

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 = "Egypt"

Exposure files:
Exposure_Com_Egypt.csv
Exposure_Ind_Egypt.csv
Exposure_Res_Egypt.csv

Sanity checks and formats

Egypt
Exposure/Exposure/Exposure_Com_Egypt.csv
Exposure/Exposure/Exposure_Ind_Egypt.csv
Exposure/Exposure/Exposure_Res_Egypt.csv
Occupants / Dwellings = 4.1
Reference avg household size (2019) = 4.12
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	102.1M	22,800.6K	\$431.0B	92.38%	75.56%
Ind	0.0M	699.1K	\$58.2B	2.83%	10.21%
Com	0.0M	1,181.6K	\$81.2B	4.79%	14.23%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	2,408.4M	\$436.8B	98	\$237
Res	1,969.2M	\$347.0B	86	\$219
Ind	199.2M	\$34.2B	285	\$292
Com	240.0M	\$55.5B	203	\$338

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Giza Governorate	\$57,197.0M	2,474.8K	10,238.7K	10.03%	10.03%	10.03%
Cairo Governorate	\$45,957.4M	1,988.5K	8,226.7K	8.06%	8.06%	8.06%
Dakahlia Governorate	\$40,957.6M	1,772.2K	7,331.7K	7.18%	7.18%	7.18%
Al Sharqia Governorate	\$38,551.0M	1,668.1K	6,900.9K	6.76%	6.76%	6.76%
Qalyubia Governorate	\$37,871.9M	1,638.7K	6,779.4K	6.64%	6.64%	6.64%
Beheira Governorate	\$35,414.2M	1,532.4K	6,339.6K	6.21%	6.21%	6.21%
Minya Governorate	\$32,145.7M	1,391.0K	5,754.6K	5.64%	5.64%	5.64%
Alexandria Governorate	\$31,419.9M	1,359.6K	5,624.7K	5.51%	5.51%	5.51%
Gharbiyya Governorate	\$29,690.5M	1,284.7K	5,315.1K	5.21%	5.21%	5.21%
Sohag Governorate	\$25,251.2M	1,092.6K	4,520.4K	4.43%	4.43%	4.43%
Asyut Governorate	\$24,906.2M	1,077.7K	4,458.6K	4.37%	4.37%	4.37%
Monufia Governorate	\$24,043.5M	1,040.4K	4,304.2K	4.22%	4.22%	4.22%
Luxor Governorate	\$23,423.0M	1,013.5K	4,193.1K	4.11%	4.11%	4.11%
Kafr el-Sheikh Governorate	\$22,850.5M	988.8K	4,090.6K	4.01%	4.01%	4.01%
Faiyum Governorate	\$20,444.5M	884.7K	3,659.9K	3.58%	3.58%	3.58%
Beni Suef Governorate	\$18,406.2M	796.5K	3,295.0K	3.23%	3.23%	3.23%
Qena Governorate	\$11,886.5M	514.4K	2,128.1K	2.08%	2.08%	2.08%
Damietta Governorate	\$9,412.8M	407.3K	1,685.2K	1.65%	1.65%	1.65%
Aswan Governorate	\$9,059.7M	392.0K	1,622.0K	1.59%	1.59%	1.59%
New Valley Governorate	\$7,940.3M	343.6K	1,421.6K	1.39%	1.39%	1.39%
Ismailia Governorate	\$6,266.2M	271.2K	1,122.1K	1.10%	1.10%	1.10%
Port Said Governorate	\$4,362.2M	188.9K	781.3K	0.76%	0.77%	0.77%
Suez Governorate	\$3,882.4M	168.2K	695.8K	0.68%	0.68%	0.68%
Matrouh Governorate	\$3,396.1M	147.1K	608.7K	0.60%	0.60%	0.60%
North Sinai Governorate	\$2,554.3M	110.7K	458.0K	0.45%	0.45%	0.45%
Red Sea Governorate	\$2,088.5M	90.5K	374.6K	0.37%	0.37%	0.37%
South Sinai Governorate	\$993.8M	43.2K	178.7K	0.17%	0.18%	0.17%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$249,504.4M	12,626.6K	50,776.8K	43.74%	51.16%	49.73%
RC	\$144,898.2M	2,926.2K	14,858.9K	25.40%	11.86%	14.55%
ADO/E	\$84,197.8M	5,986.7K	24,375.5K	14.76%	24.26%	23.87%
MCF	\$59,132.2M	1,818.6K	7,429.4K	10.37%	7.37%	7.28%
S	\$18,679.1M	174.8K	0.0K	3.27%	0.71%	0.00%
W	\$10,524.1M	388.3K	1,531.6K	1.85%	1.57%	1.50%
OT	\$3,437.1M	760.2K	3,136.8K	0.60%	3.08%	3.07%

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	\$40,220.0M	1,989,535	7.86%	8.60%
	MUR+CL/LWAL+CDN/H:2/RES	\$40,220.0M	1,989,535	7.86%	8.60%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	\$26,412.9M	2,920,847	5.16%	12.63%
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	\$25,956.2M	1,604,946	5.07%	6.94%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$24,793.9M	1,352,717	4.84%	5.85%
MUR	MUR+CB/LWAL+CDN/H:1/RES	\$24,422.3M	2,040,549	4.77%	8.83%
	MUR+CL/LWAL+CDN/H:1/RES	\$24,422.3M	2,040,549	4.77%	8.83%
	MUR+STRUB/LWAL+CDN/H:1/RES	\$15,761.1M	1,646,100	3.08%	7.12%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$15,055.3M	1,387,401	2.94%	6.00%
RC	CR/LFINF+CDM/H:3/RES	\$14,233.6M	323,279	2.78%	1.40%
	CR/LFINF+CDL/H:3/RES	\$13,833.6M	314,197	2.70%	1.36%
MCF	MCF/LWAL+CDM/H:2/RES	\$12,710.8M	416,090	2.48%	1.80%
	MCF/LWAL+CDL/H:2/RES	\$12,353.7M	404,398	2.41%	1.75%
RC	CR/LFINF+CDM/H:2/RES	\$11,585.4M	404,534	2.26%	1.75%
	CR/LFINF+CDL/H:2/RES	\$11,259.9M	393,161	2.20%	1.70%
MCF	MCF/LWAL+CDM/H:1/RES	\$7,718.3M	426,759	1.51%	1.85%
	MCF/LWAL+CDL/H:1/RES	\$7,501.4M	414,768	1.47%	1.79%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	\$6,887.4M	101,056	1.35%	0.44%
	MUR+ADO/LWAL+CDN/H:1/COM	\$6,707.9M	202,118	1.31%	0.87%
RC	CR/LFINF+CDM/HBET:4-7/RES	\$6,350.7M	14,816	1.24%	0.06%
MUR	MUR+CB/LWAL+CDN/H:2/COM	\$6,217.7M	72,984	1.21%	0.32%
	MUR+CL/LWAL+CDN/H:2/COM	\$6,217.7M	72,984	1.21%	0.32%
RC	CR/LFINF+CDL/HBET:4-7/RES	\$6,172.3M	14,402	1.21%	0.06%
MUR	MUR+CB/LWAL+CDN/H:1/COM	\$6,055.7M	145,974	1.18%	0.63%
	MUR+CL/LWAL+CDN/H:1/COM	\$6,055.7M	145,974	1.18%	0.63%
RC	CR/LDUAL+CDM/H:3/RES	\$5,693.4M	129,312	1.11%	0.56%
	CR/LDUAL+CDL/H:3/RES	\$5,533.4M	125,675	1.08%	0.54%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	\$5,317.4M	26,850	1.04%	0.12%
	MUR+CL/LWAL+CDN/HBET:3-6/RES	\$5,317.4M	26,850	1.04%	0.12%
RC	MUR+CB/LWAL+CDN/H:1/IND	\$5,156.7M	98,494	1.01%	0.43%
	MUR+CL/LWAL+CDN/H:1/IND	\$5,156.7M	98,494	1.01%	0.43%
RC	CR/LDUAL+CDM/H:2/RES	\$4,634.2M	161,813	0.91%	0.70%
	CR/LDUAL+CDL/H:2/RES	\$4,504.0M	157,269	0.88%	0.68%
MUR	MUR+STRUB/LWAL+CDN/H:2/COM	\$4,132.5M	60,637	0.81%	0.26%
	MUR+STRUB/LWAL+CDN/H:1/COM	\$4,024.8M	121,270	0.79%	0.52%
MUR	MUR+STRUB/LWAL+CDN/H:1/IND	\$3,925.6M	93,724	0.77%	0.41%
	MUR+CB/LWAL+CDN/H:2/IND	\$3,750.4M	32,830	0.73%	0.14%
MUR	MUR+CL/LWAL+CDN/H:2/IND	\$3,750.4M	32,830	0.73%	0.14%
MCF	MCF/LWAL+CDM/HBET:3-6/RES	\$3,547.7M	11,854	0.69%	0.05%
	MCF/LWAL+CDL/HBET:3-6/RES	\$3,448.0M	11,522	0.67%	0.05%
MUR	MUR+STRUB/LWAL+CDN/HBET:3-6/RES	\$3,431.6M	21,664	0.67%	0.09%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$3,277.9M	18,264	0.64%	0.08%
S	S+SL/LFM+CDM/H:1/IND	\$2,979.0M	36,109	0.58%	0.16%
	S+SL/LFM+CDL/H:1/IND	\$2,895.3M	35,092	0.57%	0.15%
MUR	MUR+STRUB/LWAL+CDN/H:2/IND	\$2,855.0M	31,243	0.56%	0.14%
RC	CR/LWAL+CDM/H:3/RES	\$2,846.7M	64,657	0.56%	0.28%
	CR/LWAL+CDL/H:3/RES	\$2,766.7M	62,843	0.54%	0.27%
	CR/LDUAL+CDM/HBET:4-7/RES	\$2,540.3M	5,927	0.50%	0.03%
S	S/LFM+CDM/H:1/IND	\$2,505.2M	30,371	0.49%	0.13%
RC	CR/LDUAL+CDL/HBET:4-7/RES	\$2,468.9M	5,761	0.48%	0.02%
S	S/LFM+CDL/H:1/IND	\$2,434.8M	29,517	0.48%	0.13%
RC	CR/LWAL+CDM/H:2/RES	\$2,317.1M	80,905	0.45%	0.35%
	CR/LWAL+CDL/H:2/RES	\$2,252.0M	78,631	0.44%	0.34%
S	S+SL/LFM+CDM/H:2/IND	\$2,166.5M	12,038	0.42%	0.05%
RC	CR/LFINF+CDM/H:3/COM	\$2,118.7M	9,509	0.41%	0.04%
S	S+SL/LFM+CDL/H:2/IND	\$2,105.7M	11,706	0.41%	0.05%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	\$2,059.8M	101,892	0.40%	0.44%
	CR/LFINF+CDL/H:3/COM	\$2,059.2M	9,238	0.40%	0.04%
RC	CR/LFINF+CDM/H:1/RES	\$2,010.0M	118,546	0.39%	0.51%
	CR/LFINF+CDM/HBET:8+/RES	\$1,984.6M	3,704	0.39%	0.02%
	CR/LFINF+CDL/H:1/RES	\$1,953.5M	115,216	0.38%	0.50%
RC	CR/LFINF+CDL/HBET:8+/RES	\$1,928.8M	3,599	0.38%	0.02%
	CR/LFINF+CDM/H:1/IND	\$1,891.9M	20,853	0.37%	0.09%
S	CR/LFINF+CDL/H:1/IND	\$1,838.8M	20,264	0.36%	0.09%
	S/LFM+CDM/H:2/IND	\$1,821.9M	10,121	0.36%	0.04%
W	W/LWAL+CDM/H:2/RES	\$1,819.9M	73,758	0.36%	0.32%
S	S/LFM+CDL/H:2/IND	\$1,770.7M	9,840	0.35%	0.04%
W	W/LWAL+CDL/H:2/RES	\$1,768.7M	71,688	0.35%	0.31%