COUNTRY EXPOSURE MODEL

Review main statistic of a exposure model and create summaries for a given Country.

```
/home/risk/venvs/py38w/lib/python3.8/site-packages/geopandas/_compat.py:111: UserWarning: The Sh
apely GEOS version (3.9.1-CAPI-1.14.2) is incompatible with the GEOS version PyGEOS was compiled
with (3.10.1-CAPI-1.16.0). Conversions between both will be slow.
  warnings.warn(
```

```
# Parameters
country = "Guyana"
```

```
Exposure files:
  Exposure_Com_Guyana.csv
  Exposure_Ind_Guyana.csv
  Exposure_Res_Guyana.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	786.8K	115.7K	$5,214.0M	89.52%	74.40%
Ind	0.0K	5.9K	$817.9M	4.54%	11.67%
Com	0.0K	7.7K	$976.0M	5.94%	13.93%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	11,085.5K	$4,793.6M	86	$632
Res	8,421.6K	$3,698.3M	73	$619
Ind	1,352.4K	$439.5M	231	$605
Com	1,311.5K	$655.8M	171	$744

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Demerara-Mahaica	$2,743.2M	44,126	269.3K	39.14%	34.13%	34.22%
East Berbice-Corentyne	$1,444.3M	31,378	193.0K	20.61%	24.27%	24.53%
Mahaica-Berbice	$1,078.0M	21,456	129.9K	15.38%	16.60%	16.52%
Essequibo Islands-West Demerara	$631.6M	9,359	56.6K	9.01%	7.24%	7.20%
Upper Takutu-Upper Essequibo	$317.1M	5,956	34.9K	4.53%	4.61%	4.44%
Cuyuni-Mazaruni	$315.9M	7,906	47.9K	4.51%	6.11%	6.08%
Barima-Waini	$200.9M	3,979	24.1K	2.87%	3.08%	3.06%
Pomeroon-Supenaam	$152.6M	2,978	18.1K	2.18%	2.30%	2.29%
Upper Demerara-Berbice	$87.1M	1,189	7.2K	1.24%	0.92%	0.92%
Potaro-Siparuni	$37.2M	963	5.8K	0.53%	0.75%	0.73%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
W	$3,084.2M	91,929	619.8K	44.01%	71.10%	78.77%
RC	$2,556.5M	13,984	66.0K	36.48%	10.82%	8.39%
MCF	$605.3M	4,863	0.0K	8.64%	3.76%	0.00%
MUR	$360.1M	10,265	65.1K	5.14%	7.94%	8.28%
S	$205.3M	2,146	0.0K	2.93%	1.66%	0.00%
OT	$109.7M	4,167	28.1K	1.57%	3.22%	3.58%
MR	$56.6M	786	0.0K	0.81%	0.61%	0.00%
ADO/E	$30.2M	1,149	7.8K	0.43%	0.89%	0.99%

Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST_USD`

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
W	W+WO/LWAL+DNO/H:1/RES	$2,174.9M	81,542	34.68%	66.86%
RC	CR/LFINF+DNO/H:1/RES	$985.8M	6,533	15.72%	5.36%
W	W+WLI/LWAL+DNO/H:1/RES	$772.8M	8,021	12.32%	6.58%
RC	CR/LFINF+DNO/H:2/RES	$760.6M	2,800	12.13%	2.30%
MCF	MCF/LWAL+DNO/H:2/COM	$278.4M	1,948	4.44%	1.60%
MUR	MUR/LWAL+DNO/H:1/RES	$229.7M	8,699	3.66%	7.13%
RC	CR/LFINF+DNO/HBET:1-3/IND	$221.6M	1,299	3.53%	1.07%
MCF	MCF/LWAL+DNO/H:2/IND	$165.3M	1,017	2.64%	0.83%
OT	UNK/LN+DNO/H:1/RES	$109.7M	4,167	1.75%	3.42%
MCF	MCF/LWAL+DNO/H:1/COM	$96.3M	1,348	1.54%	1.11%
RC	CR/LFINF+DUL/HBET:1-3/IND	$89.6M	525	1.43%	0.43%
W	W+WO/LWAL+DNO/H:2/RES	$78.8M	1,638	1.26%	1.34%
RC	CR/LFINF+DUL/HBET:4-6/COM	$73.4M	191	1.17%	0.16%
MUR	MUR/LWAL+DNO/H:2/COM	$69.0M	483	1.10%	0.40%
S	SR/LFM+DUL/H:1/IND	$64.4M	727	1.03%	0.60%
MR	MR/LWAL+DUL/H:1/COM	$53.2M	744	0.85%	0.61%
RC	CR/LWAL+DUL/HBET:1-3/IND	$48.1M	282	0.77%	0.23%