

## Data

The Florida Office of Insurance Regulation (OIR) compiles a list of reports on personal and commercial policy data from the Quarterly and Supplemental Reporting System (QUASR.) Their panel data consists of summary insurance premiums for each county and policy type between March 2009 to December 2019. In 2009 and 2010, their quarterly reports did not differentiate between wind coverage and lacked fire/dwelling policies for mobile homeowners.

The QUASR dataset had aggregate quarterly reports that was separated into 23 different types of policies. The policies were categorized by structural and coverage differences. It differentiated whether a commercial building was a condominium, apartment, homeowner association, or condominium association. For residential buildings, this included differences for agricultural lots, mobile homes, condominium unit, homeowner, or a tenant. Each policy was further differentiated with the type of coverage, such as covering for fire, wind, water damage (structural, not weather related), and flooding.

### **Summary Statistic of QUASR Data**

19,872 Observations	Min	Mean	Max	Standard Deviation	Sum Total in 2019
Total Policies in Force	0	7,251.86	270,964	26,954.25	4,003,026
Total Insurance Premium	0	13,910,946.00	911,933,975	66,240,781.00	7,678,842,192
Total Policies in Force with Wind Coverage	0	6,755.22	236,759	25,052.32	3,728,881
Total Premium with Wind Coverage	0	13,253,989.00	830,228,072	62,530,705.00	7,316,201,928

**Figure 1**

Figure 1 presents the variables for the premium amount, quantity of active policies, and policies with wind coverage. Each observation was sorted to a quarter of the year, county, and the policy type. This paper narrows the research to 24 counties described to be part of South Florida: with Brevard, Orange, Polk, Hillsborough and Pinellas counties acting as the northern border as seen in Figure 2 (Gibson 2014, Cutway 2014).

## South Florida



**Figure 2<sup>1</sup>**

The quarterly reports were individually downloaded from the website and appended using Stata v16. 2009 and 2010 data were omitted as they were inconsistent for not differentiating whether a policy had wind or fire coverage. The sample size was 19,872 and contained all positive values, observing policy and county-level data for 36 quarters between March 2011 and December 2019. Many counties did not have a certain type of policy, such as Monroe county famous for Key West, did not have residential farmland, and many counties lacked mobile homeowner insurance or certain commercial insurance policies. Looking at the

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<sup>1</sup> 1. Travis Gibson, *Florida*, 2014, graphical image, 534x401pixels, First Coast News, <https://archive.is/tENJ4/7a5c8eeee4c42b3ea5e63fa9f362f5b7da8bc49d.png>

large standard deviation of insurance premiums makes sense when certain commercial policies make a large part of the consumer base for insurance.

### Relative Sea Level Trend

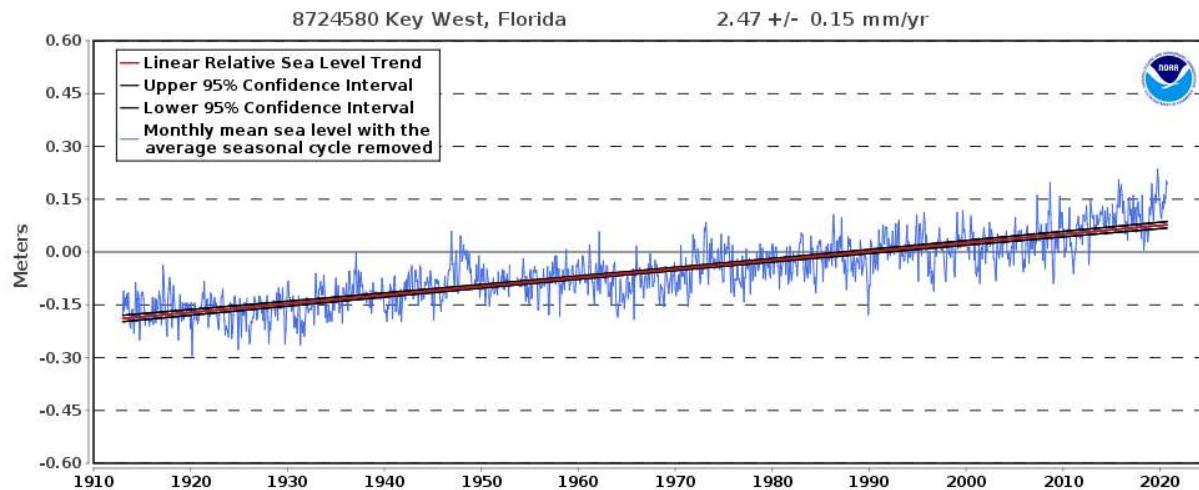


Figure 3<sup>2</sup>

For increasing sea levels the dataset provided by NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) was used. CO-OPS had provided monthly mean sea level differences at a relative tide station (Station 8724580, Key West, FL, USA) after controlling for average seasonal cycles from January 1913 to August 2020. In Figure 3, a linear trend line with the variation of the tides was used to show an increasing mean sea level over time, equivalent to a change of 0.81 feet over 100 years (NOAA 2020).

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<sup>2</sup> Tides & Currents, *Relative Sea Level Trend 8724580 Key West, Florida*, chart, 1000x401 pixels, National Oceanographic and Atmospheric Administration, [https://tidesandcurrents.noaa.gov/slrends/plots/8724580\\_meanrend.png](https://tidesandcurrents.noaa.gov/slrends/plots/8724580_meanrend.png)

## **References**

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