combined Costs over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. ULAE, Expenses and Net Cost of Reinsurance are estimated from information reported in Participating Insurers' Annual Statements and data submitted to the Department. Note these results are averages that include renters (HO4) and condominium (HO6) insurance policies, whose losses are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Hurricane losses and reinsurance costs are the primary causes of the difference in insurers' Modeled cost by region in 2020¹

2 Modeled

Difference in Modeled Total Cost

Source of Difference in Average Cost of MS Homeowners' Insurance by Region, 2020 Expected



Source: Participating Insurers' Annual Statements, data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis 1. Figures represent the aggregate Combined Costs over the past 6 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. Certain components of "Modeled" Combined Costs are adjusted to reflect trends since 2015, and to replace actual wind catastrophe losses and ALAE with the Modeled amounts. ULAE, Expenses and Net Cost of Reinsurance are estimated from information reported in Participating Insurers' Annual Statements and data submitted to the Department. Note these results are averages that include renters (HO4) and condominium (HO6) insurance policies, whose losses are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Higher hurricane losses and reinsurance costs in the Coastal region more than offset lower costs from other perils

1 Actual (2004-2020)

2 Modeled (2020 Expected)

See p. 18 for a graphical illustration of the Difference in Actual costs

See p. 19 for a graphical illustration of the Difference in Modeled costs

| | Amount per EHY | | |
|-----------------------------|----------------|---------|------------|
| | Coastal | Inland | Difference |
| Premiums | 1,677 | 982 | \$695 |
| Loss + ALAE by Peril | | | |
| Hurricane | 1,447 | 104 | 1,343 |
| Wind Non-Named Catastrophe | 9 | 118 | (110) |
| Other Wind | 32 | 118 | (86) |
| Non-Wind Catastrophe | 2 | 7 | (5) |
| Other Non-Wind | 202 | 335 | (133) |
| Total Losses + ALAE | 1,691 | 682 | 1,009 |
| ULAE | 166 | 75 | 91 |
| Other Expenses | 421 | 258 | 163 |
| Net Reinsurance Load | 306 | 20 | 287 |
| Combined Costs | \$2,584 | \$1,034 | \$1,550 |

| | Amount per EHY | | |
|--|----------------|---------|------------|
| | Coastal | Inland | Difference |
| | 1,861 | 1,143 | 718 |
| | 456 | 44 | 412 |
| | 36 | 134 | (99) |
| | 36 | 133 | (97) |
| | 3 | 5 | (2) |
| | 235 | 364 | (130) |
| | 765 | 681 | 84 |
| | 70 | 74 | (4) |
| | 479 | 307 | 172 |
| | 325 | 23 | 302 |
| | \$1,639 | \$1,084 | \$555 |

Much higher Coastal

Lower Coastal

Higher Coastal

Source: Participating Insurers' Annual Statements, data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis

1. "Actual" figures represent the aggregate Combined Costs over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. ULAE and Other Expenses are estimated from publicly-available sources, including Annual Statement page 14 ("State Pages") and the Insurance Expense Exhibit of the Participating Insurers. Net Cost of Reinsurance is estimated from data submitted to the Department.
2. "Modeled" Combined Costs are adjusted to reflect trends over the past 6 years, and to replace actual wind catastrophe losses and ALAE with the Modeled amounts.
3. Note these results are averages that include renters (HO4) and condominium (HO6) insurance policies, whose losses are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Analysis of premiums vs. costs shows that, relative to costs, Modeled (i.e., expected 2020) premiums are reasonably comparable in the Coastal and Inland regions

Coastal premiums are higher than Inland premiums

Actual premiums are lower than costs, while trended / modeled premiums are higher than costs, both on the Coast and Inland

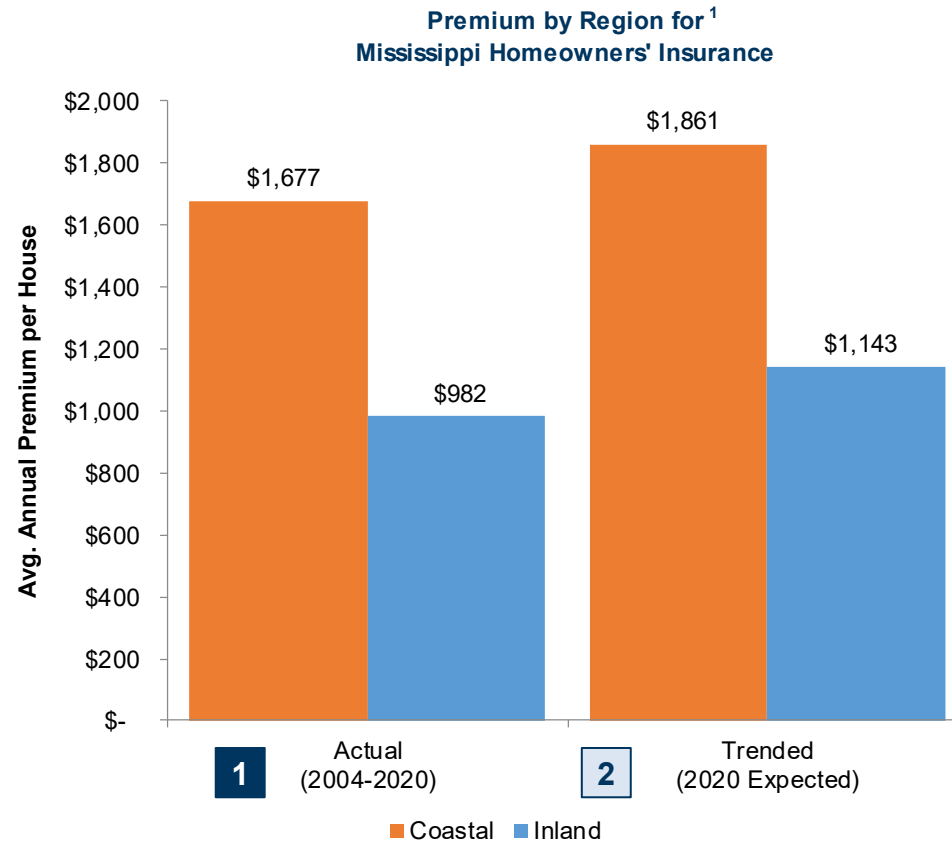
Combined Ratio can be used to compare relative premium adequacy across regions

The expected (i.e., Modeled) combined ratios indicate that premium adequacy is reasonably comparable across the Coastal and Inland regions

The components of the calculated combined ratios, and their differences by region, vary somewhat by approach

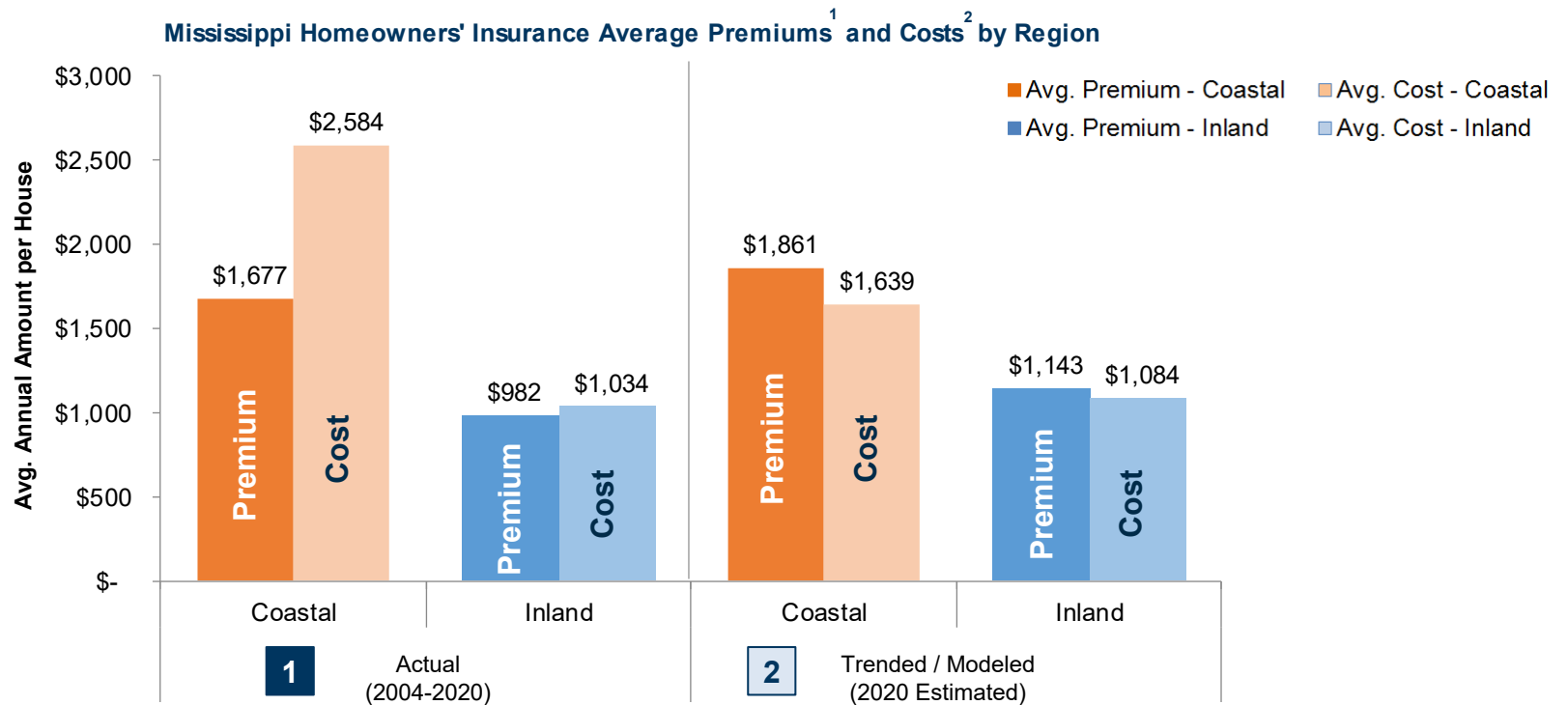
Returns on net worth in the MS homeowners' insurance market have been lower than on national homeowners' insurance and other industries over the last 31 years

Coastal premiums are higher than Inland premiums



Source: Data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis
1. The "Actual" figures represent the aggregate Direct Earned Premium ("DEP") over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. "Trended" DEP is adjusted to reflect trends in premiums over the past 6 years. Note these **results are averages that include renters (HO4) and condominium (HO6) insurance policies**, whose premiums are substantially lower than those for policies that cover structural damage to the property as well as to contents.

Actual premiums are lower than costs, while trended / modeled premiums are higher than costs, both on the Coast and Inland



Source: Participating Insurers' Annual Statements, data submitted to the Department by Participating Insurers in response to the Data Call, and A&M analysis

1. "Actual" Avg. Premium represents the aggregate Direct Earned Premium ("DEP") over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. "Trended" DEP is adjusted to reflect trends over the past 6 years as further described elsewhere in this report.
2. "Actual" Avg. Cost represents the aggregate Combined Costs over the past 17 years covered by the Data Call, divided by the aggregate Adjusted Earned House Years during the same period. Certain components of "Modeled" Combined Costs are adjusted to reflect trends over the past 6 years as further described in the section of this report, and to replace actual wind catastrophe losses and ALAE with the Modeled amounts. Unallocated costs and the net cost of reinsurance are estimated both in the "Actual" and "Modeled" approaches. **The above results are averages that include renters (HO4) and condominium (HO6) insurance policies, whose premiums are substantially lower than those for policies that cover structural damage to the property as well as to contents.**

Combined Ratio can be used to compare relative premium adequacy across regions

Combined Ratio is a measure of all costs per dollar of premium

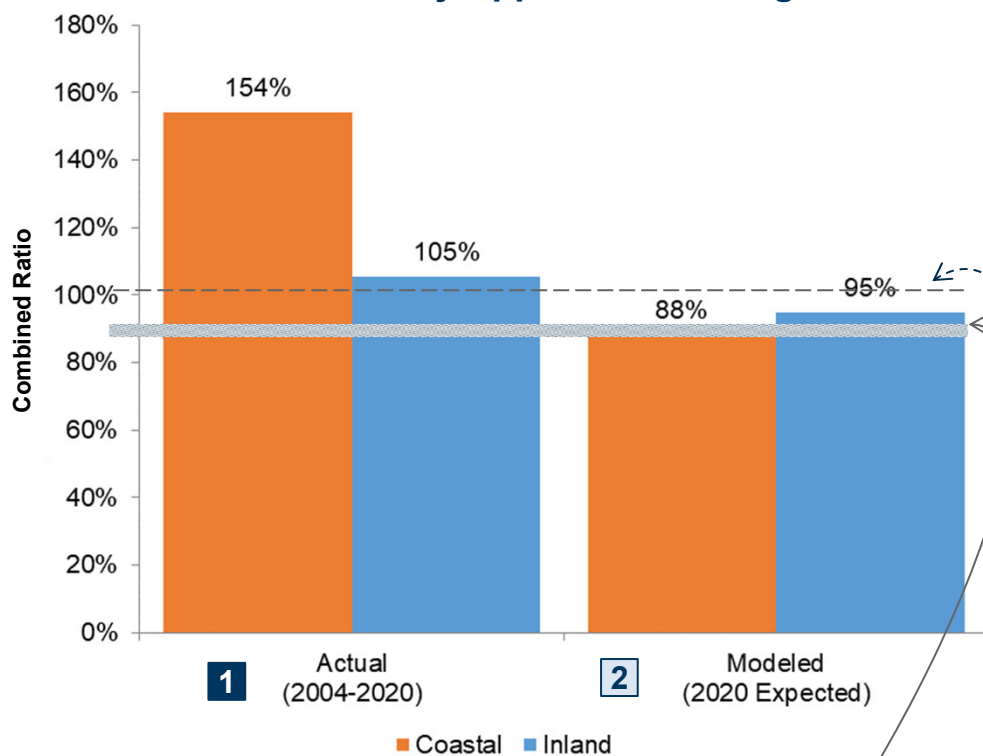
A Combined Ratio greater than 100% indicates costs are in excess of premiums

| Components of Combined Ratio | | |
|------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Category | Description | Cost Components |
| Loss + ALAE Ratio | Losses and ALAE per dollar of Direct Earned Premium is known as the Loss + ALAE Ratio | Losses and ALAE |
| | | Hurricanes and Named Storms |
| | | Other Wind Catastrophes |
| | | Non-Wind Catastrophes |
| | | Other Wind |
| | | Other Non-Wind |
| Expense Ratio | Operating expenses that cannot be assigned to a specific claim, per dollar of Direct Earned Premium | Expenses |
| | | Unallocated Loss Adjustment Expense ¹ |
| | | Commissions and Brokerage |
| | | Taxes, Licenses and Fees |
| | | Other Acquisition |
| | | General |
| Net Reinsurance Load | Net payments to the reinsurer per dollar of Direct Earned Premium | Net Cost of Reinsurance |

¹ Also known as "LAE-Adjusting and Other"

The expected (i.e., Modeled) combined ratios indicate that premium adequacy is reasonably comparable across the Coastal and Inland regions

Mississippi Homeowners' Insurance Combined Ratio by Approach and Region



Key Observations

- The results vary based on the approach (i.e., Actual vs. Modeled) used to develop the combined ratio
- The “Modeled” combined ratios show that expected premium adequacy (i.e., as compared to expected costs) is reasonably comparable across regions
- In the Inland region, under the modeled approach, the combined ratio is greater than the Coastal region
- In the Coastal region, the “Actual” combined ratio far exceeds 100%, while the “Modeled” combined ratio is below 100%
- Actual combined ratios indicate premiums have been less adequate (as compared to actual costs) in the Coastal region than Inland since 2004

Note: A reasonable combined ratio range for HO insurance would be from the high 80's to the low 90's

Note: A combined ratio higher than 100% means that the insurer's incurred costs are higher than the its premiums earned

The components of the calculated combined ratios, and their differences by region, vary somewhat by approach

As a percentage of premium, higher Hurricane Loss + ALAE on the Coast more than offset lower Losses + ALAE from all other perils

1 Actual (2004-2020)

2 Modeled (2020 Expected)

| | Percentage of Premium | | | Percentage of Premium | | |
|--------------------------------|-----------------------|---------------|--------------|-----------------------|--------------|---------------|
| | Coastal | Inland | Difference | Coastal | Inland | Difference |
| Premiums | 100.0% | 100.0% | 0.0% | 100.0% | 100.0% | 0.0% |
| Loss + ALAE by Peril | | | | | | |
| Hurricane | 86.3% | 10.6% | 75.7% | 24.5% | 3.8% | 20.7% |
| Wind Non-Named Catastrophe | 0.5% | 12.1% | -11.5% | 1.9% | 11.7% | -9.8% |
| Other Wind | 1.9% | 12.0% | -10.1% | 1.9% | 11.7% | -9.7% |
| Non-Wind Catastrophe | 0.1% | 0.7% | -0.6% | 0.2% | 0.4% | -0.3% |
| Other Non-Wind | 12.1% | 34.2% | -22.1% | 12.6% | 31.9% | -19.3% |
| Total Loss + ALAE Ratio | 100.9% | 69.4% | 31.4% | 41.1% | 59.6% | -18.4% |
| ULAE Ratio | 9.9% | 7.6% | 2.3% | 3.8% | 6.4% | -2.7% |
| Expense Ratio | 25.1% | 26.2% | -1.2% | 25.7% | 26.8% | -1.1% |
| Net Reinsurance Load | 18.3% | 2.0% | 16.3% | 17.5% | 2.0% | 15.5% |
| Combined Ratio | 154.1% | 105.3% | 48.8% | 88.1% | 94.8% | -6.8% |

Though not allocated to specific claims, ULAE costs increase when claims are higher. The higher costs in the Coastal region can be attributable to higher total losses caused by Hurricane Katrina in 2005 and Hurricanes in 2020

The Net Reinsurance Load is higher on the Coast because (i) insurers cede a larger percentage of their exposure to hurricanes than other perils; and (ii) there is more hurricane exposure on the Coast than Inland

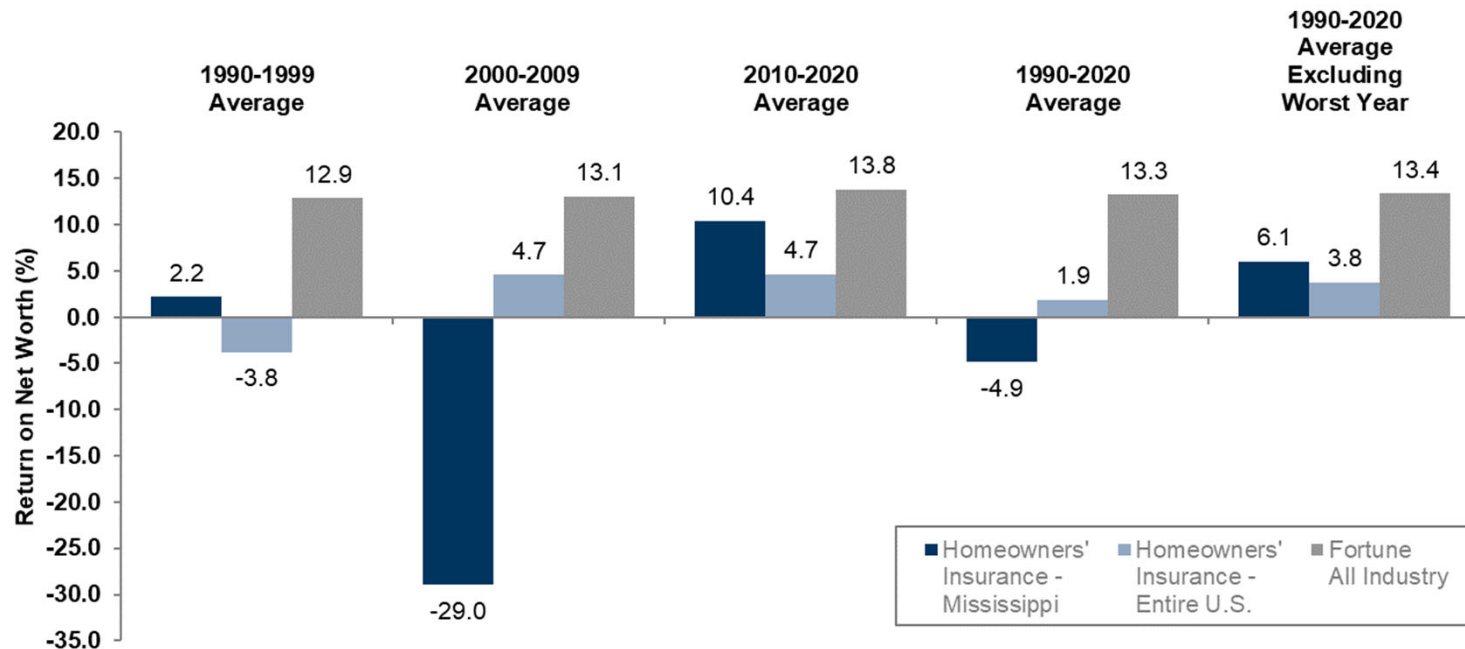
The Modeled Hurricane Loss + ALAE Ratio is lower than the Actual because projected hurricane losses are lower than the average of the last 17 years, and premiums are higher now than in the past

Returns on net worth¹ in the MS homeowners' insurance market have been lower than on national homeowners' insurance and other industries over the last 31 years

The Mississippi homeowner insurance industry's return on net worth over the past 31 years (-4.9%) is far lower than both the national homeowners' insurance industry (+1.9%) and other industries (+13.3%)

Excluding the year of Hurricane Katrina (2005), the Mississippi homeowner insurance industry's returns are slightly better than the national homeowners' insurance industry but far below the average of other industries

Average Return on Net Worth⁽¹⁾ – Comparisons by Industry and Region



Sources: *Report on Profitability By Line By State*, by the National Association of Insurance Commissioners, for the years 1996, 2003 and 2006-2020.

¹ Return on Net Worth is calculated by the NAIC. It factors in Underwriting Profit, Investment Gain on Insurance Transactions, Income Taxes on Insurance Transactions, the ratio of Earned Premiums to Net Worth, Investment Gain on Net Worth and Tax on Investment Gain on Net Worth

² This figure is provided by the NAIC and represents an approximation based on a simple average of Fortune's Industrial and Service sectors

³ Average of 1990-2020 excluding the single worst year from each column: (i) for Mississippi Homeowners' Insurance, -335% in 2005 due to Hurricane Katrina; (ii) for Entire U.S. Homeowners' Insurance, -54% in 1992 due to Hurricane Andrew; and (iii) for Fortune All Industry, +10.1% in 1992.

Mapping the data illustrates regional risk concentrations and variability over time

Mapping the raw data by zip code for past 17 years illustrates the higher loss ratios and combined ratios in the Coastal regions

- Map of Actual Loss Ratio from 2004-2020 (p. 29)
- Map of Actual Combined Ratio from 2004-2020 (p. 30)

The combined ratio varies significantly by year and region

- Graph of Actual Combined Ratio by year (p. 31)

For any given year, the Actual combined ratio varies significantly by location

- Maps of Actual Combined Ratio for selected individual years (pgs. 32-34)

Mapping the Modeled data by zip code illustrates far less variation than the Actual results in the Coastal region because the models smooth out wind catastrophe losses

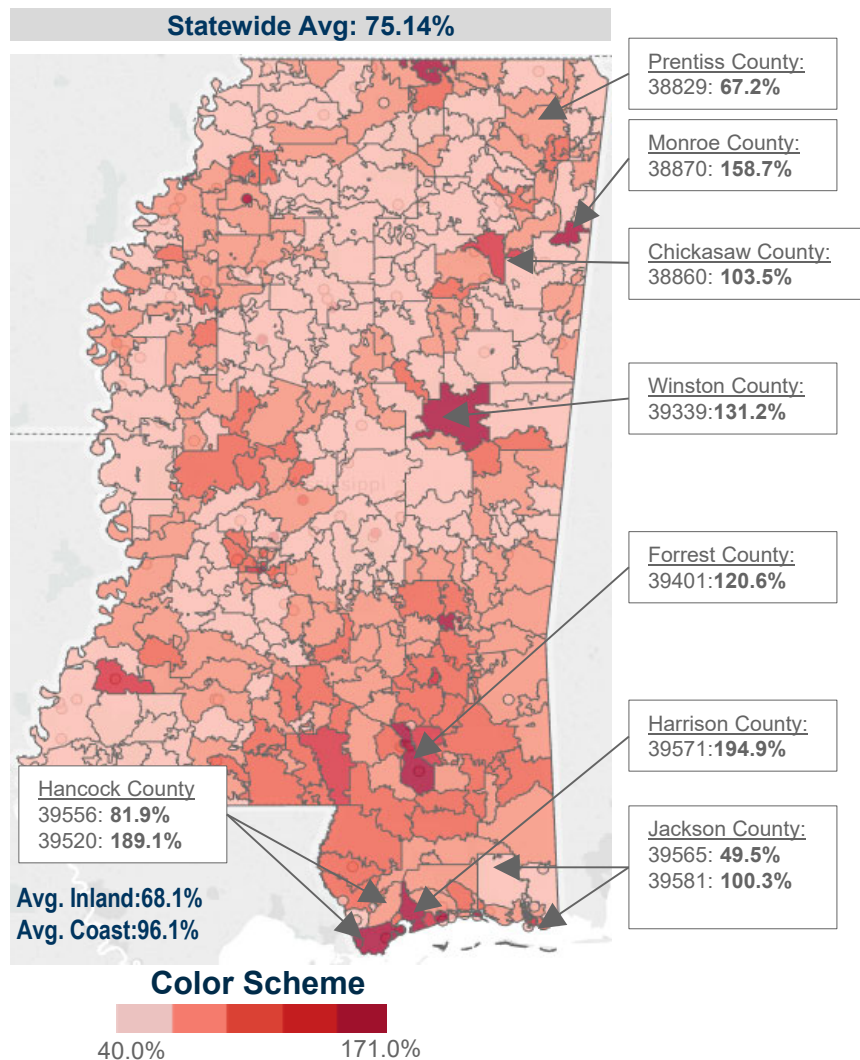
- Map of Modeled Combined Ratio (p. 35)

The Actual combined ratios fluctuate materially by region and year due to catastrophes (especially Hurricane Katrina); the Modeled ratios are far more stable (p. 36)

1 Actual Loss Ratio:

Mapping the raw data by zip code for 17 years illustrates higher loss ratios near the coast as well as the level of variation within narrower regions

1 Actual Loss Ratio by MS Zip Code, 2004-2020



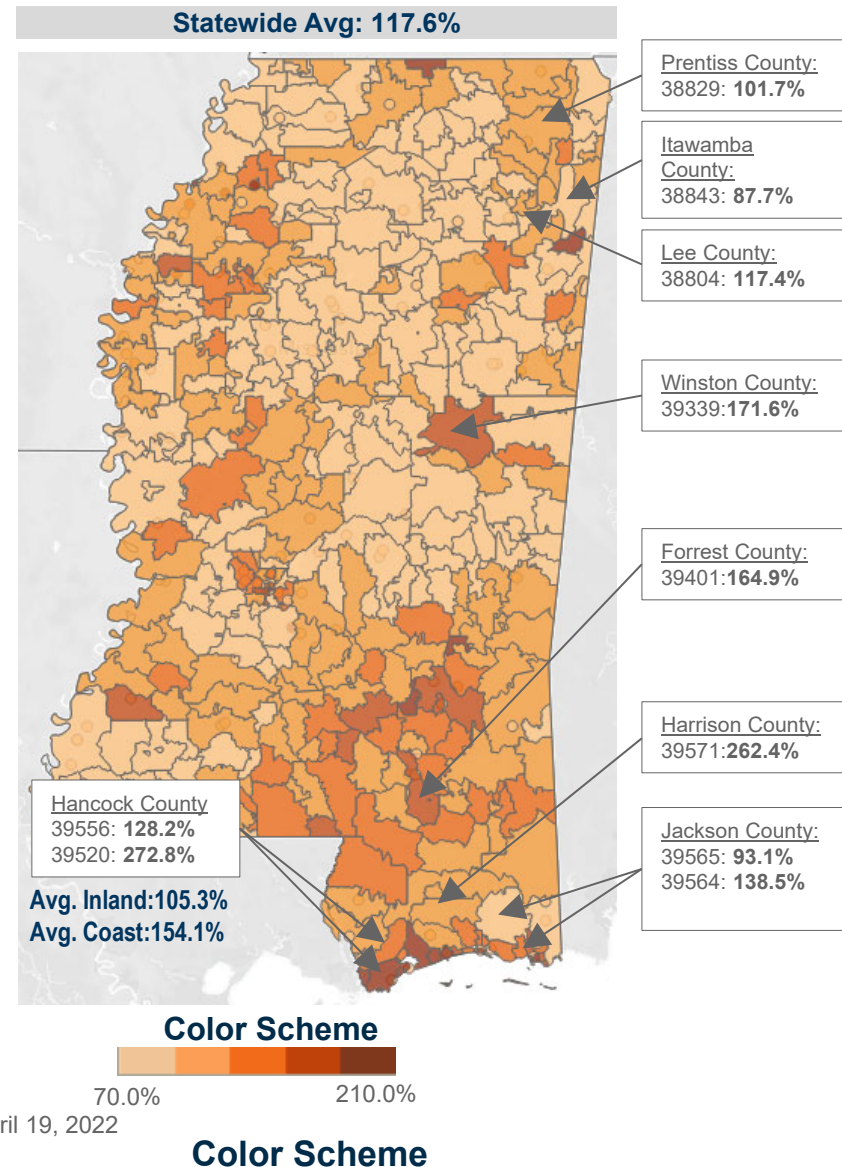
Key Observations:

- The “Actual” loss ratios are much higher in the coastal regions than the inland regions
- In Mississippi, many zip codes have had an average loss ratio greater than 100% over the last 17 years
- A loss ratio greater than 100% means the insurers’ premiums don’t cover their losses and ALAE (i.e., before any other expenses or reinsurance costs)

1 Actual Combined Ratio:

Mapping the raw data by zip code for 17 years illustrates higher combined ratios near the coast as well as the level of variation within narrower regions

1 Actual Combined Ratio by MS Zip Code, 2004-2020



Key Observations:

- The “Actual” combined ratios are much higher in the Coastal region than Inland
- A combined ratio of more than 100% means the insurers’ premiums don’t cover their costs
- In Mississippi, nearly half of all zip codes have a combined ratio of greater than 100%
- The statewide average combined ratio is greater than 100%

Actual Combined Ratio:

The Actual combined ratio varies significantly by year and region

Actual Combined Ratio by Year and Region, 2004-2020

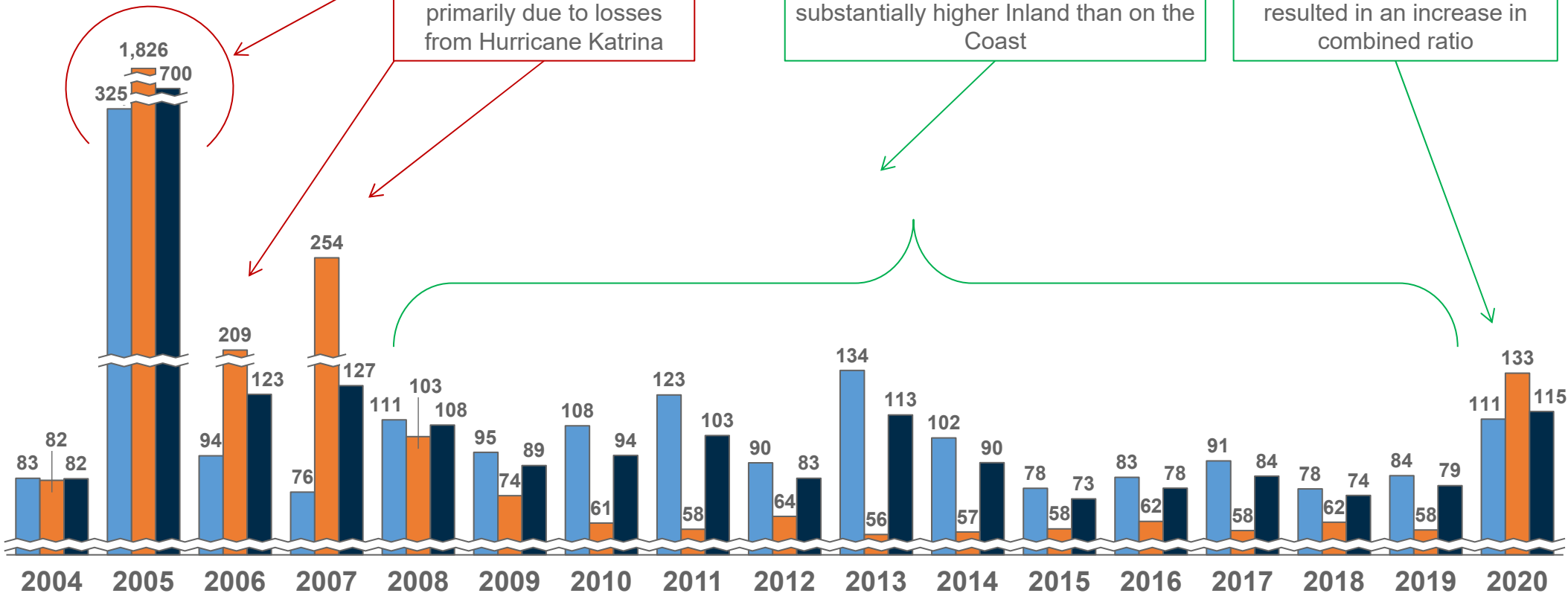
(% of Direct Earned Premium)

- Inland
- Coastal
- Statewide

2005-2007
Coastal combined ratios dwarfed Inland combined ratios in 2005-2007, primarily due to losses from Hurricane Katrina

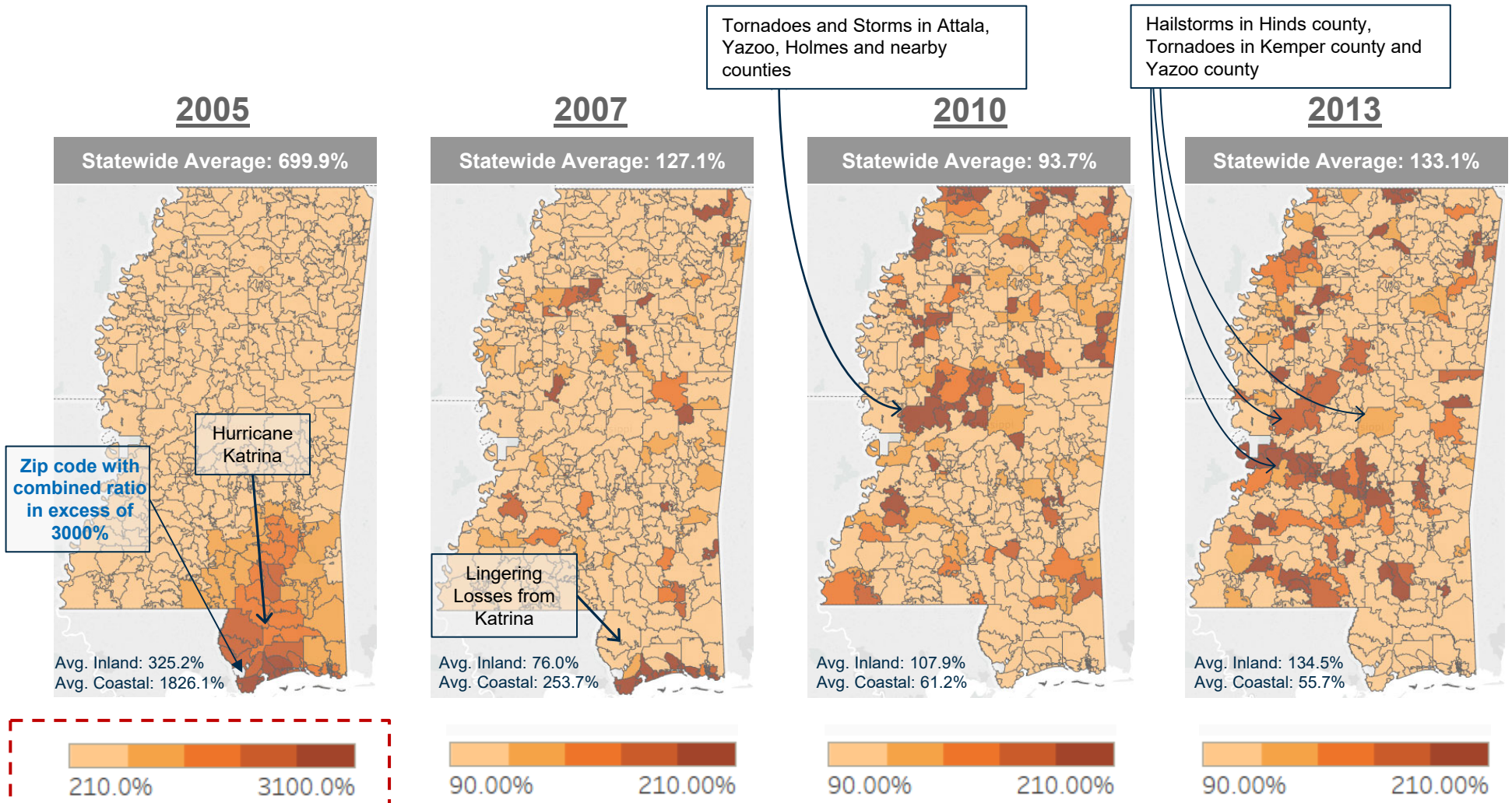
2008-2019
Because there weren't any major hurricanes during this time period, Actual combined ratios were substantially higher Inland than on the Coast

2020
Hurricanes and tornadoes in the Coastal and Inland counties, respectively, resulted in an increase in combined ratio



Actual Combined Ratio:

For any given year, the Actual combined ratio varies significantly by location

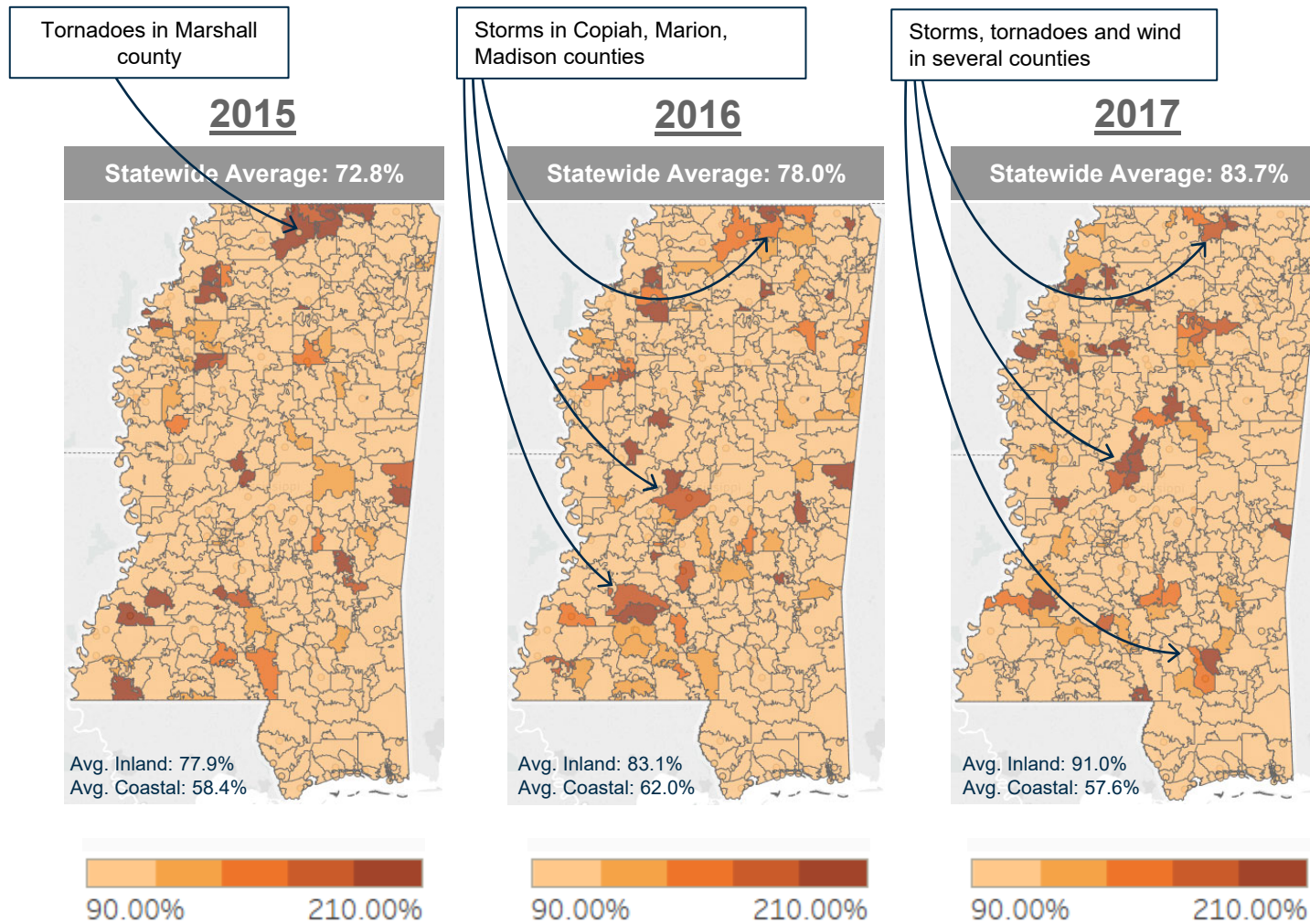


NOTE: The scale in 2005 is different than in other years due to the magnitude of Hurricane Katrina

- Note: The above maps are on a different scale for each year to highlight the differences in magnitude across various zip codes. In each map, darker colors denote higher combined ratios.
- Note: The map can include zip codes whose combined ratio is higher or lower than the end points of the scale

Actual Combined Ratio (Continued):

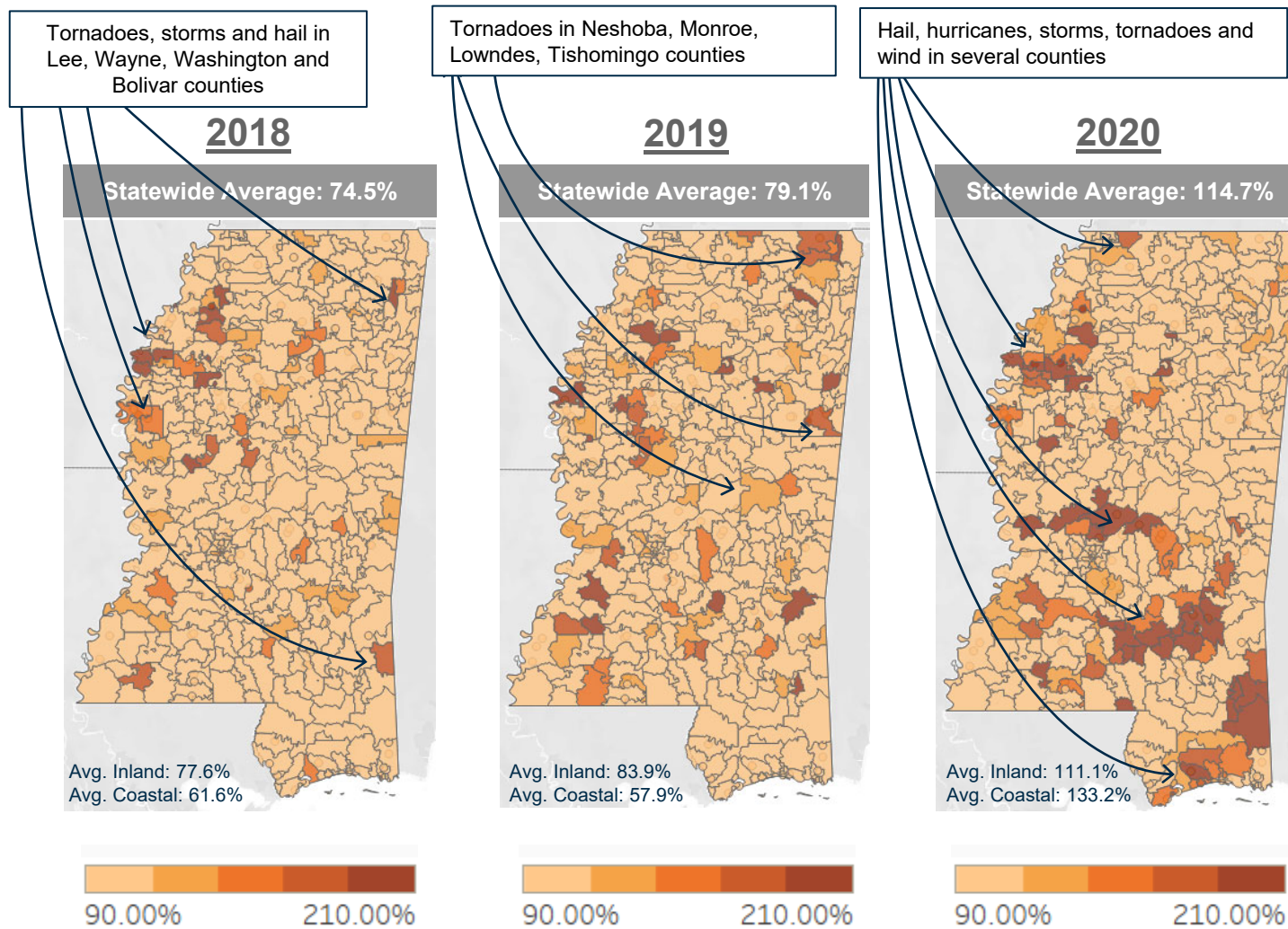
For any given year, the Actual combined ratio varies significantly by location



• Note: The map can include zip codes whose combined ratio is higher or lower than the end points of the scale

Actual Combined Ratio (Continued):

For any given year, the Actual combined ratio varies significantly by location

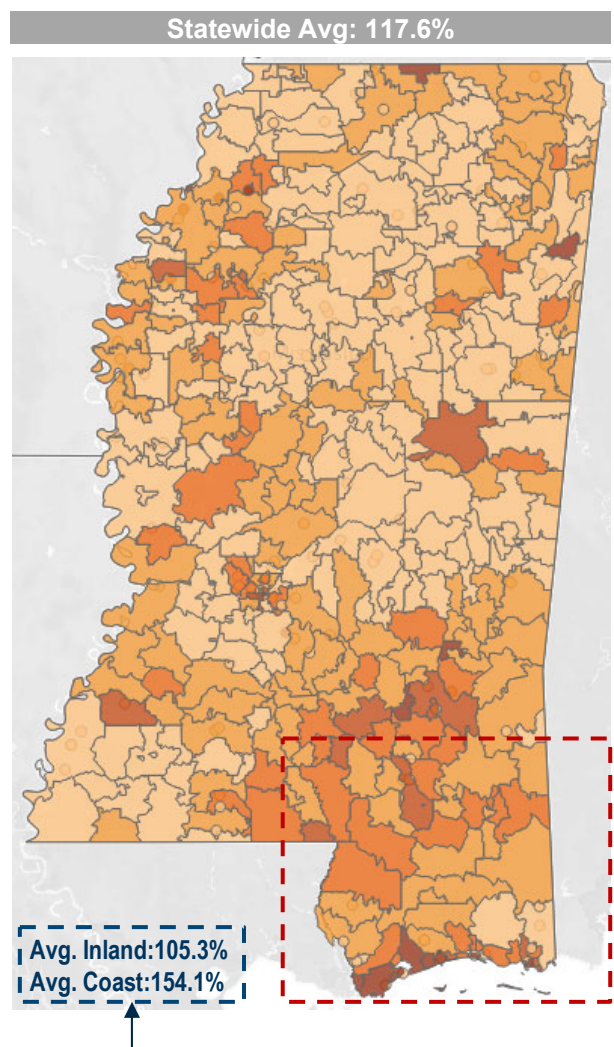


• Note: The map can include zip codes whose combined ratio is higher or lower than the end points of the scale

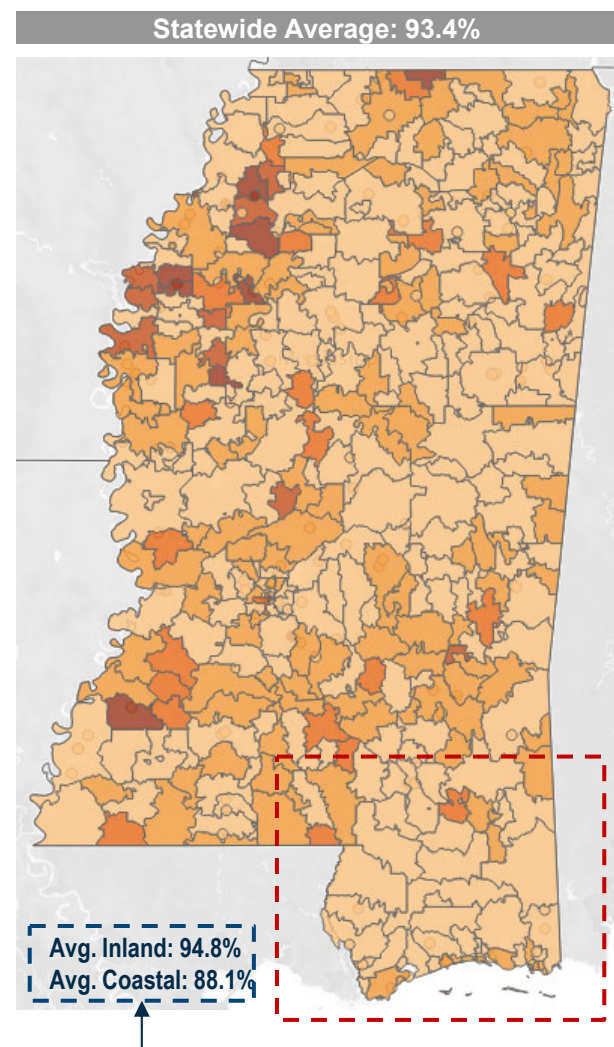
2

Modeled Ratios: Mapping the Modeled data by zip code illustrates far less variation than the Actual results in the Coastal region because the models smooth out wind catastrophe losses

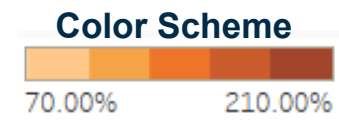
1 Actual Combined Ratio by MS Zip Code, 2004-2020



2 Modeled Combined Ratio by MS Zip Code, 2020 Expected



The variation in the Modeled combined ratios by zip code is driven by differences in non-hurricane losses over the last 6 years rather than the modeled wind catastrophe losses



Near the Coast, there is much less variation in the Modeled Combined Ratio than in the Actual Combined Ratio

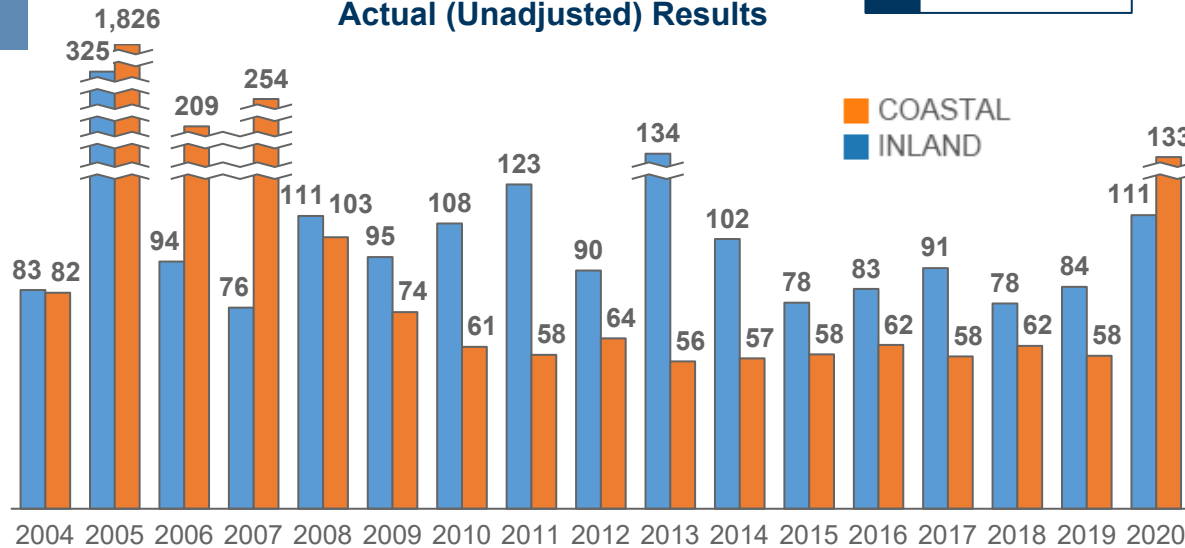
Less variation between Modeled (Coastal vs. Inland) than Actual results

• Note: The map can include zip codes whose combined ratio is higher or lower than the end points of the scale

The Actual combined ratios fluctuate materially by region and year due to catastrophes (especially Hurricane Katrina); the Modeled ratios are far more stable

Combined Ratio by Region, 2004-2020
Actual (Unadjusted) Results

1 Actual



Key Observations:

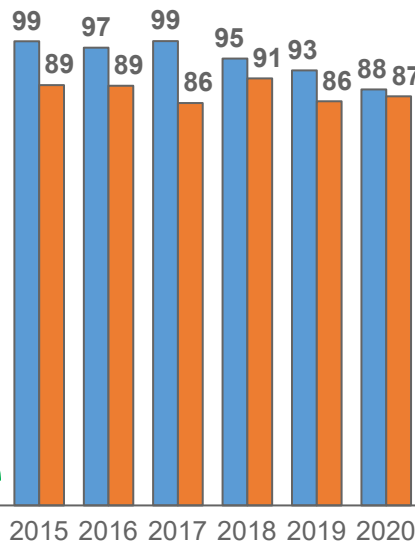
Actual Combined Ratio

- Hurricane Katrina, in 2005, dwarfed all other loss events over the last 17 years
- The impact of major events on “Actual” Inland combined ratio would be barely visible if graphed on the same scale as the Coastal combined ratio (we had to add breaks to the graph to make the annual variation visible)
- Coastal calendar year combined ratios remained elevated through 2007 due to adverse loss development from **Hurricane Katrina**, meaning that the initial estimates of losses that were reported in 2005 had to be revised upward over the subsequent two years

Combined Ratio by Region, 2004-2020
Modeled Results

2 Modeled

COASTAL
INLAND



2004-2014

Not Applicable as the modeled / trended analysis uses data from 2015

Modeled Combined Ratio

- The Modeled results (i) replace the actual losses and ALAE from hurricanes and other catastrophe windstorms with projected losses; and (ii) adjust the actual premiums and non-catastrophe losses to reflect historical trends
- As a result, the Modeled results are far more stable over time than the actual results

Appendix

Glossary

Glossary: Several important acronyms, abbreviations and defined terms are used throughout this report

| Term | Meaning |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAL | Average Annual Loss |
| A&M | Alvarez and Marsal Insurance and Risk Advisory Services, LLC |
| Actuary | A business professional who uses mathematics and statistics to analyze financial consequences of risk |
| All Other Excl. Wind | Policy that does not cover the perils of Wind and Hail. |
| Actual Cost | Historical costs, unadjusted for trends over time, including: <ul style="list-style-type: none"> • Losses and allocated loss adjustment expenses reported by Participating Carriers in response to the data call; • Commissions and brokerage, taxes, licenses and fees, other acquisition expenses and general expenses, as estimated from data reported by Participating Carriers in their Annual Statements; An estimate for the net cost of reinsurance, derived from data submitted by Participating Carriers. |
| ALAE | Allocated Loss Adjustment Expense |
| All Other Incl. Wind and Named Storm | Policy that covers the perils of Wind and Hail including Named Storms (including hurricanes), and also covers other perils |
| All Other Incl. Wind but Excl. Named Storm | Policy that covers the perils of Wind and Hail excluding Named Storms, and that also covers other perils |
| All Other Perils | Perils not included in Hurricane, Non-Named Wind, Other wind or Other Named Catastrophe categories |
| Allocated Loss Adjustment Expense | The cost of adjusting that is directly attributable to specific claims, and typically includes legal costs, investigatory expense, independent adjuster expenses, etc. |
| Carriers | An insurer / insurance company |
| Catastrophe Models | Computer-assisted calculations that estimate the losses that could be sustained due to a catastrophic event such as a hurricane or earthquake |
| Catastrophe | An event is typically designated a catastrophe by the industry when the Insurance Services Office ("ISO") claims are expected to reach a certain dollar threshold, currently set at \$25 million |
| Ceding | Process of transferring risk to a reinsurer |
| Clarity Act | House Bill No. 739, passed by the Mississippi Legislature in 2015 that requires insurers authorized to transact homeowners' business in the state to provide policy and premium information to the department of insurance |
| Coastal Region / Counties | George, Hancock, Harrison, Jackson, Pearl River and Stone Counties in the state of Mississippi |

Glossary (Continued): Several important acronyms, abbreviations and defined terms are used throughout this report

| Term | Meaning |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combined Costs | Sum of costs associated with Losses, ALAE, Expenses and Net Cost of Reinsurance |
| Combined Ratio | Ratio of Combined Costs to Premium. Representative of how profitable an insurance company is |
| Commission and Brokerage Expense | Payments to agents and brokers for referring policyholders to the insurer, responding to their questions, etc. |
| Consultant | A business professional who provides unbiased advice based on thorough assessment of a problem or situation |
| Data Call | The Market Analysis Data Call which was initially issued by the Department to reflect changes necessitated by the passage of the Clarity Act by the Mississippi Legislature. The Data Call was comprised of two data sets: the "HO Policy Historical Data" portion, which included the data required by the Clarity Act as well as additional information such as losses and ALAE by peril; and the "Catastrophe Modeling Data" portion, which included information regarding Participating Insurers' reinsurance programs and catastrophe model results. |
| DEP | Direct earned premium |
| Earned House Year ("EHY") | A measure of the number of policies that considers the effective date and termination date of each policy |
| Exposure | The state of being subject to loss because of a hazard or contingency |
| Future Cost | An estimated amount of prospective future expenditures, a portion of which might be attributed to future earnings |
| General Expense | Other expenses, such as overhead associated with the insurer's home office (e.g., supplies, rent, building maintenance), salaries of certain employees (e.g., actuaries) and other miscellaneous costs |
| HO | Homeowners (insurance) |
| Hurricane Risk | Risk of losses that could amount from the possibility of occurrence of Hurricanes |
| Hurricane or Named Storm | Storm that has been officially named by the National Weather Service, National Oceanic Atmospheric Administration or other major meteorological authority. |
| Inland Region / Counties | All counties in Mississippi other than the Coastal Counties |

Glossary (Continued): Several important acronyms, abbreviations and defined terms are used throughout this report

| Term | Meaning |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insurance Regulator | An individual (such as an insurance commissioner) or organization (such as an insurance department) that regulates and supervises the insurance industry in the United States |
| Investment | Investing money for profit |
| LAE - Adjusting and Other Expense | See “Unallocated Loss Adjustment Expense” |
| Loss | Cost incurred for claims |
| Loss Ratio | Ratio of losses as a percentage of Earned Premiums |
| Merlinos & Associates, Inc. (“Merlinos”) | One of the largest independent property and casualty actuarial consulting firms in the United States. Merlinos was retained directly by the Department to provided support on this engagement |
| Mississippi Insurance Department (“Department”) | State agency charged with enforcing the insurance laws and regulations enumerated in Mississippi Code Ann. Section 83-1-1 et seq. |
| Modeled Data or Modeled Cost | Estimates developed by A&M and Merlinos based on information submitted by Participating Insurers (i) in response to the Data Call, (ii) in their Annual Statements; and (iii) in a catastrophe modeling data call issued by the Department. For the “Named Storm” and “Non-Named Wind Catastrophe” perils, the Modeled Data includes results from hurricane and severe convective storm catastrophe models. For all other perils, the Modeled Data includes average historical results submitted in the Data Call, trended to 2020 to reflect changes in inflation and other factors. |
| NAIC | National Association of Insurance Commissioners |
| Net Cost of Reinsurance (“NCR”) | The premium paid to the reinsurer (“gross cost of reinsurance”) less expected recoveries from the reinsurer. Essentially, the net cost of reinsurance represents the reinsurer’s long-term expense and profit needs. |
| Non-Named Wind Catastrophe | Any windstorm, winter storm, thunderstorm, hailstorm, tornado or other wind-driven event that has a catastrophe number assigned by Insurance Services Office (“ISO”) but that is not a Named Storm |

Glossary (Continued): Several important acronyms, abbreviations and defined terms are used throughout this report

| Term | Meaning |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other Acquisition Expenses | Costs to acquire business other than commissions and brokerage expenses, such as advertising, direct mailings and salaries of non-commission sales employees |
| Other Non-Named Catastrophe | Any event other than a Named Storm or a Non-Named Wind Catastrophe (as defined above) that has a catastrophe number assigned by Insurance Services Office ("ISO"). |
| Other Wind | Any windstorm or winter storm other than a Named Storm or Non-Named Wind Catastrophe |
| Participating Insurer | An insurance company that writes homeowners' insurance policies in the state of Mississippi and that has responded to the Data Call |
| Peril | A specific type of risk that an insurance policy may (or may not) cover – e.g., hurricanes |
| Policy Limits | The maximum amount an insurance carrier will pay for a particular claim based on the coverage type |
| Premiums | Payments to an insurance company for an insurance policy |
| Profit | Financial gain that is defined as the difference between revenue and cost |
| Property and Casualty | Insurance that protects against property losses to your business, home or car and/or against legal liability that may result from injury or damage to the property of others |
| Ratemaking | Also called insurance pricing, Ratemaking is the determination of rates charged by insurance companies |
| Taxes, Licenses and Fees | Premium and other tax, assessments and fees payable by the insurer to the state (excludes federal income tax) |
| Trend / Trend Lines | A line indicating the general course or tendency of something – i.e., how it tends to change over time |
| Trended | Historical results from 2015 onwards, adjusted to 2020 based on historical trends |
| Unallocated Loss Adjustment Expense ("ULAE") | All costs associated with the claim settlement function that are not directly assignable to specific claims, such as claims department overhead and in-house claims adjusters' salaries |
| Underwriting | The process of assessing risk associated with an insurance policy and charging appropriate premium to cover that risk |
| Wind Only Excl. Named Storm | An insurance policy that covers the peril of Wind and Hail excluding Named Storms, but does not cover any other perils |
| Wind Only Incl. Named Storm | Policy that covers the perils of Wind and Hail including Named Storms, but does not cover any other perils |

Appendix

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Disclaimer and Limitations on Use

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This Report supersedes A&M’s March 19, 2019 report, by the same title, as it contains updated information and estimates.

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¹ *Merlinos & Associates is an actuarial consulting firm that was retained by the Department to develop an estimate of the net cost of reinsurance by region within the state of Mississippi, and to provide other input to the project.*

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