

Average Rent as a Percentage of Purchase Price



Asking, “What is the average rent as a percentage (%) of the purchase price?” is the same as asking, “What is the nominal return on Elsie’s if none were destroyed, assuming no appreciation or depreciation?”

Nominal [Elsies](#) plus destroyed Elsie’s match the total purchase price of all properties purchased into a [commons trust](#). This identity must exist until [federation](#).

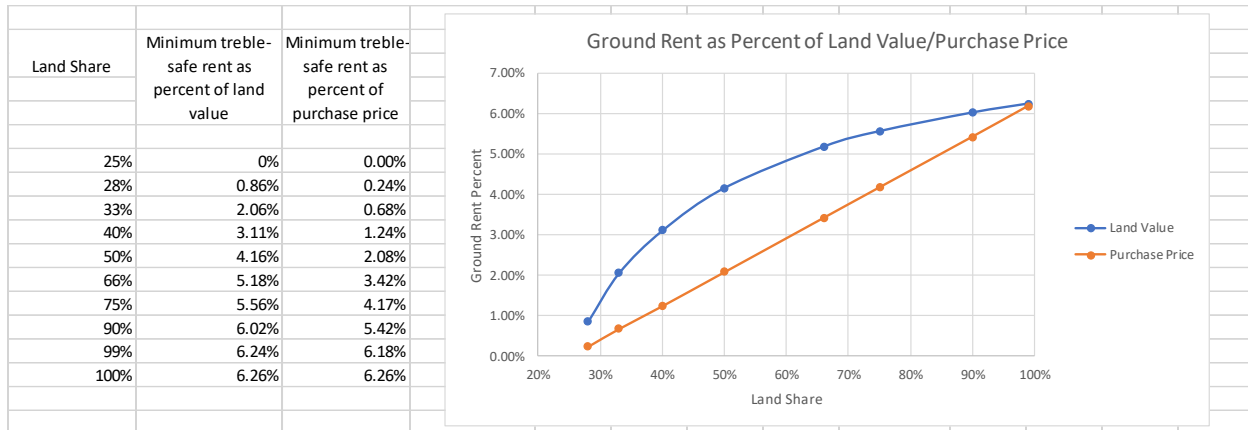
In the last module, we were introduced to the treble curve. Although there can be many treble curves based on the values of different parameters, such as loan term length, mortgage rate, and closing costs, the expected values of these parameters determine a treble curve that can be used for analysis.

Recall that the treble curve maps [land share](#) to [ground rent](#) as a % of land value. How can a treble curve be converted into something that maps land share to ground rent as a % of the purchase price (the price paid by the [ABC](#) to purchase the land into the [ABC Commons Trust](#))?

For vacant land, ground rent as a % of the land value and ground rent as a % of the purchase price are the same. That is because the land share is 100%.

If the land share were 90%, then ground rent as a percentage of purchase price would be 90% of ground rent as a percentage of land value. Ground rent as a percentage of land value must be multiplied by the land share to give ground rent as a percentage of the purchase price.

In the data below, the treble curve mapping land share to ground rent as a percentage of land value is placed side by side with a mapping of land share to ground rent as a percentage of the purchase price. The result might surprise you.



That ground rent as a % of the purchase price is linear with respect to land share is both astounding and expected. It is fantastic because computations could only be done by separating the land and the structure, and it is expected because it demonstrates that rent is only on the land share of a property.

This line is called the [treble-danger line](#) because a ground rent below the line makes the treble more economical than the purchase of an identical property on private land next door.

In this module, we are concerned only with the linear nature of the relationship, allowing for an actual equation relating ground rent as a % of the purchase price to land share, using the familiar formula from high school algebra $y = mx + b$. For the slope, $m = (y_2 - y_1) / (x_2 - x_1)$.

$$y_1 = 0.24\%, y_2 = 6.26\% \quad x_1 = 28\%, x_2 = 1 \rightarrow m = 6.02\% / (1 - 28\%) = .0836$$

$$\text{Rent as \% purchase price} = .0836 * \text{land share} - X. \text{ Substitute } 50\% \text{ LS to solve } .0208 = .0836 * .5 - X \rightarrow .0208 = .0418 - X \rightarrow$$

$$X = .0418 - .0208 = .021 \text{ (= -b in the formula above).}$$

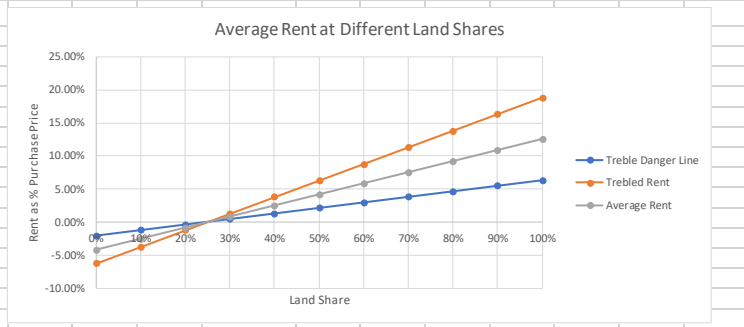
Treble danger equal or below $.0836 \times \text{land share} - .021$

The maximum treble-danger rent, which is the rent for vacant land as a percentage of the purchase price, is $0.0836 - 0.021 = 6.26\%$. That agrees with the spreadsheet.

The meaning of the numbers is not essential. Very importantly, we now have the tool to compute the average rent for any land share.

Minimum Treble Safe Rent = 0.0836 x Land Share - .021

Land Share	Treble Danger	Trebled Rent	Average Rent
0%	-2.10%	-6.30%	-4.20%
10%	-1.26%	-3.79%	-2.53%
20%	-0.43%	-1.28%	-0.86%
30%	0.41%	1.22%	0.82%
40%	1.24%	3.73%	2.49%
50%	2.08%	6.24%	4.16%
60%	2.92%	8.75%	5.83%
70%	3.75%	11.26%	7.50%
80%	4.59%	13.76%	9.18%
90%	5.42%	16.27%	10.85%
100%	6.26%	18.78%	12.52%



The gold treble line is three times the blue treble danger line as a percentage of the purchase price. The treble danger line is the minimum ground rent at which purchasing an identical property on private land makes more financial sense.

Rents for a given land share become uniformly distributed between the blue and gold lines over time. Rent cannot fall beneath the blue line without being trebled, and it is doubtful to be frozen above the gold line.

An average rent line can be drawn halfway between the blue and gold lines. Rents can never drop below zero, so everything below a land share of 27% (about half of all U.S. residences) can be ignored.

Keep in mind that the minimum rent applies to well-maintained homes. If a home has half the average value in an area, then the land share is doubled. A slum on rent-free 25% land-share land would need to pay a rent near 5% purchase price to avoid a treble.

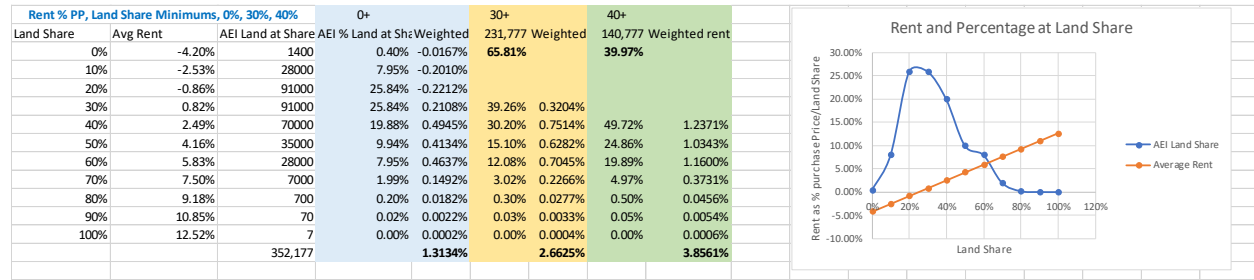
Incorrectly assuming a uniform distribution of land shares among the purchased properties, the average rent is the area under the middle rent line or the area of the triangle ($\frac{1}{2} \times \text{base} \times \text{height}$).

With a base of $1 - 28\% = 72\%$ and a height of 12.52%, the area of the triangle = $\frac{1}{2} \times 72\% \times 12.52\% = 4.5\%$. This would be a fantastic average rent as a % of the purchase price, corresponding to well over the 5% share of land price that rent should ultimately represent.

Unfortunately, residential properties do not have a uniform distribution of land shares. Most of them are clustered between 30% and 40% land share, where the average rent goes from 0.82% purchase price to 2.49% purchase price. At the median 33% land share, the average rent would be $(.0846 \times 33.33 - .021) \times 2 = 1.44\%$ (where 2 is the multiplier for the average rent line, halfway between 1- treble danger and 3 - treble).

Data from the American Enterprise Institute provides a histogram showing the relative number of properties at each land share. By multiplying the histogram with the average rent line at each data point and adding up the various weighted rents, the actual expected total rent as a % of the purchase price can be calculated.

The average ground rent for homes selected randomly anywhere on the land share spectrum is 1.31%. This is not acceptable for efficient ABC operations.



ABC’s mission is to allow every landowner to sell their land into the commons trust. However, they must prioritize resources, particularly scarce U.S. dollars, and will favor high land share areas in the first few years. The same applies to computing and staffing resources, even when the Elsie is used for the purchase. In this version (7.0) of AFFEERCE, the problem is solved in direct mode by awarding counties, the ABC, and VTLM Elsies from the land fund over and above the minted Elsies, equal to the structure value. These Elsies are awarded as U.S. dollars with a delayed disposition in the 99.16% inventory.

In auction mode, however (for-sale properties), we concentrate on 39.97% of all residential homes with a land share of 40% or more (which includes almost all residential Colorado and California); we **will have an average rent of 3.86%**, 30% of which is higher than property taxes in both California and Colorado! This creates a natural demand for the Elsie from rent and treble arbitrage.

However, if there is a high demand for the Elsie from other sources, low land-share properties can be purchased for sale or from the direct mode waiting list. Instead of receiving rent from these properties, the counties, ABC, and VTLM will receive, in place of rent, the auction proceeds as a high percentage of the purchase price for property-tax-free and rent-free high structure-share properties or excess Elsies in the land fund equal to the structure value. The VTLM sets requirements based on [monetary policy](#).

Viral communities have been divorced from the ABC business plan since version 6.0. They are encouraged as private enterprises. Low-land-share counties might consider starting a viral community enterprise. The qualities that make a property a poor candidate for ABC U.S. dollar purchase make it a fantastic candidate for a viral community.

