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 = "Bosnia_and_Herzegovina"
```

```
Exposure files:
  Exposure_Com_Bosnia_and_Herzegovina.csv
  Exposure_Ind_Bosnia_and_Herzegovina.csv
  Exposure_Res_Bosnia_and_Herzegovina.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	3,301.0K	1,078.2K	$55.4B	98.11%	77.19%
Ind	1,152.2K	6.6K	$7.7B	0.60%	10.77%
Com	1,320.4K	14.2K	$8.6B	1.29%	12.03%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	104,360.2K	$51,763.3M	95	$688
Res	95,633.0K	$44,347.2M	89	$580
Ind	4,226.5K	$3,094.9M	642	$1,831
Com	4,500.7K	$4,321.2M	317	$1,920

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Federacija Bosna i Hercegovina	$45,242.7M	637.6K	3,662.9K	63.00%	58.02%	63.44%
Repuplika Srpska	$24,300.3M	433.2K	2,037.6K	33.84%	39.42%	35.29%
Brcko	$2,270.6M	28.2K	73.2K	3.16%	2.56%	1.27%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$31,505.3M	236,681	2,481.2K	43.87%	21.54%	42.98%
MUR	$21,355.6M	491,704	1,688.0K	29.74%	44.74%	29.24%
MCF	$14,950.9M	322,868	1,128.6K	20.82%	29.38%	19.55%
S	$2,334.4M	2,042	357.2K	3.25%	0.19%	6.19%
ADO/E	$1,667.4M	45,657	118.7K	2.32%	4.15%	2.06%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MUR	MUR/LWAL+CDN/H:2/RES	$9,168.7M	295,531	14.19%	28.11%
MCF	MCF/LWAL+CDN/H:1/RES	$6,892.2M	180,252	10.66%	17.14%
MUR	MUR/LWAL+CDN/H:1/RES	$5,239.6M	153,962	8.11%	14.64%
	MUR/LWAL+CDN/HBET:3-5/RES	$4,669.8M	37,687	7.23%	3.58%
RC	CR/LFINF+CDL+LFC:0.0/HBET:3-5/RES	$4,664.1M	37,345	7.22%	3.55%
	CR/LFINF+CDM+LFC:0.0/HBET:6-/RES	$2,584.0M	3,030	4.00%	0.29%
MCF	MCF/LWAL+CDN/H:2/RES	$2,581.5M	75,806	3.99%	7.21%
RC	CR/LFINF+CDM+LFC:2.5/HBET:6-/RES	$2,140.4M	2,207	3.31%	0.21%
MCF	MCF/LWAL+CDL/H:1/RES	$1,583.1M	43,624	2.45%	4.15%
	CR/LFINF+CDM+LFC:0.0/HBET:3-5/RES	$1,575.7M	10,418	2.44%	0.99%
RC	CR/LFINF+CDM+LFC:0.0/H:2/RES	$1,521.6M	38,641	2.35%	3.67%
	CR/LFINF+CDL+LFC:3.75/HBET:3-5/RES	$1,419.0M	11,534	2.20%	1.10%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$1,360.0M	41,244	2.10%	3.92%
MCF	MCF/LWAL+CDN/H:2/COM	$1,339.3M	1,701	2.07%	0.16%
	CR/LFINF+CDL+LFC:0.0/H:2/RES	$1,330.6M	40,110	2.06%	3.81%
	CR/LFINF+CDM+LFC:2.5/H:2/RES	$1,302.6M	29,073	2.02%	2.77%
RC	CR/LFINF+CDM+LFC:2.5/HBET:3-5/RES	$1,285.1M	7,543	1.99%	0.72%
	CR/PC/LFM+CDL/H:1/IND	$1,185.9M	988	1.84%	0.09%
	CR/LFM+CDL/H:2/IND	$1,185.9M	988	1.84%	0.09%
	CR/LFINF+CDL+LFC:0.0/HBET:6-/RES	$1,133.2M	1,249	1.75%	0.12%
MUR	MUR/LWAL+CDN/H:2/COM	$1,094.8M	2,508	1.69%	0.24%
RC	CR/LFINF+CDL/H:1/IND	$948.8M	790	1.47%	0.08%
MCF	MCF/LWAL+CDN/H:1/COM	$931.2M	1,830	1.44%	0.17%
	CR/LFINF+CDM+LFC:0.0/H:2/COM	$876.1M	1,448	1.36%	0.14%
RC	CR/LFINF+CDL+LFC:3.75/HBET:6-/RES	$858.3M	972	1.33%	0.09%
	CR/LFINF+CDL+LFC:7.5/HBET:3-5/RES	$848.8M	7,093	1.31%	0.67%
S	S/LFM+CDM/H:1/IND	$828.3M	725	1.28%	0.07%
RC	CR/LFINF+CDM+LFC:2.5/H:2/COM	$804.7M	1,282	1.25%	0.12%
MCF	MCF/LWAL+CDL/H:1/IND	$790.6M	659	1.22%	0.06%
S	S/LFM+CDL/H:1/IND	$753.0M	659	1.17%	0.06%
MCF	MCF/LWAL+CDL/H:2/RES	$609.9M	18,656	0.94%	1.77%
MUR	MUR/LWAL+CDN/H:1/COM	$591.4M	1,445	0.92%	0.14%
S	S+SL/LFM+CDL/H:1/IND	$527.1M	461	0.82%	0.04%