Homework 3: Aggregte Demand, Aggregate Supply and General Equilibrium

Microeconomics - ECON 401A

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1 Dynamics of a Demand Shock

Consider the market for a single good. Market demand is $X(p) = 1500 - 50p$, where p is the price of the good. There are many potential firms, each with cost function $c(q_k) = 100 + q_k^2/4$.

> (a) Calculate the long-run equilibrium, in which firms are free to enter and exit. How much does each firm produce (q^*)? What is the equilibrium price (p^*)? How many firms enter (K^*)?

Each firm k will produce in their efficient point. This means:

$$MCG_k(q_k) = AC_k(q_k)$$

From our cost function $c_k(q_k)$:

$$\begin{aligned} MCG_k(q_k) &= \frac{d}{dq_k} c_k(q_k) = \frac{q_k}{2} \\ AC_k(q_k) &= \frac{c_k(q_k)}{q_k} = \frac{100}{q_k} + \frac{q_k}{4} \end{aligned}$$

Solving for the firm k:

$$
\begin{aligned}
MCG_k(q_k) &= AC_k(q_k) \\
\frac{q_k}{2} &= \frac{100}{q_k} + \frac{q_k}{4} \\
\frac{q_k^2}{4} &= 100 \\
q_k &= 20
\end{aligned}
$$

So each firm k is producing $q^* = 20$.

We know that the supply function for the firm k is $p = MCG_k(q_k)$. The price p is:

$$
\begin{aligned}
p &= MCG_k(q_k) = MCG_k(20) \\
p &= \frac{q_k}{2} = \frac{20}{2} = 10
\end{aligned}
$$

The equilibrium price is $p^* = 10$.

At this price, the demand is:

$$
\begin{aligned}
X(p) &= 1500 - 50p \\
X(10) &= 1500 - 50(10) \\
X(10) &= 1000
\end{aligned}
$$

So the demand is $X(10) = 1000$.

(b) Suppose demand rises. New demand is given by $\hat{X}(p) = 1800 - 50p$. Suppose demand rises. New demand is given by $\hat{X}(p) = 1800 - 50p$.

In the very-short run, each firms' output is fixed. What is equilibrium price(p_v)? How much profit does each firm make (π_v)?

In the very short-run there are only $K = 50$ producing $q_k = 20$ goods each, so the aggregate supply is $Q = 1000$. At that level of aggregated supply, and given the new aggregated demand:

$$
\hat{X}(p) = 1800 - 50p = 1000
$$

The new equilibrium price is $p_v = 16$

At that price, the profit of each firm is:

$$
\pi_v = 16(20) - \left(100 + \frac{20^2}{4}\right)
$$

So each firm is making a profit of $\pi_k = 120$. This level of profit is not sustainable because, as time passes, firms have incentives to produce one extra unit and take advantage of that price.

(c) In the short run, each firm can adjust its output to maximize its profits, but there is no entry or exit. What is equilibrium price (p_s)? How much does each firm produce (q_s)? How much profit does each firm make (π_s)?

The number of producers remains the same, so $K = 50$. Now each firm wants to maximize their profit.

$$\pi_k(q_k) = pq_k - c_k(q_k)$$

In order to maximize:

$$\begin{aligned} \frac{d}{dq_k}\pi_k(q_k) &= 0 \implies p - \frac{q_k}{2} = 0 \\ q_k &= 2p \end{aligned}$$

So the optimal aggregated supply is:

$$Q(p) = 50(2p) = 100p$$

In equilibrium $\hat{X}(p) = Q(p)$:

$$1800 - 50p = 100p \implies p_s = 12$$

At this price, the aggregated demand is:

$$\hat{X}(p_s) = 1800 - 50p_s = 1800 - 50(12) = 1200$$

So each firm produces:

$$q_s = \frac{1200}{50} = 24$$

And makes a profit of:

$$\pi_s = (12)(24) - \left(100 - \frac{24^2}{4}\right) = 44$$

As a summary, in the short-run, the new equilibrium is:

$$\begin{aligned} K &= 50 \\ q_s &= 24 \\ p_s &= 12 \\ \pi_s &= 44 \end{aligned}$$

(d) In the long run, there is free entry and exit. How much does each firm produce (q_e)? What is equilibrium price (p_e)? How many firms enter (K_e)?

In the long run, assuming that each firm has the same cost function, each firm will produce $q_c = 20$ at a price $p_c = 10$, which is the efficient point identified prior to the expansion of demand.

To find the quantity of firms producing:

$$K_c = \frac{\hat{X}(p_c)}{q_c} = \frac{1800 - 50(10)}{20} = 65$$

In the long-run there will be $K_c = 65$ firms producing.

2 General Equilibrium

There are two goods and J agents, $j \in \{1, \ldots, J\}$. Each agent has identical utility $u(x_1^j, x_2^j) = \sqrt{x_1^j} + \sqrt{x_2^j}$. Agent j is endowed with (ω_1^j, ω_2^j). We normalize the price of good 2, so the prices of the two goods are $(p_1, p_2) = (p, 1)$. Denote aggregate endowments by $\omega_1 = \sum_j \omega_1^j$ and $\omega_2 = \sum_j \omega_2^j$.

(a) What is agent j's demand, $x_1^j(p, \omega_1^j, \omega_2^j)$ and $x_2^j(p, \omega_1^j, \omega_2^j)$?

Solving the maximization problem:

$$\begin{aligned}
\max_{x_1^j, x_2^j} U(x_1^j, x_2^j) &= \sqrt{x_1^J} + \sqrt{x_2^J} \\
s.t. \quad m^j &= p(w_1^j) + w_2^j \\
p(w_1^j) + w_2^j &> p(x_1^j) + x_2^j
\end{aligned}$$

Calculating the first order conditions:

$$\begin{aligned}
\frac{\partial \mathcal{L}}{\partial x_1^J} &= \frac{1}{2\sqrt{X_1^J}} - p = 0 \\
\frac{\partial \mathcal{L}}{\partial x_2^J} &= \frac{1}{2\sqrt{X_2^J}} - \ = 0 \\
\frac{\partial \mathcal{L}}{\partial \lambda} &= p(w_1^j) + w_2^j - p(x_1^j) - x_2^j = 0 \\
x_2^j &= p(w_1^j) + w_2^j - p(x_1^j)
\end{aligned}$$

Solving for λ:

$$\begin{aligned}
\frac{1}{2\sqrt{X_2^J}} &= \frac{1}{2p\sqrt{X_1^J}} \\
\sqrt{X_1^J} &= \frac{\sqrt{X_2^J}}{p} \\
\sqrt{X_1^J} &= (\frac{\sqrt{X_2^J}}{p})^2 \\
x_1^j &= \frac{X_2^J}{p^2} \\
x_1^j * p^2 &= x_2^j
\end{aligned}$$

Substituting in the budget constraint:

$$\begin{aligned}
x_2^j &= p(w_1^j) + w_2^j - p(\frac{X_2^J}{p^2}) \\
x_2^j &= p(w_1^j) + w_2^j - (\frac{X_2^J}{p}) \\
x_2^j + (\frac{X_2^J}{p}) &= p(w_1^j) + w_2^j \\
x_2^j &= \frac{p(w_1^j) + w_2^j}{1 + \frac{1}{p}} \\
x_2^j &= \frac{p(w_1^j) + w_2^j}{1 + \frac{1}{p}} \\
x_2^j &= \frac{p(w_1^j) + w_2^j}{\frac{p}{p} + \frac{1}{p}} \\
x_2^j &= \frac{p(w_1^j) + w_2^j}{\frac{p+1}{p}} \\
x_2^j &= \frac{p(p(w_1^j) + w_2^j)}{p+1} = \frac{p^2(p(w_1^j) + w_2^j)}{p(p+1)} \\
x_1^j &= \frac{(p(w_1^j) + w_2^j)}{p(p+1)}
\end{aligned}$$

The j's demand for good 1 is:

$$x_1^j(p, \omega_1^j, \omega_2^j) = \frac{(p(w_1^j) + w_2^j)}{p(p+1)}$$

and for good 2 is:

$$x_2^j(p, \omega_1^j, \omega_2^j) = \frac{p^2(p(w_1^j) + w_2^j)}{p(p+1)}$$

(b) Show that agent j's indirect utility is $v(p, x_1^j, x_2^j) = \left[\frac{1+p}{p}(\omega_1^j + \omega_2^j)\right]^{1/2}$.

$$
\begin{aligned}
v(X_1^j, X_2^j) &= \sqrt{\frac{(p(w_1^j) + w_2^j)}{p(p+1)}} + \sqrt{\frac{p^2(p(w_1^j) + w_2^j)}{p(p+1)}} \\
v(X_1^j, X_2^j) &= \sqrt{\frac{(p(w_1^j) + w_2^j)}{p(p+1)}} + p\sqrt{\frac{(p(w_1^j) + w_2^j)}{p(p+1)}} \\
v(X_1^j, X_2^j) &= (1+p)\sqrt{\frac{(p(w_1^j) + w_2^j)}{p(p+1)}} \\
v(X_1^j, X_2^j) &= \sqrt{(1+p)^2\frac{(p(w_1^j) + w_2^j)}{p(p+1)}}
\end{aligned}
$$

$$
v(X_1^j, X_2^j) = \sqrt{\frac{1+p}{p}(pw_1^j + w_2^j)}
$$

(c) Equating aggregate demand and the aggregate endowments, solve for equilibrium prices.

$$
\begin{aligned}
X_1 &= \sum_j \frac{p(w_1^j) + w_2^j}{p(p+1)} = \sum_j w_1^j \\
X_1 &= \sum_j \frac{p(w_1^j) + w_2^j}{p(p+1)} = w_1 \\
X_1 &= \frac{p\sum_j (w_1^j) + \sum_j w_2^j}{p(p+1)} = w_1
\end{aligned}
$$

$$
\begin{aligned}
X_1 &= w_1 \\
X_2 &= w_2
\end{aligned}
$$

$$
\begin{aligned}
\frac{p(w_1) + w_2}{p(p+1)} &= w_1 \\
\frac{p(w_1) + w_2}{w_1} &= p(p+1) \\
p + \frac{w_2}{w_1} &= p^2 + p \\
\frac{w_2}{w_1} &= p^2
\end{aligned}
$$

$$\sqrt{\frac{w_2}{w_1}} = p$$

(d) Show that agent j is a net seller of good 1 if

$$\frac{\omega_1^j}{\omega_2^j} > \frac{\omega_1}{\omega_2}.$$

$$\begin{aligned}
\frac{w_2^j}{w_1^j} &< \frac{w_2}{w_1} \\
\frac{w_2^j}{w_1^j} &< p^2 \\
x_1^j &= \frac{(p(w_1^j) + w_2^j)}{p(p+1)} \\
x_1^j p(p+1) &= (p(w_1^j) + w_2^j) \\
x_1^j (p^2 + p) &= (p(w_1^j) + w_2^j) \\
\frac{x_1^j (p^2 + p)}{w_1^j} - p &= \frac{w_2^j}{w_1^j}
\end{aligned}$$

From that results then:

$$\begin{aligned}
\frac{x_1^j (p^2 + p)}{w_1^j} - p &< p^2 \\
\frac{x_1^j (p+1)}{w_1^j} - 1 &< p \\
\frac{x_1^j (p+1)}{w_1^j} &< p+1 \\
(x_1^j)(p+1) &< (p+1)(w_1^j) \\
x_1^j &< w_1^j
\end{aligned}$$

Therefore, if $\frac{\omega_1^j}{\omega_2^j} > \frac{\omega_1}{\omega_2}$, then $x_1^j < w_1^j$, meaning that the optimal consumption of good 1 for agent j is lower than the initial endowment, so agent j is a net seller of good 1.

(e) Suppose an agent k finds a small amount of good 2, so their endowment ω_2^k rises a little. How does this impact the price p? Show that agent j's utility increases if she is a net seller of good 1.

If w_2^k grows, $w_2 = \sum_j w_2^j$ will grow, and consequently, the price $(\sqrt{\frac{w_2}{w_1}} = p)$ will increase.

When agent j is a net seller, it implies an increase in w_1^j compared to the case when she is not a net seller, therefore her utility $(v(X_1^j, X_2^j) = \sqrt{\frac{1+p}{p}(pw_1^j + w_2^j)})$ will increase.

3 Housing Prices, in Theory

A unit mass of people indexed by $v \sim U[0,1]$ must choose to live in either Los Angeles or Kansas City. Each city has housing stock 3/4, so there is enough housing between the two cities but not in any one city. House prices are determined by a competitive market of landlords; they have no costs if they rent out their house.

Agents have utilities $u_{LA} = b + v - p_{LA}$ and $u_{KC} = b - p_{KC}$ from living in the two cities, where p_{LA} and p_{KC} are the prices of renting in the two cities, $v \sim U[0,1]$ indicates how much the agent likes California weather, and b is the benefit of having a house (we assume this is positive, so no-one chooses to be homeless).

(a) Suppose $p_{LA} = p_{KC} = 0$. Is this an equilibrium? Is there excess demand/supply in either market?

When $p_{LA} = p_{KC} = 0$:

$$\begin{aligned} \mathbb{E}[u_{LA}] &= 0.5 + b \\ \mathbb{E}[u_{KC}] &= b \\ \mathbb{E}[u_{LA}] &> \mathbb{E}[u_{KC}] \end{aligned}$$

Furthermore:

$$Pr(v = 0) \quad = \quad 0$$

Because v is a continuous random variable.

Therefore, for every agent, it is preferable to live in Los Angeles, as it is highly unlikely that they have a null preference for the climate of Los Angeles.

In this case, the excess demand for housing in Los Angeles is 1/4, being this the proportion of the population that must live in Kansas City.

This is not an equilibrium because Los Angeles landlords can raise the price of their properties to a point where $\mathbb{E}[u_{LA}] = \mathbb{E}[u_{KC}]$ and thus maximize their profits.

The demand for housing in Los Angeles depends on the proportion of agents who prefer to live there rather than in KC, given the price p_{LA}. This proportion is given by:

$$\begin{aligned} Pr(u_{LA} &> u_{KC}) \\ Pr(v + b - p_{LA} &> b - p_{KC}) \\ Pr(v &> p_{LA} - p_{KC}) \end{aligned}$$

$$D_{LA} = Pr(v > p_{LA} - p_{KC}) \tag{1}$$

$$D_{LA} = \begin{cases} 0, & p_{LA} - p_{KC} \geq 1 \\ 1 - (p_{LA} - p_{KC}), & 0 < p_{LA} - p_{KC} < 1 \\ 1, & p_{LA} - p_{KC} \leq 0 \end{cases} \tag{2}$$

And the demand for housing in Kansas City is:

$$D_{KC} = \begin{cases} 0, & p_{LA} - p_{KC} \leq 0 \\ (p_{LA} - p_{KC}), & 0 < p_{LA} - p_{KC} < 1 \\ 1, & p_{LA} - p_{KC} \geq 1 \end{cases} \tag{3}$$

The supply function for housing in Los Angeles and Kansas City is:

$$S_{LA}(p_{LA}) = 3/4 \tag{4}$$
$$S_{KC}(p_{KC}) = 3/4 \tag{5}$$

(b) What are the equilibrium prices p_{LA}, p_{KC}?

Assuming that landlords in Los Angeles do not know the preferences of the agents (since v is a random variable), their best strategy is to choose a price such that:

$$\begin{aligned} \mathbb{E}[u_{LA}] &= \mathbb{E}[u_{KC}] \\ 0.5 + b - p_{LA} &= b - p_{KC} \end{aligned}$$

$$p_{LA} = 0.5 + p_{KC} \tag{6}$$

In this case, the exercise of housing choice is equivalent to a Monte Carlo simulation where the proportion of agents living in LA will be the same as those living in KC, and there will be no incentives for LA landlords to raise prices.

Since the marginal cost of renting is zero, and given that landlords in Los Angeles compete with those in Kansas City, the minimum possible price for those in Kansas City is $p_{KC} = 0$, making them indifferent between renting or not.

The equilibrium prices will be:

$$\begin{aligned} p_{LA} &= 0.5 \\ p_{KC} &= 0 \end{aligned}$$

Thus, the expected proportion of agents living in Los Angeles and Kansas City will be 50% for each city. Additionally, the landlords in Kansas City will be indifferent between renting or not.

The expected proportion of agents demanding housing in LA and KC is:

$$\mathbb{E}[D_{LA}] = \mathbb{E}[D_{KC}] = 0.5$$

The expected occupancy in LA and KC is 66.67% (with $\frac{3}{4}$ being 100%), which means that this is the expected proportion of landlords who will be generating profits from renting their properties in LA. From the total housing supply (1.5 adding LA and KC), 25% is expected to generate profits (3/8 in LA of the total offered equivalent to 1.5).

The expected surplus of the producers is:

$$
\begin{aligned}
\mathbb{E}[PS] &= \mathbb{E}[PS_{LA}] + \mathbb{E}[PS_{KC}] \\
\mathbb{E}[PS] &= (1/2 * 0.5 + 1/4 * 0) + (1/4 * 0 + 1/2 * 0.5) \\
\mathbb{E}[PS] &= 0.50
\end{aligned}
$$

From the demand curves, it is possible to calculate the consumer surplus in each city:

$$
\begin{aligned}
CS_{LA} &= \int_{0.5}^{1} D_{LA}(0.5)dx \\
CS_{LA} &= \int_{0.5}^{1} (1 - 0.5)dx \\
CS_{LA} &= 0.25
\end{aligned}
$$

Similarly, the consumer surplus in Kansas City is:

$$
\begin{aligned}
CS_{KC} &= \int_{0.5}^{1} D_{KC}(0.5)dx \\
CS_{KC} &= \int_{0.5}^{1} 0.5dx \\
CS_{KC} &= 0.25
\end{aligned}
$$

Therefore, the total welfare is:

$$
\begin{aligned}
SW &= CS_{LA} + CS_{KC} + \mathbb{E}[PS] \\
SW &= 0.25 + 0.25 + 0.50 \\
SW &= 1
\end{aligned}
$$

(c) What happens to house prices in LA and KC if we build a few more houses in LA or KC?

Since the addition of housing in either city does not change the cost structure for renting and the preference of agents, equation 6 remains valid, and therefore, the prices will be the same as in the previous clause.

(d) Suppose we can build new housing at constant marginal cost $c = 1/10$ in both cities. What is the long-run equilibrium price? How many people live in each city?

The population mass is still indexed by v, so the equilibrium condition $\mathbb{E}[u_{LA}] = \mathbb{E}[u_{KC}]$ remains valid. However, the minimum price at which Kansas City landlords can rent is c. At that price level, the demand for housing in Kansas City is $D_{KC} = p_{LA} - c$, and the demand in LA is $D_{LA} = 1 - (p_{LA} - c)$.

Given the equilibrium relationship:

$$p_{LA} = 0.5 + p_{KC}$$

Therefore, the new set of prices is $p_{LA} = 0.6$ and $p_{KC} = 0.1$.

The expected demand for housing in Los Angeles and Kansas City is:

$$\begin{aligned} D_{KC} &= p_{LA} - c = 0.6 - 0.1 = 0.5 \\ D_{LA} &= 1 - (p_{LA} - c) = 1 - (0.6 - 0.1) = 0.5 \end{aligned}$$

(e) How much does social welfare increase from the extra building in (d)?

$$\begin{aligned} CS_{LA} &= \int_{p_{LA}-p_{KC}}^{1} D_{LA}(p_{LA} - p_{KC})dx \\ CS_{LA} &= \int_{0.5}^{1} (1 - 0.5)dx \\ CS_{LA} &= 0.25 \end{aligned}$$

Similarly, the consumer surplus in Kansas City is:

$$\begin{aligned} CS_{KC} &= \int_{p_{LA}-p_{KC}}^{1} D_{KC}(p_{LA} - p_{KC})dx \\ CS_{KC} &= \int_{0.5}^{1} 0.5dx \\ CS_{KC} &= 0.25 \end{aligned}$$

The producer surplus is given by those landlords who are able to rent their properties, minus the ones who are not able to do so. If we assume that in the long run the proportion of agents that each city can accommodate remains at $\frac{3}{4}$, then the producer surplus is:

$$\begin{aligned} \mathbb{E}[PS] &= \mathbb{E}[PS_{LA}] + \mathbb{E}[PS_{KC}] \\ \mathbb{E}[PS] &= (1/2 * 0.5 - 1/4 * 0.1) + (1/4 * 0 + 1/4 * 0.5) \\ \mathbb{E}[PS] &= 0.45 \end{aligned}$$

Therefore, the total welfare is:

$$\begin{aligned} SW &= CS_{LA} + CS_{KC} + \mathbb{E}[PS] \\ SW &= 0.25 + 0.25 + 0.45 \\ SW &= 0.95 \end{aligned}$$

Assuming that the proportion of agents that Kansas City and Los Angeles can accommodate remains at $\frac{3}{4}$, welfare falls from 1 to 0.95. This is because now the landlords who are not able to rent out their properties incur losses.
The loss in welfare will increase as a greater proportion of the population can be accommodated in each city, or conversely, if the proportion of the population that can be accommodated in each city decreases, the welfare will increase until a point where the aggregate offer in each city equalizes the expected demand for housing in each city.

4 Housing Prices, in Practice

It is commonly believed by the general public that an increase in housing supply can increase prices. Figure 1 shows a Tweet about one case in Boston. Figure 2 presents a survey that shows people generally think increasing supply lowers prices, except when it comes to housing.

Does the argument in Figure 1 have merit? What does this argument overlook? How does this mesh with the traditional supply-demand analysis? [1 page maximum]

It is a well-known principle of conventional supply and demand analysis that, under normal circumstances, higher supply leads to lower prices. The housing price paradox, however, casts doubt on this theory by arguing that a greater concentration of homes in a given region can raise demand for those homes.

We may examine the home price paradox by taking into account the concept of perception bias in market dynamics as the housing market and other markets share fundamental economic principles. The peculiarities of the housing market, in contrast to other markets, add to this paradox. Notably, it exhibits slower price adjustments, creating a time lag from a change in value to its reflection in prices. This time delay makes it challenging for participants to have timely and accurate knowledge of an asset's fair value. Additionally, the housing market features diverse assets, and identical houses may have significantly different prices due to various external factors.

As seen in Figure 2, people are generally good at predicting how changes in supply will affect pricing; however, as market complexity rises, this capacity appears to decline. A bias in perception regarding the variables influencing home prices is produced by the combination of asset heterogeneity and price adjustment time lag. Market players often use the assumption that correlation equates to causality in order to simplify price changes. The notion that, for instance, a new, more costly property will increase area value is an example of linear thinking that ignores basic economic principles.

In reality, more costly homes might, in fact, act more as triggers to bring prices down to market level than as price leaders. Due to suppliers' perception that they can sell items for more than their cost of production, the adjustment impact naturally tends to the upward direction. This is not because expensive houses lead the market but because they accelerate the market's adjustment to a new equilibrium.

5 AirBnB Regulation

One can think of AirBnB as a market. What are the key aspects of the goods being sold? What are the types of buyers and sellers? What are their alternatives if they aren't on AirBnB?

You are the mayor of Santa Monica. You are worried that AirBnB is pushing up prices for long-term rentals for residents, changing the character of the city and causing a nuisance for residents. On the other hand, tourists are important for the city and you AirBnB is useful in more efficiently using real estate. What are some of the possible dimensions for regulations? What would you recommend?

The Airbnb market is driven by the interaction of two factors: demand, which is made up of people looking for short-term housing in a particular city, and supply, which is homeowners offering short-term lodging services. On the supply side, there are those who want to make money by renting out their properties for brief periods of time, either because they are underutilized or have extra space. On the other hand, short-term visitors, business travelers, and tourists are usually the ones in demand for reasonably priced and adaptable lodging in the city.

In the Airbnb industry, credibility is built by a thorough review system that assesses variables including price, hospitality, and accessibility. In order to protect the interests of hosts and renters, the platform also includes security measures that handle things like payments, damage policies, and fraud protection.

Therefore, Airbnb functions as a trusted marketplace where hosts and renters can easily engage and obtain the desired services. It exists as an As a result, Airbnb serves as a reliable platform where hosts and renters may interact and get the services they need. It is available as a substitute for other lodging choices, which range in cost and amenities, including hotels (which are frequently more expensive), rental agencies, hostels, and owner-rented vacation homes. For lodge owners looking to make money from underused properties, especially in pricey cities, Airbnb is a useful resource.

But the abundance of Airbnb listings in big cities has sparked worries, especially about rising real estate costs and dwindling supply of cheap accommodation. As a result, cities like Los Angeles, Amsterdam, or Paris have put in place a variety of regulations to strike a balance between the advantages of the market and the requirement to safeguard homeowners in the property market, which is a significant and relatively inelastic market.

One notable regulation involves limiting the number of available days for renting, aiming to curb the shift from long-term leasing to short-term leasing. This restriction addresses the tendency of property owners to favor short-term rentals for higher daily rates, potentially driving up long-term rental prices. By imposing limits, property owners have fewer incentives to transition from long-term to short-term rentals.

Another regulatory approach, as observed in Amsterdam, involves zoning restrictions. For instance, in Santa Monica, regulations could be implemented to restrict short-term rentals in residential areas, preserving residential prices without hindering the influx of tourists. This approach mirrors successful strategies employed in areas like The Red Zone in Amsterdam.

Furthermore, putting in place a thorough registration system would make it possible to keep an eye on the market for short-term rentals and enable efficient taxes. All of these actions are intended to control the Airbnb industry without completely eradicating it. Achieving a balance between providing housing options to meet demand and protecting locals from rising rental and property costs is the aim. Since Airbnb is frequently used in place of hotels and hostels, these rules provide guests flexibility in their lodging options while protecting locals in the approved areas, like Santa Monica.