In our model, if a retailer's funding falls below zero, it is out of the game. So naturally, if the store's rent is higher than it's income, it will meet this miserable fate. Below we will see under what condition the expected outcome is big box stores driving out mom and pops. And this condition will be met when the big boxes income exceeds it's rent, and when the mom and pops have a net loss every time they pay rent. In symbols, this occurs when

$$I_{BB} > R > I_{MP}$$

First things first, let us identify the key players in our economic system.
$N =$ number of consumers
$m =$ salary of consumers
$\#g =$ number of purchasable goods
$p =$ consumer preference for mom and pop stores
For I_{MP}, a customer has the following probability of visiting its store. $\frac{p}{\#g}$ The reason this is so is because each customer has the preference p of visiting any mere mom and pop, no matter the product they sell. But because this ready-to-shop-at-a-mom-and-pop customer might go to any one of $\#g$ stores, and so this probability must be divided by $\#g$. And so the expected income gained from this customer is $m * \frac{p}{\#g}$. And so the total income expected over all N customers is

$$I_{mp} = N * m * \frac{p}{\#g}$$

Since big box stores sell all the goods, their income's equation is simpler to digest:

$$[I_{bb} = N * m * (1 - p)$$

So now we pursue our question, under what conditions does

$$I_{BB} > R > I_{MP}$$

hold?

Expanding our income equations, we can manipulate things into a useful interpretation. So, in a few more symbols the condition we seek to clarify is this:

$$N * m * (1 - p) > R > N * m * \frac{p}{\#g}$$

The common terms N and m we divide out.

$$(1 - p) > \frac{R}{N * m} > \frac{p}{\#g}$$

And since p ranges from 1 to 0, we can set bounds on our inequality.

$$1 \geq (1 - p) > \frac{R}{N * m} > \frac{p}{\#g} \geq 0$$

Clearly $\frac{R}{N*m}$ can exceed 1, but! if it does so, then the rent is so high that even if all the people gave all their money to one store, it would have a net loss of income. So we are safe with the above bounds.

Further, to make our inequality neater, we'll call $\frac{R}{N*m}$ S for "survivability threshold." Whatever store is represented in the inequality, if it is to the right of S, it will suffer, on the average, a net loss of income.

Now we may proceed to several interesting aspects of our inequality.

(1) If $1-p > \frac{p}{\#g}$, then big boxes do better than mom and pops regardless of population size, rent, and income per visitor.

(2) The key factor in consumers having high preference for mom and pops, but yet mom and pops failing is the number of goods sold. Let's take two examples to illustrate this.: a reasonable estimate of a mom and pop friendly city is their having a preference such that they spend 75% of their time shopping there. However, if there are five different goods each store specializes in, while the big box sells them all, our inequality becomes:

$$1-p > \frac{p}{\#g}$$

which in this case is

$$0.25 > 0.15$$

leaving plenty of space for S to sneak in there and crush the mom and pop stores.

But even on an extreme case, let's have a population that vastly prefers shopping locally and will go to the big box stores only when absolutely necessary. So let's have $p = 99\%$. If there are a hundred good, though, the big box wins again.

$$1-p > \frac{p}{\#g}$$

becomes

$$.01 > 0.0099$$

which means that big boxes still do better on average than mom and pops, and even here, there is an interval in which S can come in and ruin the mom and pops, leaving the big boxes with a monopoly.