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 = "Myanmar"
```

```
Exposure files:
  Exposure_Com_Myanmar.csv
  Exposure_Ind_Myanmar.csv
  Exposure_Res_Myanmar.csv
```

Sanity checks and formats

```
  Myanmar
   Exposure/Exposure/Exposure_Com_Myanmar.csv
   Exposure/Exposure/Exposure_Ind_Myanmar.csv
   Exposure/Exposure/Exposure_Res_Myanmar.csv
   Occupants / Dwellings = 4.6
   Reference avg household size (2019) = 4.2
   Population (exposure / UN_2021) = 0.92
  Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	50.2M	10,637.3K	$100,679.7M	98.98%	87.90%
Ind	0.0M	51.0K	$3,912.0M	0.47%	3.42%
Com	0.0M	58.5K	$9,950.9M	0.54%	8.69%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	602.8M	$84,663.9M	56	$190
Res	580.0M	$76,121.6M	55	$174
Ind	13.2M	$2,084.9M	260	$295
Com	9.6M	$6,457.5M	164	$1,034

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Yangon	$29,746.6M	1,425.7K	7,334.7K	25.97%	13.27%	14.62%
Mandalay	$13,496.6M	1,323.5K	6,152.7K	11.78%	12.32%	12.27%
Shan	$12,229.4M	1,177.8K	5,863.4K	10.68%	10.96%	11.69%
Ayeyarwady	$11,528.1M	1,493.3K	6,184.8K	10.06%	13.90%	12.33%
Bago	$9,521.3M	1,158.8K	4,916.0K	8.31%	10.78%	9.80%
Sagaing	$9,130.9M	1,101.8K	5,308.5K	7.97%	10.25%	10.58%
Magway	$7,685.5M	931.1K	3,933.9K	6.71%	8.66%	7.84%
Rakhine	$4,165.3M	464.5K	2,098.8K	3.64%	4.32%	4.18%
Mon	$4,160.9M	432.5K	2,063.6K	3.63%	4.02%	4.11%
Tanintharyi	$3,211.5M	291.2K	1,408.4K	2.80%	2.71%	2.81%
Nay Pyi Taw	$3,145.4M	235.4K	1,074.1K	2.75%	2.19%	2.14%
Kayin	$2,614.6M	288.5K	1,393.3K	2.28%	2.68%	2.78%
Kachin	$2,520.3M	270.1K	1,642.8K	2.20%	2.51%	3.28%
Chin	$780.9M	92.2K	478.8K	0.68%	0.86%	0.95%
Kayah	$605.5M	60.4K	300.8K	0.53%	0.56%	0.60%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
W	$62,928.9M	8,838.8K	40,378.8K	54.94%	82.25%	80.51%
RC	$37,763.6M	257.5K	1,999.6K	32.97%	2.40%	3.99%
MUR	$7,340.9M	955.0K	4,549.3K	6.41%	8.89%	9.07%
MIX	$4,785.5M	611.1K	2,869.8K	4.18%	5.69%	5.72%
S	$1,293.8M	10.6K	0.0K	1.13%	0.10%	0.00%
OT	$309.3M	55.7K	260.9K	0.27%	0.52%	0.52%
ADO/E	$120.6M	18.1K	96.3K	0.11%	0.17%	0.19%

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+WBB/LPB+DNO/H:1/RES**	$35,063.0M	5,259,449	34.14%	50.56%
	W/H:1/RES	$15,629.1M	2,031,788	15.22%	19.53%
RC	**CR/LFINF+DUL/H:2/RES**	$9,240.1M	154,002	9.00%	1.48%
W	**W+WO/LN/H:1/RES**	$9,084.0M	1,362,606	8.85%	13.10%
	CR/LFINF+DUL/H:5/RES	$5,264.4M	4,011	5.13%	0.04%
RC	**CR/LDUAL+DUL/HBET:6-12/RES**	$4,914.0M	1,300	4.79%	0.01%
	CR/LFINF+DUL/H:4/RES	$4,095.8M	4,876	3.99%	0.05%
MUR	**MUR/LWAL+DNO/H:1/RES**	$3,518.7M	633,373	3.43%	6.09%
RC	**CR/LDUAL+DUM/HBET:13-/COM12**	$3,367.4M	456	3.28%	0.00%
MIX	**MIX(M-W)/H:1/RES**	$3,244.3M	486,646	3.16%	4.68%
RC	**CR/LFINF+DUL/H:3/RES**	$3,229.8M	26,915	3.15%	0.26%
MUR	**MUR/LWAL+DNO/H:2/RES**	$2,231.4M	267,769	2.17%	2.57%
RC	**CR/LFM+DUL/HBET:1-2/IND1**	$1,966.3M	8,778	1.91%	0.08%
W	**W/H:2/RES**	$1,844.5M	159,855	1.80%	1.54%