

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 = "Uzbekistan"
```

Exposure files:
Exposure_Com_Uzbekistan.csv
Exposure_Ind_Uzbekistan.csv
Exposure_Res_Uzbekistan.csv

Sanity checks and formats

Uzbekistan
Exposure/Exposure/Exposure_Com_Uzbekistan.csv
Exposure/Exposure/Exposure_Ind_Uzbekistan.csv
Exposure/Exposure/Exposure_Res_Uzbekistan.csv
Occupants / Dwellings = 5.2
Reference avg household size (2019) = 5.1
Population (exposure / UN_2021) = 1.02
Exposure models OK

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	34.6M	4,150.8K	\$274.5B	84.47%	74.52%
Ind	0.0M	189.7K	\$24.0B	3.86%	6.52%
Com	0.0M	573.7K	\$69.9B	11.68%	18.96%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	696.8M	\$307.8B	142	\$529
Res	560.1M	\$242.3B	135	\$490
Ind	38.7M	\$14.9B	204	\$620
Com	97.9M	\$50.6B	171	\$713

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Fergana Region	\$39.0B	491.9K	3,822.9K	10.59%	10.01%	11.06%
Tashkent Region	\$37.1B	449.9K	2,976.0K	10.08%	9.16%	8.61%
Tashkent	\$36.8B	267.6K	2,697.0K	10.00%	5.45%	7.80%
Qashqadaryo Region	\$35.1B	583.6K	3,336.0K	9.54%	11.87%	9.65%
Samarqand Region	\$35.1B	570.5K	3,946.4K	9.52%	11.61%	11.42%
Andijan Region	\$32.4B	417.3K	3,189.9K	8.81%	8.49%	9.23%
Namangan Region	\$29.7B	369.3K	2,865.0K	8.07%	7.51%	8.29%
Surxondaryo Region	\$25.6B	361.3K	2,678.8K	6.95%	7.35%	7.75%
Bukhara Region	\$25.1B	286.3K	1,945.6K	6.81%	5.83%	5.63%
Republic of Karakalpakstan	\$20.0B	302.7K	1,922.8K	5.42%	6.16%	5.56%
Xorazm Region	\$18.6B	365.0K	1,893.8K	5.06%	7.43%	5.48%
Jizzakh Region	\$12.9B	166.5K	1,410.9K	3.51%	3.39%	4.08%
Navoiy Region	\$11.5B	179.2K	1,013.2K	3.12%	3.65%	2.93%
Sirdaryo Region	\$9.3B	103.0K	860.1K	2.52%	2.10%	2.49%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$121.6B	1,654.3K	13,409.2K	33.01%	33.66%	38.80%
RC	\$71.5B	205.0K	3,155.0K	19.40%	4.17%	9.13%
ADO/E	\$65.9B	1,778.6K	8,784.5K	17.89%	36.19%	25.42%
MIX	\$50.6B	713.6K	5,333.0K	13.75%	14.52%	15.43%
MCF	\$17.7B	60.8K	1,448.4K	4.81%	1.24%	4.19%
W	\$16.9B	216.0K	971.3K	4.58%	4.39%	2.81%
S	\$13.1B	63.7K	485.6K	3.56%	1.30%	1.41%
OT	\$11.1B	222.2K	971.3K	3.00%	4.52%	2.81%

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+CLBRS/LWAL+CDL/HBET:1-2/RES	\$97,267.5M	1,396,444	29.55%	29.71%
MIX	MIX(MUR+W)/LWAL+CDL/HBET:1-2/RES	\$42,828.2M	623,922	13.01%	13.27%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$27,538.5M	809,957	8.37%	17.23%
	EU+ETR/LWAL+CDN/H:1/RES	\$27,538.5M	809,957	8.37%	17.23%
RC	CR+CIP/LWAL+CDL/HBET:3-/COM	\$17,574.6M	25,891	5.34%	0.55%
MCF	MCF/LWAL+CDL/HBET:1-4/RES	\$13,740.4M	35,923	4.17%	0.76%
RC	CR+CIP/LFINF+CDL/HBET:1-2/COM	\$13,181.0M	82,846	4.00%	1.76%
MUR	MUR+CLBRS/LWAL+CDL/H:1/COM	\$11,391.0M	138,068	3.46%	2.94%
	MUR+CLBRS/LWAL+CDL/H:3/RES	\$10,807.5M	99,133	3.28%	2.11%
W	W/LWAL+CDL/HBET:1-2/RES	\$9,057.2M	126,288	2.75%	2.69%
OT	MATO/RES	\$8,050.9M	189,432	2.45%	4.03%
S	S/LFM+CDL/HBET:1-10/RES	\$6,279.7M	18,943	1.91%	0.40%
RC	CR+PC/LWAL+CDL/HBET:5-9/RES	\$6,221.8M	3,458	1.89%	0.07%
	CR+PC/LPB+CDL/HBET:5-9/RES	\$6,221.8M	3,458	1.89%	0.07%
W	W/LWAL+CDL/H:1/COM	\$5,695.5M	69,037	1.73%	1.47%
MIX	MIX(MUR+W)/LWAL+CDL/H:1/COM	\$5,695.5M	69,037	1.73%	1.47%
RC	CR+CIP/LFINF+CDL/H:1/IND	\$5,674.6M	36,124	1.72%	0.77%
	CR+CIP/LFINF+CDL/HBET:1-3/RES	\$5,333.0M	24,691	1.62%	0.53%
ADO/E	EU+ETR/LWAL+CDN/H:1/COM	\$4,556.4M	69,037	1.38%	1.47%
	MUR+ADO/LWAL+CDN/H:1/COM	\$4,556.4M	69,037	1.38%	1.47%

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