Regulating Short-Term Rentals in Charlottesville Virginia

By Patrick Brown

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Prepared for:
Juandiego Wade
Mayor
City of Charlottesville, Virginia

Prepared by:
Patrick Brown
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Key Terms

Airbnb: Online short-term rental company. Founded in 2008, it was the primary driver behind the explosion of the "home sharing vacation rental" craze that has led to other competing sites entering the market.

AirDNA: Third party company that hosts a website which tracks performance data from Airbnb and VRBO.

Locality: The place where something is happening. Used to refer to a city of a county where a particular policy is used.

Owner-Occupied: Refers to a short-term rental that the owner lives in for more than half of the year. An owner-occupied short-term rental does not have the negative implications that a non-owner-occupied one does because if the short-term rental is in the owner's primary residence it means they are not taking more houses off the market.

Short-Term Rental: Defined by the Code of Virginia: a "space that is intended for occupancy for a period of less than 30 days", a place that is occupied by someone who does not plan on living in the locality long term

VRBO: Vacation Rental By Owner, competing short-term rental service to Airbnb. Many hosts will put their listing on both VRBO and Airbnb to maximize the chances of being seen by a renter.

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Executive Summary

Charlottesville is currently dealing with a housing crisis. In the past year alone home prices in Charlottesville went up by 30.2%. (Redfin 2024) One contribution to this ongoing crisis is the proliferation of non owner-occupied short-term rentals flooding the market. Short-term rentals are a profitable industry which prompts investors to purchase more realestate to turn into more short-term rentals, this involves houses being taken off an already constructed housing market to be converted into what are essentially hotel rooms. People purchasing additional properties to convert into short-term rentals is inflating home prices in Charlottesville only worsens the housing crisis.

The impact of short-term rentals on home prices is something that has been examined by academics since at least 2016. It has been studied by numerous people in locations all over the world and the result is the same every time. The emergence of short-term rentals is driving up home prices by removing homes from the market. The Short-term rental industry is continuing to grow which suggests that this problem will only continue to get worse.

Short-term rentals have problematic equity implications as well, the people who benefit from the short-term rental industry are people who own homes. Homeowners are more likely to be well off, and also more likely to be white. This suggests that short-term rentals are anti redistributive. Short-term rentals generate more income in neighborhoods that are wealthier, and the top 10% of hosts on the platform make almost half the total revenue.

The impact on the tourism industry is minimal. Short-term rentals are a substitute good for hotels, meaning the hotel industry is negatively affected by the proliferation of online vacation rental services like Airbnb.

Alternatives were examined based on 3 criteria:

- Effectiveness of policy
- Costs of policy
- Ease of implementation

The first alternative is a registration system with a ban on non owner-occupied short-term rentals. This was the best of the alternatives in terms of effectiveness, it ranks towards the middle in terms of costs, it would bring in some revenue through sale of license, but the successful decrease in home prices would lead to a reduction in real estate tax revenue. It might make it harder for new people to enter the market which would have negative equity concerns, and it would be very difficult to implement as it would involve provoking the ire of a lot of powerful people in Charlottesville.

The second alternative is a registration system with a cap on the number of non owner-occupied short-term rentals. This would grandfather in existing renters while not allowing new ones to enter the market. This policy would not reduce housing prices, that is not even the goal, the goal is rather to keep them from rising further. This alternative does have the highest potential revenue by virtue of it having more potential to issue licenses. The disallowing of new market entrants while allowing the old ones has troubling equity concerns as it would allow for currently wealthy people to continue making money, while banning new entrants. The policy would be comparatively easy to implement as it would avoid provoking the ire of Charlottesville's numerous short-term rental owners.

The third alternative is a tax. Charlottesville already has implemented the maximum allowable short-term rental tax of 1%. This 1% tax has not had an effect on deterring new people from entering the market, raising the tax would require lobbying the state government which would be a long, difficult, and unpredictable affair. There is already revenue being taken in by this policy, but I project that it is not nearly as much as we should expect. A properly enforced tax would bring in more revenue for the city. Although fair on the face of it, wealthier people have more ability to avoid paying this tax which means it is likely less wealthy short-term rental owners who currently make up the majority of the share of the tax.

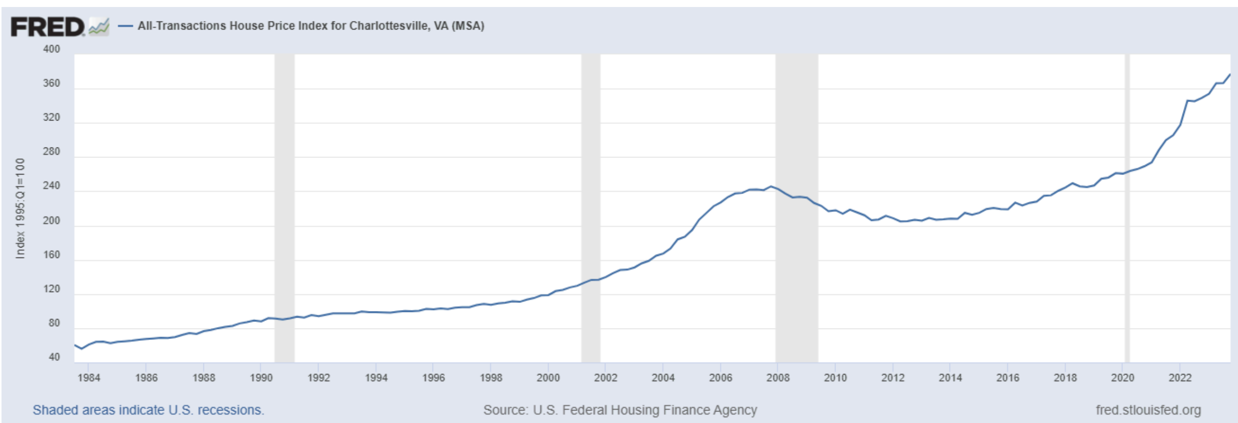
Ultimately I recommend the first alternative. It is the only of the 3 policies that will actually lead to a reduction in home prices, which is the goal. Its main weakness is political feasibility, but when compared to the political feasibility of increasing the short-term rental tax it starts to seem a lot more possible.

Context of the Problem

There is currently a housing crisis in the United States. In the United States a home is deemed “affordable” if the estimated mortgage payment is less than 30% of the average local monthly income (Ludden, 2023). By this metric only 15.5% of homes in the U.S. were affordable in 2023.

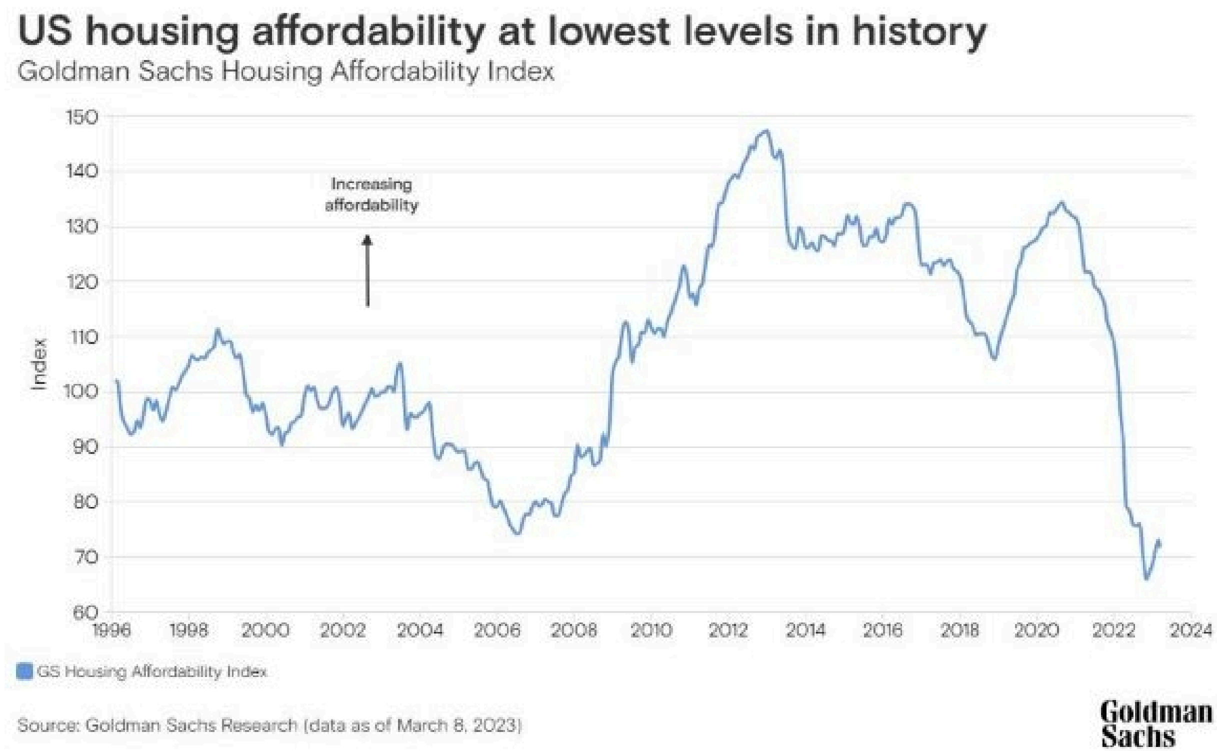
The City of Charlottesville is no exception to this trend. Housing is actually more expensive in Charlottesville than it is in the rest of the United States. In February of 2024 the median sale price of a home in the United States was $412,227, whereas in Charlottesville it was $482,000 (Redfin, 2024). The prices are increasing faster in Charlottesville as well with the year-over-year increase in price in the United States being 6.4% and 33.1% in Charlottesville.

Figure 1: Housing Price Index for Charlottesville VA (Redfin, 2024)
St. Louis FED



The primary culprit for this increase in unaffordability is the low housing supply. In an ordinary market, an increase in demand would be met with an increase in supply as more players enter the market. However, many local governments have deliberately restricted the amount of allowed housing units in an area through zoning laws which often make it illegal to construct more housing.

Figure 2: GS Housing Affordability Index
National Mortgage Professional



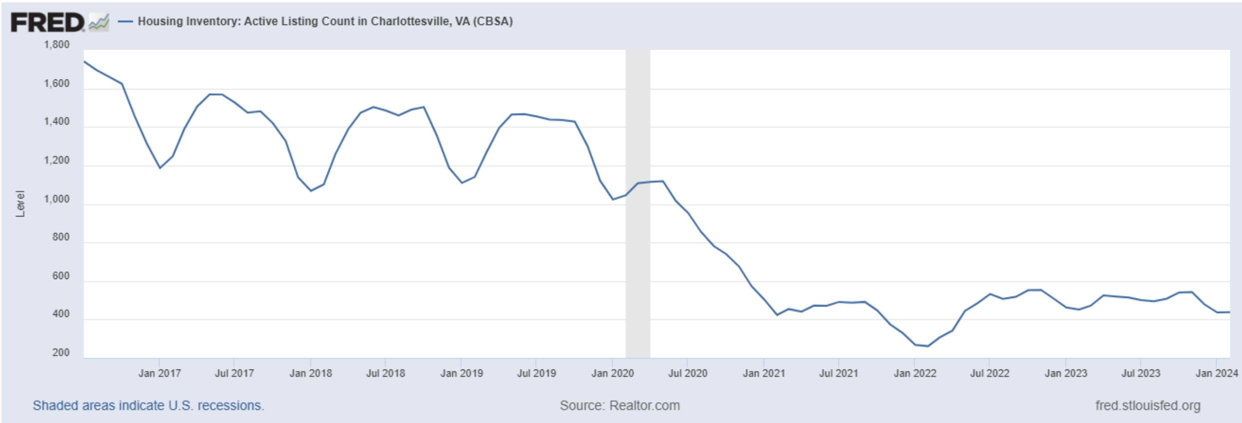
Client Overview

The Charlottesville City Council endorsed the Affordable Housing Plan in 2021, this was a commitment to achieving a housing market that is "healthy, high-quality, affordable, and above all, equitable." (Cville Plans Together).

The City of Charlottesville recognises the problem of lack of housing supply, An effort to increase affordable housing was the primary driver behind the changes made to the new zoning ordinance that was unanimously passed in December of 2023 after a five and a half hour meeting (O'Hare, 2023). However, these changes which include things like effectively doing away with single family zoning and doing away with parking minimums, did not go into effect until the 19th of February (Tubbs, 2024) and beyond that will take time before they actually bear fruit in terms of increasing the Charlottesville housing supply.

It is for this reason Charlottesville, as well as many other localities have begun looking at other ways to potentially reduce home prices.

Figure 3: Active Listing Count in Charlottesville VA
St. Louis FED



Short-term rental industry

One such place that localities have begun looking towards is the short-term rental industry. It may not be immediately obvious why the short-term rental industry would have an impact on housing affordability. A short-term rental as defined by the Virginia code is space that is intended for occupancy for a period of less than 30 days (Code of Virginia § 15.2-983). These are services that are operated through home sharing websites like Airbnb, or VRBO that advertise themselves as opportunities for people to rent out their home to tourists.

This becomes a problem due to the fact that home sharing is very profitable. In Charlottesville the median short-term rental will see an annual revenue of $45,700 (AirDNA). The short-term rental market hit 112.31 billion in 2023 (Precedence Research, 2023) with an estimated 64 billion of that coming just from the United States (AirDNA, 2024). The short-term rental market is forecasted to continue growing with a forecasted market growth of 57.05 billion dollars between 2023 and 2028 (Technavio, 2024), with forecasts predicting that the market could reach a value of 228.9 billion by 2030 (Vantage Market Research, 2022) and as high as 315.18 billion by 2033 (Precedence Research, 2023).

Problem Statement

It seems that the prevalence of short-term rentals will only increase in the coming years, with the demand for short-term rentals now outpacing hotels (Kelyanaraman, 2023). When an investment is profitable, it prompts people to invest more into it. In normal markets this is not an issue, but in this case investing more means purchasing more houses to convert into short-term rental properties. This means that the supply of housing is further reduced during a time when the housing market is already failing to provide an adequate level of housing.

The amount of available homes in Charlottesville continues to shrink at the same time the short-term rental market continues to grow which only serves to exacerbate the problem**. People purchasing additional properties to convert into short-term rentals is inflating home prices in Charlottesville only worsens the housing crisis.**

Literature Review

Evidence of impact of short-term rentals on home prices

After its founding in 2008, Airbnb quickly became the more prominent online short-term rental company (Cadwalladr, 2018). During the 2010s the popularity of hosting on the platform exploded, from hosting less than 100 listings on the platform in 2010, to more than 12,000 by 2016 (Wieditz, 2016).

This meteoric rise has led to interest from academics on what the impact of short-term rentals on home prices would be leading to the effects to be studied in many places around the world. Some of the first studies of this kind were Lee's study examining the industry's impact on Los Angeles (Lee, 2016) and Horn and Merante's study looking at Boston (Horn & Merante, 2017). In their paper Horn and Mertante find that a one standard deviation increase in Airbnb listings in Boston is associated with a 0.4% increase in rent, and in his paper Lee concludes that "Even an outright ban on STRs would be better for low-income residents than the unregulated status quo.". Two years later, in 2018 Barron et al. added to this body of research. They conducted a study that rather than being focused on just one city instead used listings from the entire United States and found that a 1% increase in Airbnb listings leads to a 0.018% increase in rents and a 0.026% increase in home prices (Barron et al., 2018).

Numerous other papers have conducted studies of different localities and all come to similar conclusions. In 2020 Garcia-López et al. found that Barcelona Airbnb activity has increased rents by 1.9%, with neighborhoods in the top decile of Airbnb activity having their rents increased by 7% (Garcia-López, 2020) . In 2021 Calder-Wang found in her study of the distributional impacts of the sharing economy on New York City that Airbnb leads to "an increase in equilibrium rents across all housing units in the city" which she estimates results in the aggregate transfer of 2.7 billion dollars from renters to property owners (Calder-Wang, 2021). Zou's 2019 study of short-term rentals in Washington D.C. found that "having Airbnb establishments in the neighborhood can significantly inflate property prices" (Zou, 2019), Lilang et al. determined in their 2021 paper that were the home sharing business to expand into Hong Kong there would be a likely increase of rental rates by 3.6%-4%, and increase the rent to income ratio by 4%-4.7% (Liang et al., 2021), and Shabrina et al. found that in London a 100% increase in density of Airbnb misuses can be attributed to an 8% increase in rental price (Shabrina et al., 2022).

While individually, an argument might be made that differences between Charlottesville, and whatever city was studied make the results not applicable, the evidence when taken as a whole seems to unequivocally point to the fact that short-term rental properties would have an impact on the Charlottesville housing market.

Evidence of impact of short-term rentals on equity

Much attention is paid to the costs of short-term rentals in terms of housing and rental prices, however this is not the only costs associated with the industry. Just like any emerging technology that promises “disruption” the emerging market of home sharing comes with winners and losers. Short-term rental sites promote themselves as a way for people to make a little extra money on the side by renting out their home, but of course a system that involves people renting out their home rewards people who own homes. Lee found in his 2016 paper on short-term rentals in Los Angeles that listings were primarily located in the densest and most expensive neighborhoods in the city meaning that 69% of the Airbnb generated revenue in Los Angeles went to people who were already wealthy (Lee, 2016). Another study in Iceland found that the most profitable listings were those advertised by upper class households, while lower-income households are underrepresented among hosts, and have less profitable listings (Mermet, 2021). Interestingly this tendency for short-term rentals to be more popular in upper class neighborhoods means that despite the fact that short-term rentals have been shown to increase rent across the board, most of the increase is concentrated in upper class neighborhoods. This means that high-income, educated and white renters suffer most of the brunt of the rent increases (Calder-Wang, 2021).

Short-term rentals are not just attractive to investors as a revenue generating opportunity however, but also because it makes it possible to generate income on a property you plan on flipping. Operating a property as a short-term rental makes it possible to see the property without having to evict a tenant. This possibility opens up the local housing market for use as investment to speculators worldwide, this process can lead to the acceleration of gentrification in an area (Cocola-Grant & Gago, 2019). While proponents of the sharing economy like to present their markets as instruments of economic redistribution, at least in the case of short-term rentals the new market serves to perpetuate and exacerbate existing systems of inequality. This is also shown in a report from McGill university examining British Columbia, Canada which found that the top 10% of hosts earned 48.8% of all revenue, while the top 1% of hosts earned 20.7% of all revenue (Wachsmuth, 2023).

Short-term rental services also have been shown to perpetuate existing systems of racism. Because users often make profiles that show their face, a study found that non-black hosts were able to charge 12% more than black hosts for an equal rental (Edelman & Luca, 2014). While there are racial implications to the Lee and Mermet’s findings that already wealthy people generated the most revenue from short-term rental services, these findings show that even when looking at the same wealth bracket, white people are able to generate more income than minority groups.

A later paper by Edelman & Luca found that guests with a distinctly African American sounding name were 16% less likely to be accepted relative to identical guests with white sounding names. This effect was most prominent among hosts who had never had an African American guest. (Edelman et al., 2017) A report that looked specifically at black neighborhoods in New York City found that even across 72 predominantly Black neighborhoods, Airbnb hosts were five times more likely to be white. In the neighborhoods examined 74% of hosts were white despite making up 13.9% of the population representing a 530% economic disparity. (Cox, 2017)

This report has very troubling findings particularly from the standpoint of wanting to prevent gentrification.

Evidence of impact on hotels and tourism

You might expect that regulating short-term rentals would have a negative effect on the tourism of a city. There is some evidence to point to the fact that short-term rentals might benefit local businesses outside the reach of major tourist Zones (Shabrina et al., 2021), but studies that have examined the impact of the emergence of short-term rentals imply that short-term rentals are merely a substitute commodity for hotels (Gunter et al., 2020). These finds are strengthened by a paper that examined the effect of short-term rental regulations on hotel prices that found that regulation led to an average increase in overnight stays of around 9% (Falk et al., 2020).

Another paper found results that suggest that some regulation might even benefit the short-term rental industry. The short-term rental market is often unstable with a lot of fluctuation in available listings, a study by Vinogradov concluded that regulating the short-term rental market would have a positive impact on the tourism industry by keeping out the most unstable listings and keeping the growth rate of the industry linear (Vinogradov, 2020).

Other studies have found that entrances of short-term rentals into the market reduce hotel revenue. A study of Airbnb’s entry into Austin, Texas found that hotel revenues were affected by 8-10% which led to lower hotel prices, which would be a positive thing for consumers even if those consumers do not participate in the sharing economy (Zervas et al., 2017). Another study found that without Airbnb, hotel revenues would be 1.5% higher and that between 42% and 63% of rooms booked on Airbnb would have resulted instead in a hotel room being booked in Airbnb’s absence (Farronato & Fradkin, 2018). Although the Zervas study also found that the entrance of Airbnb into the Texas economy disproportionately affected lower priced hotels, which could mean there have been negative impacts on smaller businesses. These results too would also suggest that short-term rentals and hotels are substitute goods, which would imply very little impact on tourism in the absence of short-term rentals.

Some studies have also found that alarmingly, tourism based short-term rental use may accelerate gentrification in tourist towns. Short-term rentals have a tendency to increase outside investment which means that tourist dollars, rather than going to the city go to outside investors (Katsinas, 2021).

Alternatives

Identifying Alternatives

I will examine three different alternatives, all of which have been tried before on other localities. The first is registration with a ban on non owner occupied short-term rentals. This alternative involves two things, the first is a requirement for short-term rentals to register with the city and purchase a license in order to operate. Once this registry is set up the second thing is possible, which is to disallow short-term rentals that are not in the owner's primary occupancy. The second alternative also involves registration of short-term rentals, but rather than a ban we place a cap on the amount of non-owner-occupied rentals that are allowed in a given locality. The third alternative is a tax. This means to simply levy an extra tax on short-term rentals which would in theory help dissuade the addition of new short-term rentals to the market as well as generate the city some income which could be put towards affordable housing projects.

Evaluative Criteria

There are three alternatives I will be using to evaluate the alternatives.

- The first is the effectiveness of the alternative. Will this policy actually work to reduce the number of non-owner-occupied short-term rentals in Charlottesville?
- The second criteria is the cost, what are the potential drawbacks to the implementation of the criteria.

  The third is equity, this takes into account how the implementation of this policy impacts marginalized communities.
- The fourth is ease of implementation, this takes into account how difficult and lengthy the process of implementing the alternative will be.

Registration + Ban on non owner occupied short-term rentals

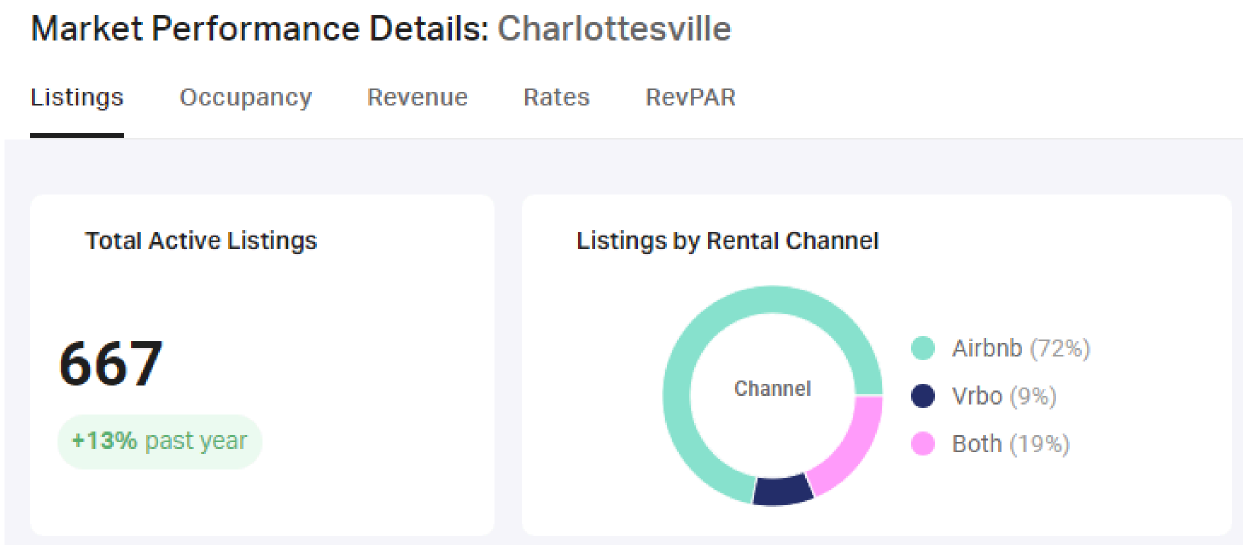
Registration refers to the tactic of passing a law regarding which dwellings make acceptable short-term rental properties and then requiring a permit in order to operate a short-term rental. This, in theory, ensures that only rentals that do not adversely impact the housing market are allowed in the city.

This would involve the Charlottesville City Council passing an ordinance directing the Charlottesville Department of Neighborhood Development Services to begin issuing new permits for short-term rentals. The Department of Neighborhood Development Services already has experience issuing permits, as well as conducting property maintenance inspections which the short-term rental registrations would require. As long as a property meets the standards they will be given a permit. In the event that a property does not meet the standards, because for example it is not owner occupied, they will be denied a permit.

Effectiveness

The effectiveness of short-term rental regulation has been examined in a number of studies. One such study performed by Koster et al. which looked at 18 out of 88 cities in California that had recently adopted regulations controlling short-term rental proliferation found that the new ordinance reduced short-term rental listings by 50% and housing prices by 2%. (Koster et al. 2021) As of February 2024 Charlottesville has 667 short-term rental listings according to data analytics company AirDNA with 480 on Airbnb 60 on VRBO and 126 on both. A 50% reduction could mean more than 300 new homes returning to the new term occupancy market.

Figure 4: Charlottesville total active listings
AirDNA



The 2020 census reports that in Charlottesville there are 21,285 housing units in Charlottesville Virginia which suggests that more than 3% of housing units in the city may be being used for short-term rentals.

But that California study is on the top end of the range, other studies have concluded different numbers. On the high end of the range we have the California study which saw a 50% reduction in listings as a result of regulation.On the lower end of the spectrum we have Chen et al. who looked at a number of different cities from across the United States and observed a reduction of new listening of 31% (Bei & Celata 2023). These studies may not be directly comparable to Charlottesville as all of the cities that were observed are far larger than Charlottesville. However, there does not seem to be any evidence to suggest that size of city correlates with success of a policy.

The Chen et al.study also concluded that a short-term rental license requirement was the only policy that was observed to decrease the amount of new listings on short-term rental sites. This study also observed that the reduction in short-term rental listings was largely temporary, with the amount of listings growing in the months that followed. (Chen et al. 2018) This growth can be attributed to the fact that enforcement of short-term rental regulation is difficult and time consuming which leads to it often being ineffective (Binzer).

Still, the average cost of a home in Charlottesville is $457,000, an increase of 4.0% over the past year according to real-estate marketplace Zillow.

Bibler et al. conducted a study that found that regulation of short-term rentals reduced home prices by as much as 4.4% in the most short-term rental dense neighborhoods. This study found that the effect of intervention was correlated with housing prices in an area with the places with the lowest housing prices seeing little to no impact as a result of regulation (Bibler et al. 2021).

With those two studies taken into account we get an idea for the range of possible outcomes that could result from intervention with on the high end a 4.4% reduction in home prices, or on the low end almost no reduction at all. This would mean somewhere between a $25,000 and $0 reduction in the average home price in Charlottesville, but based on the information gleaned from the two studies mentioned above we can probably expect a 2% reduction in home prices to result from legislation, which would mean a $9000 overall decrease on the median price.

Cost

Passing a new regulation would be relatively inexpensive, however it is through enforcement that short-term rental regulation becomes a little more costly. (Furukawa 2021) Enforcement requires a partnership with short-term rental series both in order to regularly acquire data as to how many short-term rentals are in operation in a given area, as well as to help with enforcing the necessity of the permits.

Bibler et al. conducted a study of short-term rental registration but took into account foreclosure rate as well reduction in housing price in their study of San Francisco and Chicago. They found that in neighborhoods dense with short-term rentals that home prices decreased by 4.4% which would mean a more $20,000 reduction in the average price of home in Charlottesville. Taking the 21,285 number of total homes in Charlottesville this could mean a $425,700,000 decrease in the total price of homes in Charlottesville. But most homes are not for sale in Charlottesville, in March of 2024 the number of homes that were listed as for sale was 575, and the median sold price was $500,181. This would mean a $22,000 reduction to the median sold prices in March (Rocket Homes)

However, some short-term rental owners do use home sharing platforms to supplement their income. An increase in regulation would put some level of increased strain on these types of people and the study found a 44% increase in foreclosures in previously short-term rental heavy neighborhoods. While Charlottesville is not nearly as dense with short-term rentals as the cities observed in this study, this finding does reflect the potential for regulations to catastrophically impact certain families who might rely on incomes from short-term rentals. (Bibler et al. 2021)

According to AirDNA there are 667 short-term rental units in Charlottesville, if all of them paid for a license of $600, which is the price the Richmond charges that would lead to $400,200 in revenue for the city. Of course the purpose of this tax is to reduce the number of listings. If we take 50% the high end level of reduction that was found in the California study this would result in only 333 listings and thus $200,100 for the city. If we take the low end number of 31% that would mean 460 listings and $276,000. This means that the city would likely earn between $200,000 and $276,000 that it could put towards enforcement of the policy.

There is unlikely to be much in the way of revenue lost for the city as a result of this ban. Any tourists that would have stayed in the non owner-occupied short-term rental would instead stay in an owner occupied one, or a hotel as these are all substitute goods. The city does collect real estate taxes however, the current rate is $.96 per $100 this represents more than half of the taxes that the city collects and the projected decrease in home evaluations would lower this tax base. Assuming a $425,700,000 total reduction in home prices, this could mean a $4,086,720 (4%) reduction in real estate tax.

Equity

The registration policy involves obtaining a license from short-term rental owners who do skew wealthier due to them being homeowners. The benefits of the policy are a reduction in home prices which is intended to benefit lower income families who are trying to rent or buy a home. For this reason the policy is redistributive, primarily lower income families benefit from a policy that affects mostly higher incomes ones.

Much of the enforcement process for this policy involves citizens reporting properties that they think are violating the law. This has racial implications in that racial minorities are far less likely to trust law enforcement than non racial minorities. (National Institute of Justice 2013) This could mean that minority short-term rental owners end up being targeted as a result of this policy at higher rates, while they are less likely to report others.

Additionally wealthy people are far more likely to have the resources at their disposal to avoid compliance if it means continuing to participate in a lucrative industry. Especially in a city with limited resources this could result in wealthy people being allowed to pay their way out of compliance with the regulation.

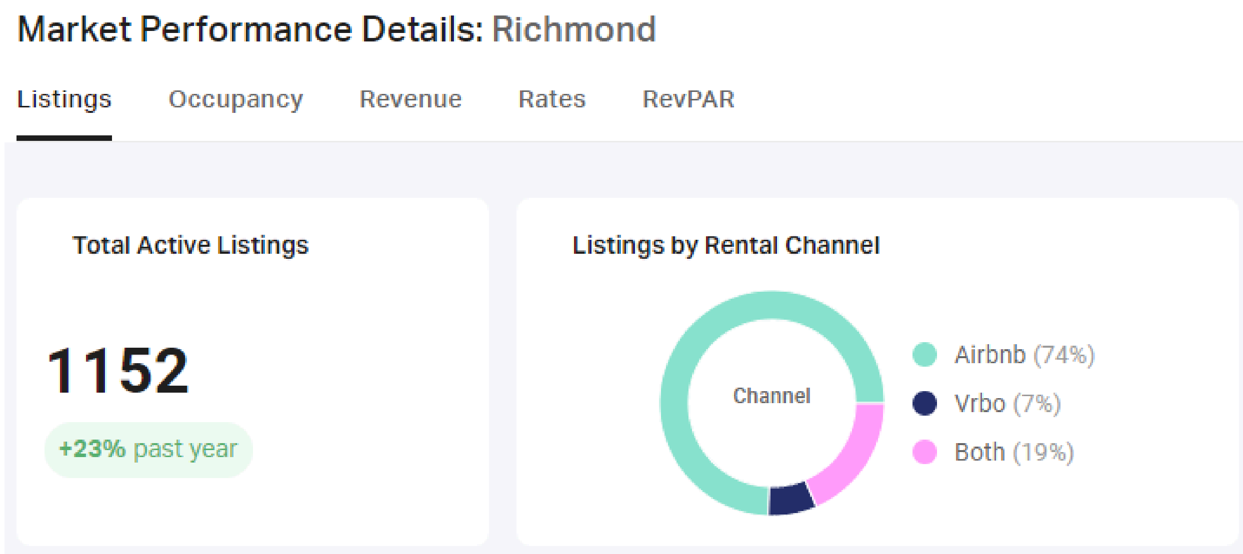
Ease of Implementation

This sort of registration system should be pretty simple to implement. The system also benefits from being uncomplicated and the fact it has been implemented elsewhere in Virginia should mean that short-term rental owners are familiar with how registration works.

Several other cities have passed their own versions of this legislation which would remove the need for drafting original legislation. Recently the city of Richmond Virginia passed a set of short-term rental regulations which included a registration system. If this option is to be implemented in Charlottesville I would recommend that much of the wording be lifted directly from this legislation to ensure that Virginia laws are followed. Richmond charges $600 for an

STR permit which will need to be renewed every two years. The process is handled by the Richmond Zoning Administrative Office, and the funds raised from permitting is used to pay for the administrative costs associated with the policy. (City of Richmond Virginia 2024) This policy was implemented in September of 2023 so we can not yet say how much revenue it generates, but AirDNA says that Richmond Virginia has 1152 active short-term rental listings. If they were all to pay for the $600 permit that would mean an additional $691,200 in revenue for Richmond.

Figure 5: Richmond total active listings
AirDNA



However, there is a part of Virginia code that was passed in 2017 that discusses the creation of a registry for short-term rentals which sets a limit on the fine you are allowed to charge if you are to host a short-term rental without a permit at $500 per violation. (Code of Virginia 2017)This is problematic because it limits how lucrative cracking down on unlicensed dwellings can be, and notably the maximum fine per violation is less than Richmond charges for a permit.

Registration + Cap at current levels of short-term rentals

In 2017 Portland Maine passed a law requiring the registration and licensing of all short-term rentals in the city and placed a 400 unit cap on non-owner occupied short-term rentals with violations being subject to a $1,000 fine. (O'Brien 2019) The idea behind this was to allow some non-owner occupied short-term rentals due to the clear demand, but to not allow so many as to negatively impact the housing market too severely.

Danville Virginia recently looked into a similar proposal which would cap the number of units to 150. (Anderson 2023)

There is a second way that a cap can be utilized as a policy intervention to reduce the number of short-term rentals in an area. This second sort of cap would not be a limit on the total number of units in an area, but a limit on the total number of nights a property is allowed to be listed as a rental.

This sort of intervention has been employed in Berkeley, California and San Francisco, California which only allow a property to be listed as a short-term rental for 90 days out of the year. (City of Berkeley) (SF.Gov)

Effectiveness

The idea behind putting a cap on the number of nights a short-term rental is allowed to be occupied is that it decreases the amount of revenue one could expect from a particular property. However research has not found that placing a cap on the amount of nights a short-term rental is allowed to be occupied has any effect on the number of new listings. (Chen et al.) If the goal is to decrease the amount of listings, this type of cap does not seem to be worth pursuing.

The goal of the other type of cap, the one that puts an upper limit on the amount of legal short-term rentals, is not necessarily to increase the housing supply but rather to keep it from shrinking further as a result of more and more homes being bought up and turned into short-term rentals.

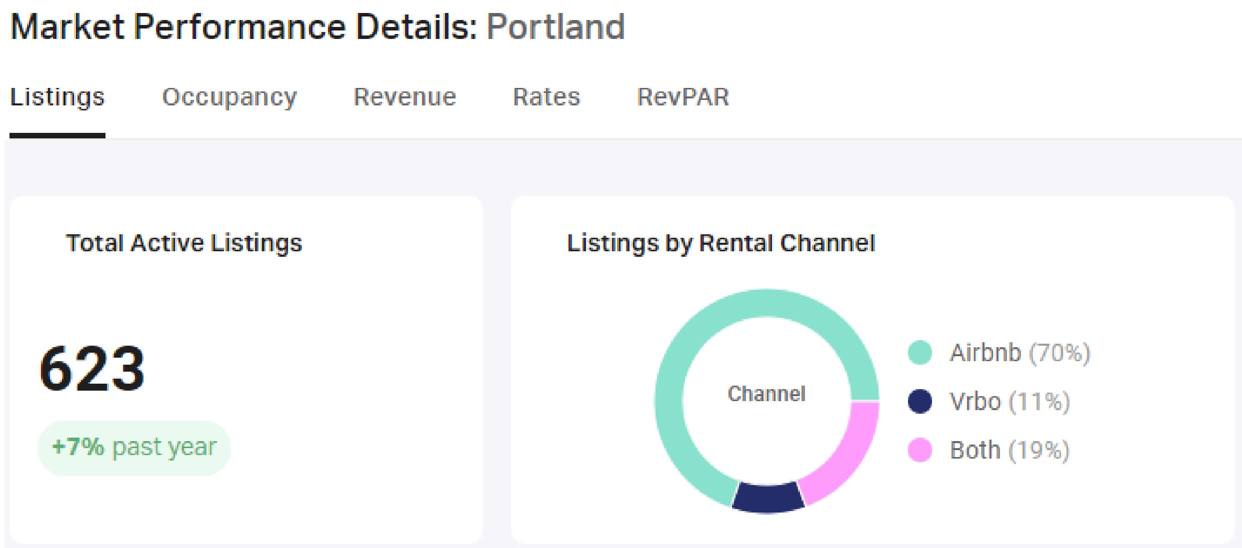
According to data scraped from the Airbnb listings for the city of Charlottesville, see Appendix A of this report, about 80.4% of rentals in the city are non owner occupied meaning that an estimated 536 units in Charlottesville would be subject to such a cap. Danville Virginia proposed a cap of 150. 150 was about the number of units that currently existed in the City at the time of the proposal.

Were Charlottesville to use this approach it would mean a cap of almost 550 units. This would avoid aggravating home owners, and make it easier to implement but would have the downside of not actually increasing the housing supply.

A cap of 550 units would mean implementing a cap that is more than 3.5 times as large as Portland's cap, when Charlottesville is only about 2/3rds the size of Portland.

According to AirDNA there are 623 available listings in Portland Maine, a 7% increase over the past year. This far exceeds the 400 unit cap that went into effect in 2018. Certainly, many of those extra units are ones that are owner occupied. But, it is very unlikely that all of them are.

Figure 6: Portland total active listings
AirDNA



Cost

While allowing some non owner-occupied short-term rental units seems less extreme than restricting them entirely, there are higher costs associated with the policy. Portland Maine has a public record of 1854 short-term housing registration licenses. (City of Portland (2024) While setting up a registry would be required for any recommended policy, the added wrinkle of some being owner occupied and some not makes the whole system harder to police as well as more complicated to implement.

The amount of revenue this policy would generate would depend on where the cap on short-term rentals was placed. Because this policy would not involve eliminating short-term rentals from the market that would mean Charlottesville could potentially collect licensing fees from all 802 short-term rentals in the city. Assuming a $600 price point for the licenses that would mean $481,200 in extra revenue for the city. This money would primarily be expected to go back towards the enforcement of the policy. The fact that it is not also accompanied by a reduction in listings makes it less redistributive than it could be, but if it does manage to slow the growth rate of the industry in the area most of the benefits would be seen in reducing the growth of home prices in the area.

Equity

There also exist questions about the equity of such a system. short-term rentals as an institution benefit those who have the most wealth and can thus afford more properties to rent out. Implementing a cap would mean effectively barring new people from entering the market which would further cement the entrenched wealth structure in Charlottesville. Non white hosts already earn 12% less than white hosts for the same rental, (Edelman & Luca 2014) and a cap would further serve to prevent minority families from building up generational wealth, while allowing select primarily white families to do so.

Ease of implementation

A short-term rental cap would require the issuing of a license by the city. This would give it much of the same bonuses and drawbacks to the registration alternative. A short-term rental cap may be in some ways easier to implement, assuming the cap allows all existing non-owner occupied short-term rentals to continue to exist. If the cap were put into effect to limit the growth of the short-term rental industry in Charlottesville it would potentially receive less push back from established rental operators. According to AirDNA the short-term rental market in Charlottesville has grown by 13% in the past year, so this is a valid option to consider.

With that in mind, short-term rental caps are rare. As a result the literature on the effectiveness of the policy is lacking. Anecdotally, the policy has failed to stop unscrupulous operators from continuing to run unlicensed short-term rentals. However, lack of enforcement is a large problem no matter the regulation tactic that is pursued but the allowance of some non owner occupied short-term rentals may make it harder to stop illegal listings which could make this option slightly less effective.

Short-Term Rental Tax

Economists like to say that when you don’t like a specific behavior you should tax it. Taxes are traditionally a great way to curb negative externalities. If there is demand for owner occupied short-term rentals, perhaps we should place a tax on them so that people can keep using them but the city increases its revenue and can then spend the money on things like affordable housing.

This is already a policy that is in effect in a number of localities, including the entire country of Norway.

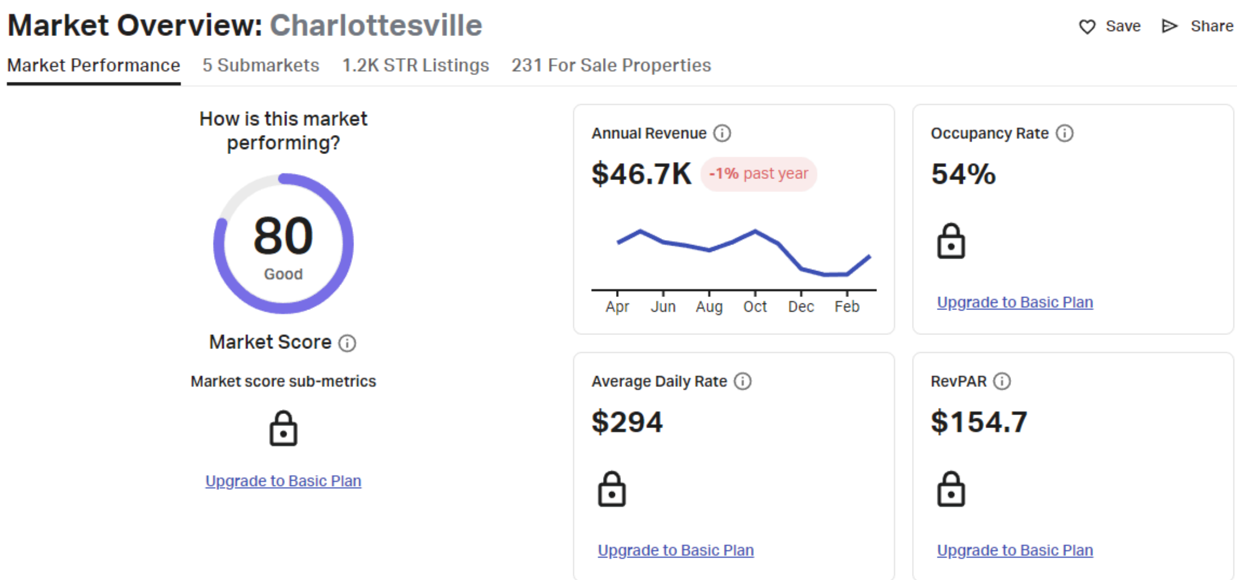
Effectiveness

Garz and Schneider found in their difference-in-difference study between Norway and Sweden that the tax of 22% on income above $1200 (10,000 NOK) did not have a significant effect on causing hosts to leave the platform. It also found that the tax was insufficiently enforced as a result of its requirement for self reporting short-term rental income. (Garz Schneider 2023)

This implies that the problem with a short-term rental tax is twofold. The first problem is the tax rate. In Charlottesville, according to AirDNA the median annual revenue of a short-term rental property is $46,700. So if for example the tax rate was set at the rate that it was in Norway, and all income above $1,200 is taxed at 22% the median short-term rental owner could expect to pay $12,452 in taxes. This would mean that the median owner would still see $46,548 in revenue, which would likely still make the business very lucrative.

Figure 7: Charlottesville market overview

AirDNA



The second problem is that of enforcement. There is little incentive to self report the full amount of earnings which would mean that the median short-term rental owner in Charlottesville would end up paying even less than the $12,452 that they would end up owing in taxes, making their revenue even higher which only service to further dissuade people from listing homes as short-term rentals.

In the United States short-term rentals are already charged the hotel tax rate, however when someone stays in a hotel this does not take away a potential home from someone who wants to live in the area. While consumers might treat a short-term rental as a substitute for a hotel the impact they have on the economy is different. (Falk & Yang 2021) For this reason the existing hotel tax is not an effective dissuasion for short-term rentals. (Furukawa 2019) It may be the case that a short-term rental tax would be effective, I would just have to be high enough to dissuade behavior. However, the state of Virginia already has a rule on the books regarding the limits of how high a tax you are allowed to implement. In 2009 it was added to the code that you are not allowed to levy a tax that is higher than 1% on short-term rentals. (Code of Virginia 2009)

This would mean the median short-term rental owner in Charlottesville would pay $467 in taxes each year and still earn revenue of more than $46,000. If all 667 short-term rentals in Charlottesville were to pay $467 in taxes every year, we could expect to see $311,489 in additional revenue for the city each year. We might expect that an increase in the tax of a short-term rental might increase the price of the rental and thus not cut into the owners profits at all, however Koster et al. looked into this in their study of Los Angeles and found that tourist demand for local accommodation is elastic, and the market is competitive which led to no change in the price as a result of intervention (Koster et al., 2021).

For fiscal year ‘24 the expected revenue is $228,433,246, so an additional half a million dollars, while not insignificant, would not represent a major change in the budgeting process. However, due to the self-reported nature of these taxes it is likely that Charlottesville would not collect the full amount, and it is safe to say that such a tax would have little impact on short-term rental listings in the area.

I can tell this for sure because Charllotesville has had a short-term rental tax on the books since 2015. Charlottesville expects to collect $75,000 as a result of this tax in fiscal year ‘24 which is less than one sixth of the amount that I project they should be collecting. (City of Charlottesville)

Figure 8: Charlottesville FY 2024 adopted budget
City of Charlottesville

Revenues by Revenue Type (General Fund)

	FY20-FY22 ACTUALS			FY23 ADOPTED	FY24 ADOPTED		
	FY2020	FY2021	FY2022	FY2023	2024	$ Change	% Change
Total Revenues							
Taxes							
Real Estate Tax	$74,175,355	$79,793,696	$85,287,083	$89,487,993	$99,403,417	$9,915,424	11.08%
Penalty/RE Tax	$280,312	$265,912	$388,086	$230,000	$350,000	$120,000	52.17%
Interest/Del Tax RE	$74,793	$117,273	$110,538	–	$100,000	$100,000	–
PP Tax	$9,669,081	$9,163,369	$11,928,586	$12,000,000	$12,600,000	$600,000	5.00%
Penalty/PP Tax	$242,043	$170,706	$204,643	–	$190,000	$190,000	–
Interest/Del Tax PP	$76,578	$62,180	$66,101	$185,000	$60,000	-$125,000	-67.56%
Public Serv Tax	$1,457,867	$1,542,920	$1,587,537	$1,589,086	$1,630,567	$41,481	2.61%
Sales Tax (State Allocation)	$11,497,058	$12,202,161	$14,526,660	$13,900,000	$14,400,000	$500,000	3.59%
Util Tax	$4,491,485	$4,477,998	$4,611,301	$4,600,000	$4,600,000	$0	0.00%
Meals Tax	$12,600,643	$11,032,143	$15,925,582	$16,640,000	$18,436,363	$1,796,363	10.79%
Lodging Tax	$5,049,858	$3,792,490	$7,222,710	$7,000,000	$8,300,000	$1,300,000	18.57%
Tax/Bnk Stk	$1,057,296	$1,244,963	$1,225,370	$1,200,000	$1,157,411	-$42,589	-3.54%
Wills Tax	$795,323	$853,716	$1,058,718	$725,000	$725,000	$0	0.00%
Rolling Stk Tax	$18,940	$16,995	$15,006	$18,040	$18,040	$0	0.00%
Sh Term Rental Tax	$53,955	$24,145	$63,548	$60,000	$75,000	$15,000	25.00%
Cig Tax	$641,494	$602,077	$355,991	$550,000	$550,000	$0	0.00%
Record Tax	$157,168	–	–	–	$0	$0	–
Auto Daily Rental	$87,286	$91,896	$177,488	$82,500	$170,000	$87,500	106.06%
VA Comm tax	$2,654,196	$2,357,526	$2,288,232	$2,125,000	$2,125,000	$0	0.00%
Sales Tax (Collected)	$4,172	-$3,837	-$137	–	–	$0	–
TAXES TOTAL	**$125,084,903**	**$127,808,326**	**$147,043,043**	**$150,392,619**	**$164,890,798**	**$14,498,179**	**9.64%**

Cost

The current Charlottesville short-term rental tax is currently administered by the Charlottesville Commissioner of Revenue, the Commissioner’s office is staffed by 14 people and adding another member to the office specifically to be in charge of enforcement of the short-term rental tax could increase the revenue generated by that particular tax. The Commissioner's office spends about $1,598,332 on personnel meaning that the average salary is $106,555. If hiring one more staff member would close the gap between the amount the short-term rental tax currently takes in, and the amount it could, that would make the new hire worth it. However it is not certain that this would be the case.

One issue with the success of this tax is the limits set by the State Government. In order to minimize the potential costs to the City, the Virginia State code could be changed. Proposals to change the Virginia State code may be submitted by members of the General Assembly or Senate, and this is possible but the timeline on such a change would be uncertain and outside of the control of the City of Charlottesville and thus should not be counted on.

It is important to consider for what purpose this tax is being collected however. Much of the reasoning for implementing a short-term rental tax is to lower housing prices, something that is simply not being done at the current tax rate. The money seems to be going back towards the administrative costs for the city which means that this tax in its current form exists only to perpetuate itself.

Equity

A short-term rental tax has the advantage of sounding fair. If everyone in the market pays the same 1% tax then that means that winners and losers are not chosen. People who operate short-term rentals are by and large wealthier than the average person in Charlottesville which does make this a redistributive tax.

Or at least that would be the case if everyone paid their fair share. As it stands there is very little incentive to self report your earnings, particularly if you are someone who operates a very lucrative short-term rental. Sec. 30-322 of the Charlottesville City code describes the penalties for failure to pay the tax, which just amounts to the city commissioner sending you a letter. The onus being put on the city to notify people who are not complying with the tax makes them incredibly unlikely to do so, particularly to wealthy people who have the resources to dispute such a claim.

Because wealthier people have more ability to avoid this tax in its current form, it places a larger burden on people who are entering the market for the first time which tend to be people who are less wealthy.

Focusing on increasing the compliance for this tax would help to alleviate some of these concerns by ensuring that people with the means to do so are not dodging the tax.

Ease of implementation

Charlottesville would not be the only locality in Virginia to implement the 1% short-term rental tax that the state allows. Fairfax county Virginia has this tax on the books (Fairfax County) and Richmond Virginia does as well. However, the fact that Richmond only expects to earn $109,867 (Richmond Virginia, Annual Budget Document) demonstrates that other localities are also having difficulties with the enforcement of the tax.

While more effective enforcement in Charlottesville could be as simple as hiring more staff to make sure the policy is more thoroughly enforced, there is a ceiling to both how lucrative the policy will be, and how effective the policy will be at impacting home prices in

Charlottesville. In order to raise this ceiling the Virginia State Legislator would have to change the state code, and with the amount of localities in Virginia that have already implemented the short-term rental tax to the maximum level it is possible that support would be found from other places in the state.

Outcomes Matrix

Policy alternative	Effectiveness	Cost	Equity	Ease of Implementation
Registration + Ban on non owner occupied short-term rentals	30-50% reduction in short-term rental listings at least in the short-term	Between a $25,000 and $10,000 decrease in home prices which comes with a potential decrease in real estate tax.with between $240,000 and $330,000 increase in city revenue	Wealthy owners have shown that they are able to pay their way out of following the law in many cases. This could serve to prevent newer owners from entering the market and allow older ones to continue to make money.	There would be a lot of push back from people who currently own short-term rentals in Charlottesville.
Registration + Cap	This policy has not been shown to reduce home prices, and the limited evidence suggests that it may not even be effective at stopping the growth of the short-term rental industry.	A potential $481,200 in extra revenue for the city means this policy has the highest possible revenue.	Allowing currently existing short-term rentals to continue to exist while disallowing new owners to enter the market has troubling equity implications by further entrenching the existing wealth structure in Charlottesville.	This policy would cause less ire from local short-term rental operators by allowing them to be grandfathered in.
Short-Term Rental Tax	A 1% short-term rental tax has not been shown to have any impact on housing costs.	$75,000 for the city in its current form but could potentially be up to $311,489 is properly enforced	Theoretically a very fair policy, but the self enforcing nature of the policy leaves the already wealthy with better resources to avoid paying.	Raising the tax from 1% would involve lobbying the state legislature. Increasing enforcement would involve hiring another employee at the Commissioner of Revenue's Office.

Recommendation

The evidence points to the first option, registration and a ban on non owner occupied short-term rentals. The outlined criteria had effectiveness as the most important criteria, and the only policy that thus far has sufficient theoretical and real world evidence for believing it would decrease the amount of short-term rentals registration and a ban on non-owner occupied short-term rentals.

Increasing the short-term rental tax rate would involve getting the Virginia State legislature to change the Virginia State code which is not something that can be counted on, especially for a policy that has not been proven effective at deterring short-term rentals.

Registration is the only of the 11 different policy interventions that Chen et al. observed across 15 different cities that was shown to have any impact on the housing prices of the localities they were implemented in. Both the first and second policy alternatives feature registration as one of the components, which suggests that both might have an effect on Charlottesville housing prices.

The primary reason why the first alternative has been shown to be more effective than the second is the goal behind the adoption of the policy itself. Whereas the objective of the first alternatives is to increase the housing supply by doing away with non-owner occupied short-term rentals, the second is to prevent the housing supply from shrinking further. My main problem with the second alternative is the lack of evidence that it succeeds in doing what it sets out to do. While putting a cap on the number of nights a short-term rental can be used has been studied the results have found no effect. On the other hand putting a cap on the total number of listings is a policy that is not often implemented so the literature on its effectiveness is non-existent. While pretty much all the literature is in agreement that lack of enforcement is what is making almost all short-term rental legislation fail to be as effective as it could be, it does seem plausible that it would be harder to enforce a cap than a ban. This is not to mention the troubling equity implications of not allowing any more short-term rental owners to enter the market while allowing the current ones to stay.

An unfortunate constraint of trying to set up short-term rental legislation in the state of Virginia is that there is a cap on how much you can fine someone for operating without a short-term rental license. Not only does this limit the amount of income the city of Charlottesville can expect to receive from a short-term rental license which would limit the degree to which these policies can be enforced. But it also limits how much the City can charge for a license because if the price that is charged is too high, people will just opt to risk the fine rather than pay for the license.

Alternative two has an added difficulty when it comes to implementation when compared to the other two. Both alternatives one and three have examples of laws on the books for other localities in Virginia that have implemented a version of the policy I have described. Alternative two is being discussed in Danville, but nothing has been implemented yet which makes the policy a little riskier to try in Charlottesville.

The first two alternatives come with their own difficulties regarding implementation. The first alternative would face serious opposition from local short-term rental owners who would be upset and no longer be able to use a second home as a source of income. The second option would likely not face as much backlash because existing operators would be allowed to continue their operations, they might even be in support of such a policy as it would mean less competition for them in the future. But the first alternative comes with significantly more benefits than the second. The literature suggests that we could see between a 1-4% reduction in housing prices this would mean a between a $4,570-$18,280 decrease in the median housing price in Charlottesville. Even on the low side of the estimate that is still a very serious change in price.

However, the literature does show that the reduction in home price is temporary. The literature is also clear that localities that introduce these sorts of policies are very lax on enforcement. If Charlottesville were to be authoritative with enforcement the reduction would likely not be as severe.

With costs comparable to the two other alternatives, the most difficult implementation but by far the highest degree of effectiveness, I recommend pursuing a ban on non owner occupied short-term rentals in Charlottesville, as well as a registration system to keep track of the short-term rentals in the area.

Implementation and Conclusion

The implementation issues for a short-term rental registration system are mostly the same as those that come with the passage of any new ordinance. The first issue is that of passage itself, there are certain stakeholders who would not like to see the policy change. There are also potential issues when it comes to making the public aware of the change, as well as making sure the city has the proper personnel to administer the change, and of course enforce the new rules. Through my alternatives and criteria assignment I have referenced Richmond Virginia as a related example for what a city that has the policy I recommend looks like. When looking at how best to implement the policy I will continue to use Richmond as the primary example.

The major challenge for the proposed alternative would be passage. Many of the stakeholders in Charlottesville would benefit from the new short-term rental policy, the effects have been shown to lower rents which would benefit renters, and the effects on housing prices would benefit people looking to buy a house. However there are also stakeholders to consider who would not benefit from this policy. The first is tourists. Tourists like short-term rentals, but this fact should not negatively affect this new policy's chance of passage. Things like a transient occupancy tax have historically been pretty popular to implement because the tax base is tourists, and thus the city gets more money without residents needing to pay more in taxes.

The second stakeholder could be a problem and that is short-term rental owners. While not necessarily particularly numerous, they are typically pretty independently wealthy with a lot of free time. This makes them the type of person who is likely to show up to a city council, or planning meeting to complain. The people who would benefit from this policy, are those who are not likely to attend public meetings to voice their approval of the policy which could lead to the perception that the proposed policy is unpopular which could harm its chances of passage.

The 5 members of the Charlottesville City Council have all shown that they are committed to pursuing affordable housing issues, with the current zoning reform being a recent and highly public piece of major legislation. This short-term rental policy would certainly not generate as much heat as the zoning reform, however it is possible that some city council members may be wary of making more changes for fear of alienating voters who are resistant to change.

In Richmond Virginia the short-term rental registration is handled by the City's Zoning Administration Division, they collect a 2 year permit for $600. In Charlottesville permitting is handled by the Department of Neighborhood Development Services (NDS). The NDS already handles permitting for a variety of other things in Charlottesville with an expected revenue of $1,165,000 in FY24. The added incomes as a result of the short-term rental permit would be rather significant when compared with that existing revenue so it is likely that additional personnel would need to be hired. NDS already has 27 employees working meaning that one employee handles roughly $50k each. Prior to this policy going into effect it might be in the cities best interest to hire some new employees to make sure that the permitting process is able to be property administered. (Budget. City of Charlottesville 2024)

It is also important to inform short-term rental owners of the new changes before they go into effect. Charlottesville requires a window for public comment prior to a new policy being implemented, but even beyond that requirement it is important to let owners know so they know to get their permits. The City of Richmond set up a web portal for prospective short-term rental owners to submit applications; there is also a listing on the Richmond Airbnb page describing the local legislation. (Airbnb. Richmond, Va) Prior to, and after the changes were made to the Richmond short-term rental rules there were multiple news articles publicizing the change which no doubt helped owners in Richmond be aware of the policy. (Holter, E. 2023)

Another important part to making this policy work is enforcement. Many studies have pointed out that one of the main weaknesses of any sort of regulation of short-term rentals is the lax enforcement. The primary way that lots of localities are currently enforcing their registration requirements is through neighbors reporting what they suspect are unlicensed short-term rentals. I would suggest putting a link on the same page that that link to obtaining a license is where people can leave tips. The City of Richmond assigns a registration ID number to each short-term rental, and the Airbnb website for Richmond recommends that owners put their ID number somewhere on their listing, although this is not required.(Airbnb. Richmond, Va) I suggest that this be a requirement in Charlottesville, with non compliance being punishable by a small fine. It would then be a matter of having the people at NDS periodically check short-term rental listings to ensure compliance. Alternatively Charlottesville could set up a sort of bounty system where short-term rentals that are not displaying their ID number can be reported to the city for a small reward, this could potentially save the city money by not having to hire more people. It should also be noted that there exist services like Host Compliance, which partners with local governments and promises to handle the monitoring of short term rentals, it may be the case that the most effective way to enforce short term rental regulation is to let it be handled by people who have done it before.

The worst case scenarios when it comes to implementation of this policy all result in the status quo remaining the same. With any policy development process it is always possible that the public does not respond, but particular for this sort of policy it is important not only that people notice it is taking effect, but also that specific people- those being short-term rental owners notice it is taking effect. But even if the policy were to result in no new revenue for the city, or no decrease in housing prices, things would remain the same, which makes this policy low risk.

Implementing a registration system for short-term rentals is not much more complex than other code changes that the city is used to making, but that does not mean it can be ignored, without proper administrative care the policy may fail, which while not being a disaster would be unfortunate in that the changes we hope will comes as a result of this policy will not come.

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Appendix A: Charlottesville Airbnb Listings

During the month of February, all the available active Airbnb listings in Charlottesville were examined in order to determine what percentage of them were owner occupied. Of about 272 active listings, 218 of them were found to be owner occupied. This comes out to more than 80% of the listings. This 80% number was used to extrapolate as to how many total listings were likely to be owner occupied. Information on the pricing of the listings, and the owners were also collected but did not turn out to be useful data for this project.

Full Data can be found here: https://docs.google.com/spreadsheets/d/1rdHmElbWu8GONRBFngEc75rJnofLoSEIeCH1iUD7zKA/edit?usp=sharing