COUNTRY EXPOSURE MODEL

Review main statistic of a exposure model and create summaries for a given Country.

```
# Parameters
country = "Zambia"
```

```
Exposure files:
  Exposure_Com_Zambia.csv
  Exposure_Ind_Zambia.csv
  Exposure_Res_Zambia.csv
```

Sanity checks and formats

```
Zambia
  Exposure/Exposure/Exposure_Com_Zambia.csv
  Exposure/Exposure/Exposure_Ind_Zambia.csv
  Exposure/Exposure/Exposure_Res_Zambia.csv
  Occupants / Dwellings = 5.0
  Reference avg household size (2019) = 5.06
  Population (exposure / UN_2021) = 0.97
  Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	18.3M	3,471.7K	$90,611.7M	97.19%	90.15%
Ind	0.0M	18.7K	$2,347.9M	0.52%	2.34%
Com	0.0M	81.5K	$7,554.8M	2.28%	7.52%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	305.6M	$84,462.0M	86	$329
Res	284.9M	$77,284.9M	82	$318
Ind	5.3M	$1,542.1M	285	$440
Com	15.3M	$5,635.1M	188	$493

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Lusaka	$16.7B	592.2K	3,033.3K	16.58%	16.58%	16.58%
Copperbelt	$13.8B	489.2K	2,505.6K	13.70%	13.70%	13.70%
Central	$12.0B	427.1K	2,187.8K	11.96%	11.96%	11.96%
Eastern	$11.7B	417.4K	2,137.7K	11.68%	11.68%	11.68%
Southern	$11.6B	412.5K	2,112.7K	11.55%	11.55%	11.55%
Luapula	$9.1B	324.4K	1,661.5K	9.08%	9.08%	9.08%
Northern	$8.5B	300.7K	1,540.3K	8.42%	8.42%	8.42%
Western	$5.9B	209.6K	1,073.7K	5.87%	5.87%	5.87%
North Western	$5.8B	204.6K	1,047.7K	5.73%	5.73%	5.73%
Muchinga	$5.5B	194.2K	994.9K	5.44%	5.44%	5.44%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$49,865.5M	1,670,337	8,389.8K	49.61%	46.76%	45.86%
ADO/E	$31,688.1M	1,406,817	7,242.0K	31.53%	39.39%	39.58%
RC	$8,241.4M	116,196	742.4K	8.20%	3.25%	4.06%
MCF	$5,881.6M	125,386	645.6K	5.85%	3.51%	3.53%
W	$3,892.1M	224,512	1,155.3K	3.87%	6.29%	6.31%
S	$774.6M	4,692	0.0K	0.77%	0.13%	0.00%
OT	$171.1M	23,945	120.2K	0.17%	0.67%	0.66%

Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST_USD`

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	$13,805.1M	476,520	15.34%	14.15%
MUR	MUR+CB/LWAL+CDN/H:2/RES	$13,117.4M	407,505	14.57%	12.10%
MUR	MUR+CL/LWAL+CDN/H:2/RES	$12,318.7M	382,693	13.69%	11.37%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$8,382.7M	488,738	9.31%	14.52%
MUR	MUR+CB/LWAL+CDN/H:1/RES	$7,965.1M	417,952	8.85%	12.41%
MUR	MUR+CL/LWAL+CDN/H:1/RES	$7,480.2M	392,503	8.31%	11.66%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	$4,932.2M	345,078	5.48%	10.25%
RC	CR/LFINF+CDL/H:3/RES	$2,762.2M	39,535	3.07%	1.17%
RC	CR/LFINF+CDL/H:2/RES	$2,248.3M	49,473	2.50%	1.47%
W	W+WWD/LWAL+CDN/H:1/RES	$2,227.0M	155,813	2.47%	4.63%
MCF	MCF+CB/LWAL+CDL/H:2/RES	$2,198.8M	45,541	2.44%	1.35%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	$1,825.1M	6,430	2.03%	0.19%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	$1,734.2M	5,500	1.93%	0.16%
MUR	MUR+CL/LWAL+CDN/HBET:3-6/RES	$1,628.6M	5,166	1.81%	0.15%
W	W+WWD/LWAL+CDN/H:2/RES	$1,571.8M	65,108	1.75%	1.93%
MCF	MCF+CB/LWAL+CDL/H:1/RES	$1,335.2M	46,707	1.48%	1.39%
RC	CR/LFINF+CDL/HBET:4-7/RES	$1,232.4M	1,813	1.37%	0.05%
MUR	MUR+CL/LWAL+CDN/H:2/COM	$1,093.8M	8,157	1.22%	0.24%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	$1,090.6M	10,172	1.21%	0.30%
MUR	MUR+CL/LWAL+CDN/H:1/COM	$1,065.3M	16,322	1.18%	0.48%