

# 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 = "Venezuela"
```

Exposure files:  
Exposure\_Com\_Venezuela.csv  
Exposure\_Ind\_Venezuela.csv  
Exposure\_Res\_Venezuela.csv

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	28.7M	6,636.2K	\$394.4B	93.25%	75.37%
Ind	0.0M	190.8K	\$63.6B	2.68%	12.15%
Com	0.0M	289.9K	\$65.3B	4.07%	12.47%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	688.1M	\$380.2B	97	\$761
Res	553.7M	\$303.6B	83	\$712
Ind	59.5M	\$33.9B	312	\$1,069
Com	74.9M	\$42.7B	258	\$871

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Zulia	\$63,934.8M	886,117	3,841,603	12.22%	12.45%	13.39%
Miranda	\$54,492.5M	739,949	2,830,357	10.41%	10.40%	9.86%
Distrito Capital	\$45,425.0M	519,906	2,098,180	8.68%	7.31%	7.31%
Carabobo	\$43,554.0M	579,887	2,345,379	8.32%	8.15%	8.17%
Aragua	\$33,573.6M	433,375	1,703,065	6.42%	6.09%	5.93%
Lara	\$31,996.3M	460,582	1,871,785	6.11%	6.47%	6.52%
Anzoátegui	\$28,428.1M	387,449	1,540,042	5.43%	5.44%	5.37%
Bolívar	\$26,330.8M	367,756	1,471,759	5.03%	5.17%	5.13%
Táchira	\$23,758.9M	324,475	1,245,881	4.54%	4.56%	4.34%
Mérida	\$19,183.3M	236,678	897,044	3.67%	3.33%	3.13%
Portuguesa	\$16,519.9M	238,997	932,489	3.16%	3.36%	3.25%
Monagas	\$16,119.1M	223,460	938,364	3.08%	3.14%	3.27%
Sucre	\$15,961.6M	221,959	936,524	3.05%	3.12%	3.26%
Barinas	\$15,675.9M	222,719	854,279	3.00%	3.13%	2.98%
Trujillo	\$14,373.1M	193,857	740,057	2.75%	2.72%	2.58%
Guárico	\$14,036.3M	203,544	782,590	2.68%	2.86%	2.73%
Falcón	\$13,449.5M	217,958	978,823	2.57%	3.06%	3.41%
Yaracuy	\$10,970.7M	157,418	643,362	2.10%	2.21%	2.24%
Nueva Esparta	\$10,335.1M	130,522	529,968	1.97%	1.83%	1.85%
Apure	\$7,080.0M	112,492	477,632	1.35%	1.58%	1.66%
Vargas	\$6,803.0M	95,409	379,569	1.30%	1.34%	1.32%
Cojedes	\$6,602.0M	91,037	338,000	1.26%	1.28%	1.18%
Delta Amacuro	\$2,518.9M	37,209	168,870	0.48%	0.52%	0.59%
Amazonas	\$2,187.3M	33,762	152,796	0.42%	0.47%	0.53%
Dependencias federales	\$19.7M	401	2,034	0.00%	0.01%	0.01%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$175,976.7M	4,012.4K	16,206.7K	33.63%	56.38%	56.47%
MCF	\$173,490.6M	1,439.6K	6,776.7K	33.15%	20.23%	23.61%
RC	\$75,034.3M	212.3K	756.3K	14.34%	2.98%	2.64%
S	\$39,775.8M	185.9K	31.0K	7.60%	2.61%	0.11%
ADO/E	\$29,638.8M	721.0K	2,799.1K	5.66%	10.13%	9.75%
W	\$29,140.5M	540.5K	2,104.8K	5.57%	7.59%	7.33%
OT	\$272.9M	5.4K	26.0K	0.05%	0.08%	0.09%

## Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST\_USD`

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
MUR	MUR/LWAL+DNO/H:1/RES	\$115,980.9M	2,604.5K	24.81%	37.90%
MCF	MCF/LWAL+DNO/H:1/RES	\$50,706.9M	704.3K	10.85%	10.25%
MUR	MUR/LWAL+DNO/H:2/RES	\$39,706.9M	1,188.9K	8.49%	17.30%
MCF	MCF/LWAL+DUH/H:1/RES	\$32,275.8M	212.3K	6.90%	3.09%
MCF	MCF/LWAL+DNO/H:2/RES	\$31,553.3M	219.1K	6.75%	3.19%
ADO/E	MUR+ADO/LWAL+DNO/H:1/RES	\$22,237.2M	499.4K	4.76%	7.27%
MCF	MCF/LWAL+DUH/H:2/RES	\$17,611.3M	57.9K	3.77%	0.84%
W	W+WO/LN+DNO/H:1/RES	\$15,922.6M	290.5K	3.41%	4.23%
MUR	MUR/LWAL+DNO/H:3/RES	\$11,804.3M	176.7K	2.52%	2.57%
W	W+WWD/LWAL+DNO/H:1/RES	\$11,233.3M	205.0K	2.40%	2.98%
MCF	MCF/LWAL+DNO/H:3/RES	\$10,696.5M	99.0K	2.29%	1.44%
RC	CR/LFINF+DNO/HBET:1-3/IND3	\$9,268.8M	23.2K	1.98%	0.34%
	CR/LFINF+DNO/H:3/RES	\$8,406.0M	41.5K	1.80%	0.60%
ADO/E	MUR+ADO/LWAL+DNO/H:2/RES	\$7,401.6M	221.6K	1.58%	3.22%
S	SR/LFM+DUL/H:1/IND2	\$6,802.9M	18.8K	1.46%	0.27%
RC	CR/LFINF+DUH/H:3/RES	\$6,064.9M	14.2K	1.30%	0.21%
MCF	MCF/LWAL+DUH/H:3/RES	\$6,042.2M	26.5K	1.29%	0.39%
MUR	MUR/LWAL+DNO/H:2/COM1	\$5,735.2M	23.5K	1.23%	0.34%
RC	CR/LFINF+DNO/HBET:1-3/IND2	\$5,609.7M	8.0K	1.20%	0.12%
	CR+PC/LFM+DUL/H:1/IND2	\$5,227.7M	13.1K	1.12%	0.19%
S	SR/LFM+DUL/H:1/IND3	\$4,772.0M	23.0K	1.02%	0.33%
	SL/LFM+DUL/H:1/IND3	\$4,767.9M	23.0K	1.02%	0.33%
RC	CR/LFINF+DNO/HBET:1-3/COM1	\$4,748.6M	20.6K	1.02%	0.30%
S	SL/LFM+DUL/H:1/IND2	\$4,529.7M	12.5K	0.97%	0.18%
MCF	MCF/LWAL+DNO/H:2/IND3	\$4,479.8M	11.8K	0.96%	0.17%
S	SR/LFM+DUL/H:1/COM1	\$4,458.1M	31.3K	0.95%	0.46%
	SL/LFM+DUL/H:1/COM1	\$4,431.0M	31.1K	0.95%	0.45%
RC	CR+PC/LFM+DUL/H:1/IND3	\$3,909.1M	17.1K	0.84%	0.25%
MCF	MCF/LWAL+DNO/H:2/COM1	\$3,831.0M	15.7K	0.82%	0.23%
	MCF/LWAL+DNO/H:1/COM1	\$3,784.6M	31.0K	0.81%	0.45%
RC	CR+PC/LFM+DUL/HBET:1-3/COM5	\$3,525.3M	7.7K	0.75%	0.11%