

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 = "Algeria"
```

Exposure files:
Exposure_Com_Algeria.csv
Exposure_Ind_Algeria.csv
Exposure_Res_Algeria.csv

Sanity checks and formats

Algeria
Exposure/Exposure/Exposure_Com_Algeria.csv
Exposure/Exposure/Exposure_Ind_Algeria.csv
Exposure/Exposure/Exposure_Res_Algeria.csv
Occupants / Dwellings = 5.9
Reference avg household size (2019) = 5.9
Population (exposure / UN_2021) = 0.98
Exposure models OK

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	43.8M	6,633.3K	\$237.1B	92.91%	77.52%
Ind	0.0M	199.4K	\$28.8B	2.79%	9.43%
Com	0.0M	306.8K	\$39.9B	4.30%	13.04%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	732.9M	\$233.5B	103	\$417
Res	609.3M	\$189.9B	92	\$389
Ind	56.8M	\$16.5B	285	\$508
Com	66.8M	\$27.1B	218	\$597

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Algiers	\$30,425.2M	709.7K	4,351.3K	9.95%	9.94%	9.94%
Oran	\$15,183.7M	354.2K	2,171.8K	4.97%	4.96%	4.96%
Sétif	\$12,246.2M	285.8K	1,751.9K	4.00%	4.00%	4.00%
Djelfa	\$11,645.8M	271.8K	1,666.2K	3.81%	3.81%	3.81%
Batna	\$10,325.2M	241.0K	1,477.3K	3.38%	3.38%	3.38%
Blida	\$9,539.7M	222.6K	1,365.0K	3.12%	3.12%	3.12%
M'Sila	\$9,030.7M	210.8K	1,292.2K	2.95%	2.95%	2.95%
Constantine	\$8,677.1M	202.5K	1,241.6K	2.84%	2.84%	2.84%
Chlef	\$8,355.3M	195.0K	1,195.5K	2.73%	2.73%	2.73%
Tizi Ouzou	\$8,054.7M	188.0K	1,152.5K	2.63%	2.63%	2.63%
Tiaret	\$7,966.8M	185.9K	1,139.9K	2.61%	2.60%	2.60%
Tlemcen	\$7,664.7M	178.9K	1,096.8K	2.51%	2.51%	2.51%
Skikda	\$7,388.4M	172.4K	1,057.2K	2.42%	2.42%	2.42%
Boumerdes	\$7,353.1M	171.6K	1,052.2K	2.40%	2.40%	2.40%
Biskra	\$7,001.3M	163.5K	1,002.1K	2.29%	2.29%	2.29%
Bejaia	\$6,907.8M	161.3K	988.7K	2.26%	2.26%	2.26%
Mascara	\$6,518.3M	152.2K	933.1K	2.13%	2.13%	2.13%
Aïn Defla	\$6,374.9M	148.8K	912.5K	2.08%	2.08%	2.08%
Mila	\$6,240.0M	145.7K	893.2K	2.04%	2.04%	2.04%
Mostaganem	\$6,160.1M	143.8K	881.8K	2.01%	2.01%	2.01%
El Oued	\$6,084.2M	142.0K	870.9K	1.99%	1.99%	1.99%
Médéa	\$6,082.1M	142.0K	870.6K	1.99%	1.99%	1.99%
Relizane	\$5,881.8M	137.3K	842.0K	1.92%	1.92%	1.92%
Annaba	\$5,811.4M	135.7K	831.9K	1.90%	1.90%	1.90%
Tébessa	\$5,516.1M	128.8K	789.6K	1.80%	1.80%	1.80%
Bouira	\$5,469.7M	127.7K	783.0K	1.79%	1.79%	1.79%
Oum El Bouaghi	\$5,397.4M	126.0K	772.7K	1.77%	1.77%	1.77%
Ouargla	\$5,375.7M	125.5K	769.6K	1.76%	1.76%	1.76%
Bordj Bou Arreridj?	\$5,149.7M	120.2K	737.2K	1.68%	1.68%	1.68%
Laghouat	\$5,145.0M	120.1K	736.5K	1.68%	1.68%	1.68%
Jijel	\$5,015.8M	117.1K	718.1K	1.64%	1.64%	1.64%
Sidi Bel Abbès	\$5,014.4M	117.1K	717.9K	1.64%	1.64%	1.64%
Tipaza	\$4,890.6M	114.2K	700.2K	1.60%	1.60%	1.60%
Tissemsilt	\$4,531.6M	105.9K	649.0K	1.48%	1.48%	1.48%
Souk Ahras	\$3,877.6M	90.6K	555.5K	1.27%	1.27%	1.27%
Guelma	\$3,863.6M	90.3K	553.5K	1.26%	1.26%	1.26%
Adrar	\$3,801.0M	88.8K	544.5K	1.24%	1.24%	1.24%
El Tarf	\$3,381.4M	79.0K	484.5K	1.11%	1.11%	1.11%
Khenchela	\$3,296.9M	77.1K	472.4K	1.08%	1.08%	1.08%
Ghardaia	\$3,207.2M	75.0K	459.5K	1.05%	1.05%	1.05%
Aïn Témouchent	\$3,029.5M	70.8K	434.1K	0.99%	0.99%	0.99%
Saïda	\$2,846.4M	66.5K	407.9K	0.93%	0.93%	0.93%
Naâma	\$2,452.4M	57.4K	352.0K	0.80%	0.80%	0.80%
Béchar	\$2,328.9M	54.5K	334.4K	0.76%	0.76%	0.76%
El Bayadh	\$2,327.2M	54.5K	334.1K	0.76%	0.76%	0.76%
Tamanrasset	\$1,664.3M	39.0K	239.1K	0.54%	0.55%	0.55%
Tindouf	\$689.0M	16.3K	99.7K	0.23%	0.23%	0.23%
Illizi	\$603.8M	14.3K	87.4K	0.20%	0.20%	0.20%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$115,524.7M	1,472.7K	10,968.2K	37.78%	20.63%	25.06%
MUR	\$101,744.9M	3,195.3K	18,520.6K	33.27%	44.76%	42.31%
MCF	\$47,241.8M	914.8K	5,484.1K	15.45%	12.81%	12.53%
ADO/E	\$26,374.5M	1,186.3K	6,932.5K	8.62%	16.62%	15.84%
S	\$8,515.0M	49.9K	0.0K	2.78%	0.70%	0.00%
W	\$4,908.9M	115.3K	655.7K	1.61%	1.62%	1.50%
OT	\$1,484.1M	205.2K	1,209.4K	0.49%	2.87%	2.76%

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+CB/LWAL+CDN/H:2/RES	\$19,109.3M	590,947	6.95%	8.88%
	MUR+CL/LWAL+CDN/H:2/RES	\$19,109.3M	590,947	6.95%	8.88%
RC	CR/LFINF+CDL/H:3/RES	\$19,046.2M	270,433	6.93%	4.06%
MCF	MCF/LWAL+CDL/H:2/RES	\$17,008.6M	348,079	6.19%	5.23%
RC	CR/LFINF+CDL/H:2/RES	\$15,502.6M	338,412	5.64%	5.08%
MUR	MUR+CB/LWAL+CDN/H:1/RES	\$11,603.6M	606,101	4.22%	9.11%
	MUR+CL/LWAL+CDN/H:1/RES	\$11,603.6M	606,101	4.22%	9.11%
MCF	MCF/LWAL+CDL/H:1/RES	\$10,328.0M	357,002	3.76%	5.36%
RC	CR/LFINF+CDL/HBET:4-7/RES	\$8,498.0M	12,399	3.09%	0.19%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	\$8,412.0M	581,552	3.06%	8.74%
	MUR+ADO/LWAL+CDN/H:2/RES	\$7,896.4M	269,329	2.87%	4.05%
RC	CR/LDUAL+CDL/H:3/RES	\$7,618.5M	108,173	2.77%	1.63%
	CR/LDUAL+CDL/H:2/RES	\$6,201.1M	135,360	2.26%	2.03%
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	\$5,674.6M	219,359	2.06%	3.30%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$4,794.9M	276,236	1.74%	4.15%
MCF	MCF/LWAL+CDL/HBET:3-6/RES	\$4,747.2M	9,918	1.73%	0.15%
RC	CR/LWAL+CDL/H:3/RES	\$3,809.2M	54,091	1.39%	0.81%
	CR/LFINF+CDM/H:3/RES	\$3,627.8M	51,516	1.32%	0.77%
MUR	MUR+STRUB/LWAL+CDN/H:1/RES	\$3,445.7M	224,982	1.25%	3.38%
RC	CR/LDUAL+CDL/HBET:4-7/RES	\$3,399.2M	4,959	1.24%	0.07%
MCF	MCF/LWAL+CDM/H:2/RES	\$3,239.7M	66,299	1.18%	1.00%
RC	CR/LWAL+CDL/H:2/RES	\$3,100.5M	67,682	1.13%	1.02%
	CR/LFINF+CDM/H:2/RES	\$2,952.9M	64,460	1.07%	0.97%
	CR/LFINF+CDL/H:1/RES	\$2,689.6M	99,170	0.98%	1.49%
	MUR+CB/LWAL+CDN/H:2/COM	\$2,683.8M	19,690	0.98%	0.30%
MUR	MUR+CL/LWAL+CDN/H:2/COM	\$2,683.8M	19,690	0.98%	0.30%
	S/LFM+CDL/H:1/IND	\$2,661.0M	20,165	0.97%	0.30%
RC	CR/LFINF+CDL/HBET:8+/RES	\$2,655.6M	3,102	0.97%	0.05%
	CR/LFINF+CDL/H:3/COM	\$2,640.3M	7,408	0.96%	0.11%
	MUR+CB/LWAL+CDN/H:1/COM	\$2,613.8M	39,391	0.95%	0.59%
	MUR+CL/LWAL+CDN/H:1/COM	\$2,613.8M	39,391	0.95%	0.59%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	\$2,526.4M	7,976	0.92%	0.12%
	MUR+CL/LWAL+CDN/HBET:3-6/RES	\$2,526.4M	7,976	0.92%	0.12%
	CR/LFINF+CDL/H:1/IND	\$2,461.5M	16,960	0.90%	0.25%
RC	CR/LFINF+CDL/H:2/COM	\$2,174.5M	11,109	0.79%	0.17%
	MCF/LWAL+CDL/H:2/COM	\$2,076.9M	11,426	0.76%	0.17%
MUR	MUR+CB/LWAL+CDN/H:1/IND	\$2,072.9M	24,757	0.75%	0.37%
	MUR+CL/LWAL+CDN/H:1/IND	\$2,072.9M	24,757	0.75%	0.37%
MCF	MCF/LWAL+CDL/H:1/COM	\$2,022.8M	22,861	0.74%	0.34%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	\$1,991.2M	18,265	0.72%	0.27%
MCF	MCF/LWAL+CDM/H:1/RES	\$1,967.2M	68,003	0.72%	1.02%
ADO/E	MUR+ADO/LWAL+CDN/H:1/COM	\$1,939.3M	36,528	0.71%	0.55%
S	S/LFM+CDL/H:2/IND	\$1,934.6M	6,721	0.70%	0.10%
RC	CR/LFINF+CDL/H:2/IND	\$1,790.2M	5,654	0.65%	0.08%
	CR/LWAL+CDL/HBET:4-7/RES	\$1,699.6M	2,482	0.62%	0.04%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	\$1,664.0M	51,456	0.61%	0.77%
RC	CR/LFINF+CDL/HBET:4-7/COM	\$1,658.7M	1,902	0.60%	0.03%
MCF	MCF/LWAL+CDL/H:1/IND	\$1,641.0M	13,561	0.60%	0.20%
RC	CR/LFINF+CDM/HBET:4-7/RES	\$1,618.7M	2,362	0.59%	0.04%
MUR	MUR+CB/LWAL+CDN/H:2/IND	\$1,507.6M	8,255	0.55%	0.12%
	MUR+CL/LWAL+CDN/H:2/IND	\$1,507.6M	8,255	0.55%	0.12%
S	S+SL/LFM+CDL/H:1/IND	\$1,482.6M	11,234	0.54%	0.17%
RC	CR/LDUAL+CDM/H:3/RES	\$1,451.1M	20,607	0.53%	0.31%
W	W/LWAL+CDL/H:2/RES	\$1,444.9M	36,616	0.53%	0.55%
MCF	MCF/LWAL+CDL/H:2/IND	\$1,193.5M	4,522	0.43%	0.07%
RC	CR/LDUAL+CDM/H:2/RES	\$1,181.2M	25,783	0.43%	0.39%
S	S+SL/LFM+CDL/H:2/IND	\$1,078.3M	3,742	0.39%	0.06%
	CR/LDUAL+CDL/H:1/RES	\$1,075.8M	39,666	0.39%	0.60%
	CR/LDUAL+CDL/HBET:8+/RES	\$1,062.2M	1,240	0.39%	0.02%
RC	CR/LDUAL+CDL/H:3/COM	\$1,056.1M	2,963	0.38%	0.04%
	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$1,044.0M	3,636	0.38%	0.05%
RC	CR/LFINF+CDL/HBET:8+/COM	\$1,016.7M	324	0.37%	0.00%
MUR	MUR+STDRE/LWAL+CDN/H:1/RES	\$1,010.4M	52,779	0.37%	0.79%