

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 = "Ireland"
```

Exposure files:
Exposure_Com_Ireland.csv
Exposure_Ind_Ireland.csv
Exposure_Res_Ireland.csv

Sanity checks and formats

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	4,941.0K	1,854.3K	\$336.6B	96.14%	58.04%
Ind	1,976.4K	28.1K	\$52.1B	1.46%	8.98%
Com	1,976.4K	46.4K	\$191.3B	2.41%	32.98%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	185.8M	\$385.7B	96	\$3,122
Res	147.4M	\$269.2B	80	\$2,283
Ind	9.0M	\$20.8B	319	\$5,815
Com	29.4M	\$95.6B	634	\$6,508

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Dublin	\$177,945.2M	551.7K	2,516.5K	30.69%	28.61%	28.29%
Cork	\$64,675.8M	220.1K	1,013.9K	11.15%	11.41%	11.40%
Galway	\$30,953.4M	101.7K	482.0K	5.34%	5.27%	5.42%
Kildare	\$26,458.1M	79.5K	415.6K	4.56%	4.12%	4.67%
Limerick	\$26,264.3M	86.7K	364.0K	4.53%	4.49%	4.09%
Meath	\$22,644.6M	81.7K	364.3K	3.90%	4.23%	4.10%
Kerry	\$19,618.0M	64.6K	275.9K	3.38%	3.35%	3.10%
Tipperary	\$19,608.8M	70.6K	298.0K	3.38%	3.66%	3.35%
Donegal	\$18,064.4M	67.6K	297.3K	3.12%	3.50%	3.34%
Wicklow	\$16,410.8M	54.9K	266.0K	2.83%	2.84%	2.99%
Mayo	\$16,260.5M	58.2K	243.7K	2.80%	3.02%	2.74%
Wexford	\$15,490.1M	52.2K	279.6K	2.67%	2.71%	3.14%
Clare	\$15,484.8M	49.1K	221.9K	2.67%	2.55%	2.50%
Waterford	\$14,987.6M	49.3K	217.0K	2.58%	2.56%	2.44%
Kilkenny	\$13,696.0M	45.1K	185.3K	2.36%	2.34%	2.08%
Louth	\$12,264.7M	40.8K	240.7K	2.11%	2.11%	2.71%
Westmeath	\$9,652.8M	32.6K	165.8K	1.66%	1.69%	1.86%
Offaly	\$8,709.4M	30.7K	145.6K	1.50%	1.59%	1.64%
Laoighis	\$8,199.3M	30.3K	158.2K	1.41%	1.57%	1.78%
Sligo	\$7,685.5M	28.7K	122.4K	1.33%	1.49%	1.38%
Cavan	\$7,481.2M	28.2K	142.3K	1.29%	1.46%	1.60%
Roscommon	\$7,472.1M	30.0K	120.5K	1.29%	1.56%	1.36%
Monaghan	\$7,017.5M	27.4K	114.7K	1.21%	1.42%	1.29%
Carlow	\$5,560.5M	19.5K	106.3K	0.96%	1.01%	1.20%
Longford	\$4,132.5M	15.6K	76.3K	0.71%	0.81%	0.86%
Leitrim	\$3,163.0M	12.2K	59.8K	0.55%	0.63%	0.67%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$271.3B	1,274.5K	3,940.6K	46.78%	66.08%	44.31%
RC	\$240.2B	496.3K	3,495.1K	41.42%	25.73%	39.30%
W	\$38.8B	143.6K	433.3K	6.69%	7.44%	4.87%
S	\$29.6B	14.5K	1,024.8K	5.11%	0.75%	11.52%

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+CL/LWAL+CDN/HBET:1-4/RES	\$158.9B	1,002,020	30.74%
RC	CR/LFINF+CDN/HBET:4-10/RES	\$110.8B	468,579	21.43%
	CR/LFINF+CDL/HBET:3-5/COM	\$56.3B	6,280	10.88%
MUR	MUR+ST/LWAL+CDN/HBET:1-4/RES	\$36.9B	242,473	7.14%
	MUR+CL/LWAL+CDN/H:2/COM	\$35.1B	11,583	6.79%
W	W/LPB+CDL/HBET:1-3/RES	\$29.5B	140,028	5.71%
MUR	MUR+CL/LWAL+CDN/H:1/COM	\$28.6B	13,468	5.52%
RC	CR/LWAL+CDL/HBET:3-5/COM	\$24.4B	2,497	4.72%
	CR/LFINF+CDL/H:1/COM	\$13.0B	3,740	2.51%
S	S+SL/LFM+CDN/H:1/IND	\$12.8B	7,025	2.47%
RC	CR+PC/LFM+CDN/H:1/IND	\$10.7B	5,620	2.07%

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