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 S
hapely GEOS version (3.9.1-CAPI-1.14.2) is incompatible with the GEOS version PyGEOS was compil
ed with (3.10.1-CAPI-1.16.0). Conversions between both will be slow.
  warnings.warn(
```

```
# Parameters
country = "Saint_Vincent_and_the_Grenadines"
```

```
Exposure files:
  Exposure_Com_Saint_Vincent_and_the_Grenadines.csv
  Exposure_Ind_Saint_Vincent_and_the_Grenadines.csv
  Exposure_Res_Saint_Vincent_and_the_Grenadines.csv
```

Sanity checks and formats

```
Saint_Vincent_and_the_Grenadines
  Exposure/Exposure/Exposure_Com_Saint_Vincent_and_the_Grenadines.csv
  Exposure/Exposure/Exposure_Ind_Saint_Vincent_and_the_Grenadines.csv
  Exposure/Exposure/Exposure_Res_Saint_Vincent_and_the_Grenadines.csv
  Occupants / Dwellings = 3.7
  No refence household size data available
  Population (exposure / UN_2021) = 0.95
  Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	106.0K	27,319	$1,439.9M	93.69%	70.50%
Ind	0.0K	374	$50.9M	1.28%	2.49%
Com	0.0K	1,465	$551.7M	5.02%	27.01%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	8,945.8K	$1,438.5M	307	$228
Res	8,011.5K	$1,042.8M	293	$180
Ind	140.1K	$28.1M	374	$363
Com	794.2K	$367.7M	542	$695

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Charlotte	$749.0M	10,701	38.5K	36.67%	36.70%	36.34%
Saint David	$461.9M	6,172	20.3K	22.61%	21.17%	19.18%
Saint George	$233.1M	3,229	14.8K	11.41%	11.07%	13.96%
Saint Patrick	$219.6M	3,493	11.8K	10.75%	11.98%	11.10%
Grenadines	$215.0M	3,131	10.3K	10.53%	10.74%	9.74%
Saint Andrew	$163.9M	2,432	10.3K	8.02%	8.34%	9.69%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$647.5M	5,183	21.5K	31.70%	17.78%	20.29%
W	$589.1M	8,215	32.6K	28.84%	28.17%	30.75%
MR	$584.3M	11,812	39.0K	28.61%	40.51%	36.77%
OT	$151.5M	3,064	12.9K	7.42%	10.51%	12.19%
S	$62.1M	772	0.0K	3.04%	2.65%	0.00%
MCF	$7.9M	112	0.0K	0.39%	0.38%	0.00%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MR	MR/LWAL+CDL+DUL/HEX:1/RES	$584.3M	11,812	33.45%	43.54%
W	W+WLI/LWAL+CDM+DUM/HEX:1/RES	$373.0M	7,541	21.35%	27.80%
RC	CR/LFINF+CDL+DUL/HEX:2/RES	$269.9M	4,198	15.45%	15.47%
W	W+WLI/LWAL+CDM+DUM/HEX:2/COM	$207.4M	498	11.87%	1.84%
RC	CR/LFINF+CDM+DUM/HEX:2/COM	$160.6M	15	9.19%	0.06%
OT	UNK/UNK+DNO/HEX:1/RES	$151.5M	3,064	8.67%	11.29%