ASSUMPTIONS: Reported data through December 2017 will be incorporated fully into each analyst's normal sales tax estimates; leaving the remaining rebuilding component as a stand-alone, forward-looking add-on. Rebuilding occurs during the Recovery Phase.

GR Reporting Month	Activity Month	Phase	Final Liability Est	Final Liability Diff	Sales Tax Est	Sales Tax Diff
July	June	Normal	2147.7	-7.0	1939.1	-6.2
August	July	Normal	2051.6	22.7	1871.4	37.4
September	August	Normal	2028.4	-31.4	1848.1	-35.4
October	**September**	**Preparatory / Crisis**	**2025.2**	**-138.4**	**1864.9**	**-124.7**
November	October	Recovery	2049.1	63.2	1857.2	90.5
December	November	Recovery	2123.2	96.5	2016.9	45.5
November + December 2017...				159.7		136.0
Nondurables				23.7		
Autos				53.1		
Other Durables				11.3		
Building				6.4		
Note: Tourism effect assumed complete; Business on estimate.				94.5		80.5
			Percent of Total	59.2%		59.2%

Sales Tax GR Analysis...	Gross Sales Tax Estimate	Displacement Factor	Displacement Value	Net Sales Tax Estimate	Year-To-Date Rebuilding	Remaining Rebuilding
High	829.95	0.433	-359.7	470.3	-80.5	389.81
Middle	670.51	0.433	-290.6	379.9	-80.5	299.47
Low	511.08	0.433	-221.5	289.6	-80.5	209.12

NOTE: The Displacement Factor includes deductibles and uninsured expenses (from incidentals, going bare or uncovered flood damage) coming out of pocket.
* According to FIU's Florida Public Hurricane Loss Model reuslts, two-thirds of the total loss will be borne by homeowners (not insurance).
* According to the HOUZZ Survey from October 2017, the average home damage was $13,000, with 66% of the damage equaling $10,000 or less.
* According to OIR, typical deductibles for hurricanes range from $500, to 2%, 5% and 10% of dwelling or structure value.
* EDR performed an analysis of average deductibles based on OIR information:

	# of Claims	Average Value	Average Deductible (5%)	Average Loss	Out-of-Pocket	
Residential Property	**721,745**					
Homeowners	575,325	$241,000	$12,050	$22,035	54.7%	
Dwelling	93,259	$192,176	$9,609	$19,594	49.0%	**Out-of-Pocket**
Mobile Homeowners	53,161	$71,200	$3,560	$13,545	26.3%	**Simple Average**
Weighted Average			**$11,109.22**	**$21,094.57**	**51.9%**	**43.3%**

Liability Conversion...	Remaining Sales Tax GR	Final Liability ***0.893***	***Nondurables*** **10.00%**	***Autos*** **3.00%**	***Other Durables*** **25.00%**	***Building*** **62.00%**
High	389.81	436.52	43.65	13.10	109.13	270.64
Middle	299.47	335.35	33.53	10.06	83.84	207.92
Low	209.12	234.18	23.42	7.03	58.55	145.19

Split of Final Liability Between Years...

Note: Assumes Rebuilding = 20 months; October 2017 thru May 2019 Activity months, hitting November 2017 thru June 2019 GR reports. October and November activity are already included in the historic (actual) data; so add-on begins with December activity in January report.

FY 2017-18	***Nondurables*** **50.00%**	***Autos*** **100.00%**	***Other Durables*** **50.00%**	***Building*** **50.00%**
High	21.83	13.10	54.56	135.32
Middle	16.77	10.06	41.92	103.96
Low	11.71	7.03	29.27	72.60

FY 2018-19	***Nondurables*** **50.00%**	***Autos*** **0.00%**	***Other Durables*** **50.00%**	***Building*** **50.00%**
High	21.83	0.00	54.56	135.32
Middle	16.77	0.00	41.92	103.96
Low	11.71	0.00	29.27	72.60

Florida Offical Data:

	(billions) Total Damage	(billions) GR Sales	
A. EDR Study	198.988	3.687	1.9%
B. EDR Study	183.224	3.393	1.9%
C. Andrew	22.6	0.68	3.0%
D. 2005	10.835	0.4221	3.9%
E. 2004	19.3	0.7519	3.9%
		Average	2.9%

Sales Tax Calculator Based on Total Reported Losses...

	Reported Losses High *(hybrid)*	Middle *(average)*	Low *(OIR)*
	Total Loss 28.6	Total Loss 23.1	Total Loss 17.6
Model...			
A	530.09	428.25	326.42
B	529.79	428.01	326.24
C	860.80	695.43	530.07
D	1,114.52	900.41	686.31
E	1,114.56	900.45	686.34
Average	**829.95**	**670.51**	**511.08**

* 1-in-100-year (Cat 4 / 5: direct hit to Tampa Bay or Miami)

** 1-in-30-year (Cat 5: destroyed 25,000 homes and severely damages 100,000 southern Miami-Dade)

Non-State Reports (unofficial):

2004	**FL Landfall**	*Damage**	All $'s reported below are nominal (billions).
Jeanne	3	*3.5*	
Charley	4	*13.5*	
Frances	2	*8.32*	(slow moving with coastal impact; second landfall as TS)
Ivan	3	*8.0*	
		33.32	
2005			
Dennis	3	*1.5*	
Wilma	3	*20.6*	
Katrina	1	*0.523*	(also had secondary impact in Panhandle)
Rita	2	****	(indirect through Florida Straights)
		22.623	
2016			
Hermine	1	*0.550*	Prelim Overall Loss Estimate--not necessarily FL specific; $139 M Insured from OIR to projected total
Matthew	n/a	*4.748*	Did not make landfall, but was a 1; based on 25% Insured to Total Damage from OIR for Hermine

	198.5
	290.4
	488.9
High	4.748201439
(calculated, but matches FIU's 25 to 45% Insured Rate for Cat 1)	0.252727273
OIR FL	1.200000000
Flood >FL	0.623000000
	1.823
Low	4.456286918

Reported State Claims as of February 1, 2018:

Division of Risk Management--Irma-Related $ 34.5 (millions)

Data Sources...

High: Developed from Average of Karen Clark and OIR Insured Losses

Middle: Average of High and Low (similar to FIU Total Loss)

Low: Developed from OIR Claims Data

Tot Loss	28.6	23.1	17.6

Insured Losses:			
EDR Study	**16.2**	**11.7**	**7.2**
Ins Share	0.41	0.41	0.41
Tot Loss	39.6	28.6	17.6
Andrew	**16.2**	**11.7**	**7.2**
Ins Share	0.71	0.71	0.71
Tot Loss	22.9	16.5	10.2
Average	**16.2**	**11.7**	**7.2**
Ins Share	0.56	0.56	0.56
Tot Loss	29.0	21.0	12.9

Not Used: *[Key: I=insured; T=total damages]*

T	*CoreLogic has total US losses of $42.5 to $65 billion (9/19/2017)*
I	*Fitch Ratings has insured US losses of $25 to $50 billion (9/14/2017)*
T	*Enki Research: $49 billion total loss & $19 billion insured loss (9/11/2017)*
T	*Moody's has US losses of $46 to $67 B for average of $56.5 B (9/12/2017)*
T	*AccuWeather has total US losses of $100 billion (9/11/2017)*
I	*AIR Worldwide has insured US losses of $25 to $35 billion (Post-Hurricane)*
T	*NOAA reports total Irma loss in US as $50 billion (Post-Hurricane; Insurance Institute)*
*I**	*Bloomberg's Jonathan Adams insured losses of $13 billion (9/11/2017)*
*I**	*Karen Clark and Co (9/13/2017); US = $18 B insured, of this FL is 90%*
*T**	*FIU Model: Wind Damages (not flood)* ***19.4***
	Insured 6.3 0.324742268
	Other 13.1 0.675257732

http://floir.com/Office/HurricaneSeason/HurricaneIrmaClaimsData.aspx

http://www.floridahealth.gov/diseases-and-conditions/zika-virus/

OIR Data	Claims	Per Claim
All	877,843	$ 8,209.76
Paid + Open	595,453	$ 12,103.18
Residential	730,574	$ 9,864.68
Paid + Open	483,506	$ 14,905.46

OIR Reported Insured Losses (1/5/2018)		$7,206,877,805	
EDR Study Ins Share	0.41	$17.6	Total Loss ($b)
Andrew Ins Share	0.71	$10.2	Total Loss ($b)
Average Ins Share	0.56	$12.9	Total Loss ($b)
Using FSU Insured Share:		$22.2	

OIR Claims	*Not Paid*	*Remaining*
747,534	*96,464*	*651,070*
OIR Average Claim Amount:		*11,069*
HOUZZ Survey Avg Damage:		*13,000*

Hurricanes: Economic Phases

Phase	Defining Characteristics	Statewide Economic Consequences

Preparatory Phase *(approximately 72 hours in advance of the hurricane to landfall)*	• Purchase of Emergency Supplies (canned food, batteries, radios, candles, flashlights, charcoal, gas, propane, water, ice, shutters, boards / plywood, etc.)
	• Evacuation Expenses
	  ○ In-State…hotels and lodging, transport costs like rental cars and gas
	  ○ Out-of-State…leakage
		Demand …Localized increase in demand for specific items, and potential non-affected area increase in lodging demand, but largely undetectable
		
		State Budget …Shifting of costs from normally provided services to emergency management, as well as unanticipated overtime and shelter costs
		
		State Revenues …Slight uptick, but largely undetectable

Crisis Phase *(landfall to several weeks after landfall)*	• Rescue and relief efforts (largely public, charitable, or free) • Roads closed due to debris • Private structures and public infrastructure damaged • Utility disruptions • Businesses and non-essential parts of government closed • Temporary homelessness • Violence and looting	**Demand** …Localized decrease in overall demand; significance depends on the event **State Budget** …Government agencies provide goods and services and incur new expenditures that may or may not be matched at a later time by the federal government **State Revenues** …Detectable downtick; significance depends on the event

Recovery Phase *(subsequent to the Crisis Phase and generally lasting up to two or three years)*	• Increased spending related to deductibles, repair, and replacement
	  ○ Private Savings / Loans
	  ○ State Spending
	  ○ FEMA and Federal Spending
	  ○ Insurance Payments
	• Competition for scarce resources (contractors, roofers, supplies, construction workers, building materials, debris removal, etc.)
		Demand …Localized increase in overall demand, and prices likely increase for some items
		
		Employment …Will temporarily see gains as relief and recovery workers move into the area
		
		State Budget …Reallocation of state and local government spending to the affected area
		
		State Revenues …Discernible and significant uptick

Displacement Phase *(subsequent to the Recovery Phase and lasting from two to six years)*	• Reduction in normal purchasing behavior for items that were bought or replaced ahead of schedule • Demographic and labor shifts related to dislocated households and economic centers	**Demand** …Localized decrease in overall demand, but largely undetectable at the state level **State Revenues** …Slight downtick, but largely undetectable