

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 Shapely 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 = "Ivory_Coast"
```

Exposure files:
Exposure_Com_Ivory_Coast.csv
Exposure_Ind_Ivory_Coast.csv
Exposure_Res_Ivory_Coast.csv

Sanity checks and formats

Ivory_Coast
Exposure/Exposure/Exposure_Com_Ivory_Coast.csv
Exposure/Exposure/Exposure_Ind_Ivory_Coast.csv
Exposure/Exposure/Exposure_Res_Ivory_Coast.csv
Occupants / Dwellings = 5.1
Reference avg household size (2019) = 5.1
Population (exposure / UN_2021) = 0.97
Exposure models OK

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	26.3M	4,950.6K	\$69,134.3M	96.56%	87.21%
Ind	0.0M	37.2K	\$2,762.2M	0.73%	3.48%
Com	0.0M	139.3K	\$7,373.7M	2.72%	9.30%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	433.1M	\$64,964.0M	84	\$183
Res	396.4M	\$57,659.9M	80	\$174
Ind	10.6M	\$1,815.9M	285	\$261
Com	26.1M	\$5,488.2M	187	\$283

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
District Autonome D'Abidjan	\$16,393.6M	1,060.1K	5,448.2K	20.68%	20.68%	20.68%
Montagnes	\$8,560.9M	553.7K	2,845.4K	10.80%	10.80%	10.80%
Sassandra-Marahoue	\$8,157.2M	527.6K	2,711.2K	10.29%	10.29%	10.29%
Bas-Sassandra	\$8,017.8M	518.5K	2,664.9K	10.11%	10.11%	10.11%
Savanes	\$5,902.6M	381.7K	1,961.9K	7.45%	7.45%	7.45%
Goh-Djiboua	\$5,678.8M	367.3K	1,887.5K	7.16%	7.16%	7.16%
Lagunes	\$4,958.7M	320.7K	1,648.4K	6.26%	6.26%	6.26%
Valle Du Bandama	\$4,829.0M	312.3K	1,605.2K	6.09%	6.09%	6.09%
Lacs	\$4,381.3M	283.4K	1,456.4K	5.53%	5.53%	5.53%
Comoe	\$3,942.5M	255.0K	1,310.6K	4.97%	4.97%	4.97%
Zanzan	\$3,151.9M	203.9K	1,047.8K	3.98%	3.98%	3.98%
Woroba	\$3,061.5M	198.0K	1,017.7K	3.86%	3.86%	3.86%
District Autonome De Yamoussou*	\$1,215.3M	78.7K	404.6K	1.53%	1.54%	1.54%
Denguele	\$1,019.3M	66.1K	339.5K	1.29%	1.29%	1.29%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$28,126.9M	1,511.6K	7,585.2K	35.48%	29.48%	28.79%
ADO/E	\$26,708.0M	1,796.3K	9,286.9K	33.69%	35.03%	35.25%
W	\$15,294.7M	1,401.4K	7,270.3K	19.29%	27.33%	27.59%
RC	\$4,054.9M	92.2K	599.4K	5.12%	1.80%	2.27%
MCF	\$3,313.3M	114.6K	599.4K	4.18%	2.24%	2.27%
S	\$914.1M	9.3K	0.0K	1.15%	0.18%	0.00%
OT	\$858.2M	201.8K	1,008.3K	1.08%	3.94%	3.83%

Exposure by taxonomy

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

	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY			
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$13,088.9M	759,268	18.41%
MUR	MUR+CB/LWAL+CDN/H:2/RES	\$8,238.2M	430,100	11.59%
W	W+WWD/LWAL+CDN/H:1/RES	\$7,955.2M	935,361	11.19%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$7,947.8M	778,742	11.18%
W	W+WWD/LWAL+CDN/H:2/RES	\$5,614.7M	390,847	7.90%
	MUR+CB/LWAL+CDN/H:1/RES	\$5,002.4M	441,128	7.03%
MUR	MUR+CL/LWAL+CDN/H:2/RES	\$3,600.4M	187,971	5.06%
	MUR+CL/LWAL+CDN/H:1/RES	\$2,186.2M	192,789	3.07%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$1,730.5M	10,244	2.43%
	MUR+ADO/LWAL+CDN/H:2/COM	\$1,499.0M	23,495	2.11%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	\$1,467.2M	76,600	2.06%
ADO/E	MUR+ADO/LWAL+CDN/H:1/COM	\$1,460.0M	46,976	2.05%
RC	CR/LFINF+CDL/H:3/RES	\$1,375.1M	33,076	1.93%
	CR/LFINF+CDL/H:2/RES	\$1,119.2M	41,392	1.57%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	\$1,089.2M	5,804	1.53%
MCF	MCF+CB/LWAL+CDL/H:2/RES	\$1,042.5M	36,286	1.47%
	MUR+CB/LWAL+CDN/H:2/COM	\$952.6M	11,945	1.34%
MUR	MUR+CB/LWAL+CDN/H:1/COM	\$927.8M	23,888	1.30%
	MUR+STDRE/LWAL+CDN/H:1/RES	\$890.9M	78,563	1.25%
ADO/E	EWV/LN+CDN/H:1/RES	\$750.8M	176,544	1.06%
W	W/LWAL+CDL/H:2/RES	\$682.5M	29,690	0.96%
OT	ME+MEO/LWAL+CDN/H:1/RES	\$637.8M	149,971	0.90%
MCF	MCF+CB/LWAL+CDL/H:1/RES	\$633.0M	37,215	0.89%
RC	CR/LFINF+CDL/HBET:4-7/RES	\$613.5M	1,516	0.86%
MUR	MUR+CB/LWAL+CDN/H:1/IND	\$603.1M	12,363	0.85%