

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 = "Liberia"
```

Exposure files:
Exposure_Com_Liberia.csv
Exposure_Ind_Liberia.csv
Exposure_Res_Liberia.csv

Sanity checks and formats

Liberia
Exposure/Exposure/Exposure_Com_Liberia.csv
Exposure/Exposure/Exposure_Ind_Liberia.csv
Exposure/Exposure/Exposure_Res_Liberia.csv
Occupants / Dwellings = 5.2
Reference avg household size (2019) = 5.08
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	5.0M	940.7K	\$11,256.0M	95.10%	81.01%
Ind	0.0M	8.2K	\$577.7M	0.83%	4.16%
Com	0.0M	40.3K	\$2,060.8M	4.07%	14.83%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	81,336.4K	\$11,270.9M	82	\$171
Res	71,612.4K	\$9,348.2M	76	\$157
Ind	2,316.5K	\$382.3M	283	\$249
Com	7,407.6K	\$1,540.4M	184	\$278

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Montserrado	\$5,231.7M	359.4K	1,832.6K	37.65%	36.34%	36.51%
Nimba	\$1,783.1M	121.4K	620.4K	12.83%	12.27%	12.36%
Bong	\$1,171.5M	83.4K	422.5K	8.43%	8.43%	8.42%
Lofa	\$972.5M	71.2K	360.7K	7.00%	7.19%	7.19%
Margibi	\$807.4M	53.9K	275.3K	5.81%	5.45%	5.49%
Grand Bassa	\$797.9M	57.1K	289.5K	5.74%	5.78%	5.77%
Maryland	\$553.2M	41.9K	210.3K	3.98%	4.23%	4.19%
Grand Gedeh	\$493.3M	39.1K	195.4K	3.55%	3.95%	3.89%
Grand Cape Mount	\$482.7M	35.1K	177.7K	3.47%	3.55%	3.54%
Sinoe	\$372.8M	28.4K	143.0K	2.68%	2.87%	2.85%
Gbarpolu	\$303.7M	24.2K	121.1K	2.19%	2.45%	2.41%
Bomi	\$287.8M	20.7K	104.8K	2.07%	2.10%	2.09%
Rivercess	\$249.4M	21.7K	108.4K	1.79%	2.19%	2.16%
River Gee	\$238.0M	19.2K	96.1K	1.71%	1.95%	1.91%
Grand Kru	\$149.5M	12.3K	61.4K	1.08%	1.25%	1.22%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$4,992.0M	246,717	1,180.6K	35.93%	24.94%	23.52%
W	\$4,873.9M	481,709	2,547.2K	35.08%	48.70%	50.75%
ADO/E	\$2,554.0M	164,414	804.5K	18.38%	16.62%	16.03%
MCF	\$842.3M	28,347	145.8K	6.06%	2.87%	2.90%
OT	\$255.1M	61,705	314.4K	1.84%	6.24%	6.26%
S	\$194.2M	2,050	0.0K	1.40%	0.21%	0.00%
RC	\$182.8M	4,222	26.8K	1.32%	0.43%	0.53%

Exposure by taxonomy

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

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
W	W+WWD/LWAL+CDN/H:1/RES	\$2,777.6M	335,911	22.33%	35.52%
	W+WWD/LWAL+CDN/H:2/RES	\$1,960.4M	140,360	15.76%	14.84%
MUR	MUR+CB/LWAL+CDN/H:2/RES	\$1,381.6M	74,192	11.11%	7.84%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$1,030.2M	61,472	8.28%	6.50%
MUR	MUR+CB/LWAL+CDN/H:1/RES	\$838.9M	76,092	6.74%	8.05%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$625.6M	63,043	5.03%	6.67%
	MUR+CL/LWAL+CDN/H:2/RES	\$384.3M	20,641	3.09%	2.18%
MUR	MUR+CB/LWAL+CDN/H:2/COM	\$381.4M	4,920	3.07%	0.52%
	MUR+CB/LWAL+CDN/H:1/COM	\$371.5M	9,834	2.99%	1.04%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	\$312.9M	5,043	2.52%	0.53%
	MUR+ADO/LWAL+CDN/H:1/COM	\$304.8M	10,083	2.45%	1.07%
MCF	MCF+CB/LWAL+CDL/H:2/RES	\$289.4M	10,362	2.33%	1.10%
MUR	MUR+CL/LWAL+CDN/H:1/RES	\$233.4M	21,170	1.88%	2.24%
OT	ME+MEO/LWAL+CDN/H:1/RES	\$197.5M	47,781	1.59%	5.05%
	MUR+STDRE/LWAL+CDN/H:2/RES	\$187.8M	10,087	1.51%	1.07%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	\$182.2M	998	1.46%	0.11%
MCF	MCF+CB/LWAL+CDL/H:1/RES	\$175.7M	10,627	1.41%	1.12%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$136.1M	830	1.09%	0.09%
	MUR+CB/LWAL+CDN/H:1/IND	\$126.7M	2,675	1.02%	0.28%
MUR	MUR+CL/LWAL+CDN/H:2/COM	\$119.9M	1,546	0.96%	0.16%
	MUR+CL/LWAL+CDN/H:1/COM	\$116.7M	3,092	0.94%	0.33%
	MUR+STDRE/LWAL+CDN/H:1/RES	\$114.0M	10,344	0.92%	1.09%
ADO/E	EWV/LN+CDN/H:1/RES	\$98.1M	23,735	0.79%	2.51%
MUR	MUR+CB/LWAL+CDN/H:2/IND	\$92.1M	888	0.74%	0.09%

--