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(
```

```python
# Parameters
country = "Vanuatu"
```

```
Exposure files:
    Exposure_Com_Vanuatu.csv
    Exposure_Ind_Vanuatu.csv
    Exposure_Res_Vanuatu.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	272.5K	90,699	$2,776.8M	94.07%	77.28%
Ind	0.0K	378	$85.5M	0.39%	2.38%
Com	0.0K	5,335	$730.7M	5.53%	20.34%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	3,368.4K	$2,574.3M	35	$1,067
Res	2,471.2K	$2,035.4M	27	$1,124
Ind	73.0K	$49.9M	193	$1,170
Com	824.1K	$489.0M	154	$887

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Shefa	$1,959.1M	23,006	97.6K	54.53%	23.86%	35.82%
Sanma	$726.5M	19,524	54.2K	20.22%	20.25%	19.89%
Malampa	$358.6M	19,566	40.9K	9.98%	20.29%	15.02%
Penama	$284.0M	14,755	32.5K	7.90%	15.30%	11.94%
Tafea	$212.5M	15,333	37.0K	5.91%	15.90%	13.60%
Torba	$52.3M	4,228	10.2K	1.46%	4.39%	3.73%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MCF	$1,700.8M	26,589	85,567	47.34%	27.58%	31.41%
W	$1,212.3M	67,091	179,795	33.74%	69.59%	65.99%
RC	$601.7M	1,470	4,683	16.75%	1.52%	1.72%
S	$78.2M	1,262	2,414	2.18%	1.31%	0.89%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MCF	MCF/LWAL+DUM/H:1/RES	$1,452.5M	23,846	46.22%	28.19%
W	W+WLI/LFBR+DUH/H:1/RES	$614.1M	19,672	19.54%	23.25%
RC	CR+CIP/LWAL+DUH/HBET:2-3/RES	$317.8M	770	10.11%	0.91%
	CR+CIP/LWAL+DUH/HBET:2-3/COM	$275.4M	692	8.76%	0.82%
W	W+WLI/LPB+DUH/EWV/RWO5/HBET:1-2/RES	$257.5M	37,010	8.19%	43.74%
MCF	MCF/LWAL+DUM/H:1/COM	$225.5M	2,615	7.17%	3.09%