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 = "Uruguay"
```

```
Exposure files:
  Exposure_Com_Uruguay.csv
  Exposure_Ind_Uruguay.csv
  Exposure_Res_Uruguay.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	3,485.3K	452.3K	$63.6B	90.28%	75.47%
Ind	0.0K	22.4K	$9.6B	4.48%	11.45%
Com	0.0K	26.2K	$11.0B	5.24%	13.09%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	77.8M	$61.9B	155	$1,084
Res	62.9M	$49.3B	139	$1,012
Ind	6.9M	$5.2B	308	$1,397
Com	8.0M	$7.4B	305	$1,379

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Montevideo	$24,885.8M	133,606	1,147.5K	29.53%	26.67%	32.92%
Canelones	$17,350.3M	94,920	783.8K	20.59%	18.95%	22.49%
San José	$3,790.8M	29,606	105.1K	4.50%	5.91%	3.02%
Salto	$3,702.8M	23,532	140.9K	4.39%	4.70%	4.04%
Maldonado	$3,305.3M	18,587	144.4K	3.92%	3.71%	4.14%
Colonia	$3,218.6M	20,248	123.4K	3.82%	4.04%	3.54%
Paysandú	$2,969.9M	18,031	119.4K	3.52%	3.60%	3.42%
Cerro Largo	$2,861.8M	18,738	104.5K	3.40%	3.74%	3.00%
Tacuarembó	$2,844.8M	19,435	97.4K	3.38%	3.88%	2.79%
Rivera	$2,730.6M	17,063	105.8K	3.24%	3.41%	3.04%
Soriano	$2,618.9M	16,851	97.2K	3.11%	3.36%	2.79%
Florida	$2,189.6M	14,463	78.5K	2.60%	2.89%	2.25%
Artigas	$2,134.9M	13,378	83.3K	2.53%	2.67%	2.39%
Lavalleja	$2,021.2M	13,162	72.7K	2.40%	2.63%	2.09%
Rocha	$2,015.9M	12,885	76.6K	2.39%	2.57%	2.20%
Durazno	$1,796.8M	11,937	62.2K	2.13%	2.38%	1.78%
Treinta y Tres	$1,699.2M	11,628	56.9K	2.02%	2.32%	1.63%
Río Negro	$1,420.5M	8,585	57.3K	1.69%	1.71%	1.64%
Flores	$724.0M	4,361	28.5K	0.86%	0.87%	0.82%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MCF	$37,914.1M	198,606	1,296.8K	44.99%	39.64%	37.21%
MUR	$23,992.0M	271,146	2,129.2K	28.47%	54.12%	61.09%
RC	$19,305.0M	20,401	59.3K	22.91%	4.07%	1.70%
S	$2,383.7M	7,947	0.0K	2.83%	1.59%	0.00%
MR	$629.4M	2,706	0.0K	0.75%	0.54%	0.00%
W	$57.3M	210	0.0K	0.07%	0.04%	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_%
MCF	MCF/LWAL+DNO/H:2/RES	$12,387.0M	54,509	16.36%	11.37%
	MCF/LWAL+DNO/H:1/RES	$9,175.6M	72,680	12.12%	15.16%
MUR	MUR/LWAL+DNO/H:1/RES	$6,504.3M	94,727	8.59%	19.76%
	MUR+ST/LWAL+DNO/H:1/RES	$6,348.4M	92,580	8.39%	19.31%
MCF	MCF/LWAL+DUL/H:2/RES	$6,193.4M	27,254	8.18%	5.68%
MUR	MUR/LWAL+DNO/H:2/RES	$5,017.6M	40,597	6.63%	8.47%
	MUR+ST/LWAL+DNO/H:2/RES	$4,897.2M	39,677	6.47%	8.27%
RC	CR/LFINF+DNO/HBET:4-6/RES	$4,819.6M	1,530	6.37%	0.32%
	CR/LFINF+DUL/HBET:4-6/RES	$4,819.6M	1,530	6.37%	0.32%
MCF	MCF/LWAL+DUL/H:1/RES	$3,440.8M	27,254	4.55%	5.68%
	MCF/LWAL+DNO/H:2/COM	$3,003.2M	6,493	3.97%	1.35%
RC	CR/LFINF+DNO/HBET:1-3/IND	$2,667.0M	5,080	3.52%	1.06%
MCF	MCF/LWAL+DNO/H:2/IND	$1,924.0M	3,848	2.54%	0.80%
	MCF/LWAL+DNO/H:1/COM	$1,053.1M	4,554	1.39%	0.95%
RC	CR/LFINF+DUL/HBET:1-3/IND	$1,004.9M	1,914	1.33%	0.40%
	CR/LFINF+DUL/HBET:4-6/COM	$888.7M	714	1.17%	0.15%
S	SR/LFM+DUL/H:1/IND	$797.2M	2,923	1.05%	0.61%
MUR	MUR/LWAL+DNO/H:2/COM	$751.3M	1,624	0.99%	0.34%