

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 = "Mali"
```

Exposure files:
Exposure_Com_Mali.csv
Exposure_Ind_Mali.csv
Exposure_Res_Mali.csv

Sanity checks and formats

Mali
Exposure/Exposure/Exposure_Com_Mali.csv
Exposure/Exposure/Exposure_Ind_Mali.csv
Exposure/Exposure/Exposure_Res_Mali.csv
Occupants / Dwellings = 6.0
Reference avg household size (2019) = 5.8
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	20.2M	3,197.6K	\$27,845.0M	97.33%	90.83%
Ind	0.0M	16.0K	\$700.8M	0.49%	2.29%
Com	0.0M	71.6K	\$2,111.5M	2.18%	6.89%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	278,466.1K	\$24,971.5M	85	\$110
Res	260,712.1K	\$22,927.2M	82	\$107
Ind	4,564.2K	\$462.6M	285	\$154
Com	13,189.8K	\$1,581.7M	184	\$160

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Koulikouro	\$5,983.1M	628.5K	3,879.1K	19.52%	19.13%	19.17%
Sikasso	\$5,492.7M	574.5K	3,547.5K	17.92%	17.49%	17.53%
Bamako	\$4,606.6M	469.7K	2,902.3K	15.03%	14.30%	14.34%
Segou	\$4,563.8M	474.5K	2,932.6K	14.89%	14.44%	14.49%
Kayes	\$3,934.6M	418.9K	2,582.2K	12.83%	12.75%	12.76%
Mopti	\$3,696.6M	409.2K	2,514.9K	12.06%	12.46%	12.43%
Tombouctou	\$1,281.0M	157.2K	957.3K	4.18%	4.78%	4.73%
Gao	\$991.5M	133.0K	804.2K	3.23%	4.05%	3.97%
Kidal	\$107.3M	19.7K	117.3K	0.35%	0.60%	0.58%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
ADO/E	\$21,481.3M	2,336,102	14,204.3K	70.07%	71.11%	70.19%
MUR	\$7,262.7M	690,411	4,434.7K	23.69%	21.02%	21.91%
RC	\$472.3M	17,563	160.5K	1.54%	0.53%	0.79%
OT	\$405.2M	152,451	913.2K	1.32%	4.64%	4.51%
W	\$402.2M	62,895	364.0K	1.31%	1.91%	1.80%
MCF	\$387.6M	21,764	160.6K	1.26%	0.66%	0.79%
S	\$245.9M	3,996	0.0K	0.80%	0.12%	0.00%

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	\$11,036.7M	1,024.4K	40.16%	33.03%
	MUR+ADO/LWAL+CDN/H:1/RES	\$6,701.7M	1,050.6K	24.38%	33.87%
	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$1,459.1M	13.8K	5.31%	0.45%
MUR	MUR+CB/LWAL+CDN/H:2/RES	\$1,322.3M	110.5K	4.81%	3.56%
	MUR+CL/LWAL+CDN/H:2/RES	\$1,243.8M	103.9K	4.53%	3.35%
	MUR+STRUB/LWAL+CDN/H:2/RES	\$1,057.8M	110.5K	3.85%	3.56%
	MUR+CB/LWAL+CDN/H:1/RES	\$802.9M	113.3K	2.92%	3.65%
	MUR+CL/LWAL+CDN/H:1/RES	\$755.2M	106.6K	2.75%	3.44%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	\$709.3M	17.8K	2.58%	0.57%
	MUR+ADO/LWAL+CDN/H:1/COM	\$690.8M	35.6K	2.51%	1.15%
MUR	MUR+STRUB/LWAL+CDN/H:1/RES	\$642.3M	113.3K	2.34%	3.65%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	\$521.6M	98.1K	1.90%	3.16%
OT	MATO/RES	\$288.2M	108.4K	1.05%	3.50%
ADO/E	EWV/LN+CDN/H:1/RES	\$252.7M	95.1K	0.92%	3.06%

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