

**Property regularization and micro-entrepreneurship in the age of home sharing: A case study of rental markets in Havana**

Raúl Santiago-Bartolomei  
Price School of Public Policy  
University of Southern California  
Lusk Center for Real Estate Research

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**Abstract**

The Government of Cuba has recently allowed its citizens to buy, sell, and rent property as part of a broader set of reforms that foster land market liberalization and micro-entrepreneurship by way of self-employment. For the Cuban government, this set of policies addresses the dual goals of creating wealth and increasing the housing stock. Such changes, however, could favor one goal to the detriment of the other. This research will assess how the formalization of rental markets and micro-entrepreneurship in Cuba affects access to affordable housing and the possibilities of market entry for landlords. I developed hedonic pricing models using online rental ads to analyze the interactions between short- and long-term rental markets in Havana. I also interviewed property owners to analyze the dynamics of their social network, as well as state and non-government actors involved in the emerging land market, and review existing policies to assess barriers to market entry. Results from this research project provide insight into possible spillover effects from property regularization in urban areas in a globalizing and digital context, as well as possible institutional barriers that hinder entry to housing rental markets in transitioning economies.

## Introduction

On November 2, 2011, the Government of Cuba enacted a law allowing its citizens to buy, sell, and rent properties in the island. This law is part of a broader set of reforms implemented in the island to allow greater economic liberalization among its citizens as a way to cope with decreasing state capabilities and foster greater entrepreneurship (Ritter & Henken, 2014). As part of these reforms, the Cuban Government established distinct rental markets: (1) short term and long term rental markets for Cuban citizens; and (2) short term rental markets for tourists and foreigners. On one hand, this has resulted in an increase in the number of self-employed Cuban entrepreneurs (*cuentalpropistas*) that rent units to Cuban nationals or foreign tourists (Spadoni, 2014). On the other hand, these *cuentalpropistas* also rely on transnational ties, new non-agricultural cooperatives, and local real estate brokers to acquire the means that would allow them to rent property in order to increase income and accumulate savings (Ritter & Henken, 2014).

The combination of the real estate market liberalization policies and the formalization of *cuentalpropistas* is viewed by the Cuban government as a means to address the dual goals of creating more wealth and capital and increasing the housing stock for its citizens (Mesa-Lago & Pérez-López, 2013). To gain further insight into how these goals could be working in tandem, it is important to discern how these changes in property rights affect both renters and the new landlords in the form of *cuentalpropistas*.

I examine whether these changes in property rights in Cuba could be achieving one of these goals to the detriment of the other. More specifically, I will use Havana as a case study to answer the following questions:

1. *How does the recent emergence of entrepreneurial activity in Cuba hinder or foster access to affordable housing for its citizens?*
2. *How does the underlying institutional context foster or hinder individual landlords (microentrepreneurs) from entering the housing rental market?*

The purpose of this research project is to provide some insight into how overlapping policies related to property regularization and the formalization of entrepreneurial activity affect each other in the Havana province in Cuba. This goal will be achieved by:

1. Analyzing the association between the housing market and the emerging entrepreneurial activities in the form of short and long-term rentals; and
2. Identifying and analyzing the interactions between actors involved in the rental markets and the underlying institutions and social networks that are relevant for these dynamics.

## Crisis and reform in Cuba

In 1960, the Cuban government approved the Urban Law, which became the established housing policy until the recent reforms in 2011 (Vega, 2014). The 1960 Urban Law enabled the government to provide housing to all its citizens by nationalizing all land and structures and allocating them through usufruct or rent agreements. Occupants could become owners of the housing unit after paying rent to the government for a period of 20 years, leading to a homeownership rate of 85%, among the highest in all of Latin America. During the time the law was active, housing occupants

that moved to different dwelling units could only do so through swaps. Selling, buying, or renting property was prohibited (Mesa-Lago & Pérez-López, 2013).

The collapse of the Soviet Union, however, set up a series of events that pushed the Cuban Government to implement different measures that would eventually lead to the approval of the economic reforms in 2011. With the beginning of the dissolution of the Soviet Union in 1989, Cuba lost its most important trading partner and economic support. Beginning in 1989 and ending in 1994, Cuba underwent an economic depression that saw its GDP fall by over 35% (Ritter & Henken, 2014; Spadoni, 2014). This period of economic depression in Cuba is known as the “Special Period”.

Before the “Special Period”, the single biggest export in Cuba was sugar, which was sold above market prices through agreements with the Soviet Union. At the same time, goods such as medicine, food, and fuel were imported at below market prices through subsidies from the Soviet Union. Thus, once the Soviet Union collapsed, Cuba accumulated large levels of debt and experienced food, fuel, and medicine shortages that led to periodic blackouts, food rationing, undernourishment, and the reversal of developmental achievements made in prior decades (Mesa-Lago & Pérez-López, 2013; Ritter & Henken, 2014).

During the “Special Period”, the Cuban Government saw limits to the centralization of decision making and the statist approach to the economy that were characteristic of the Cuban Revolution. The aggravating socioeconomic consequences of the economic depression overstretched the capabilities of the Cuban State in conjuring appropriate policies. In response, the Cuban Government underwent different forms of decentralization that resulted in somewhat greater territorial self-government and development initiatives at the neighborhood level, the creation of the *consejos populares* (people’s councils) in 1990 being an example of the former and the microbrigades for neighborhood revitalization in 1989 as an example of the latter (Anguelovski, 2013; Hearn, 2008).

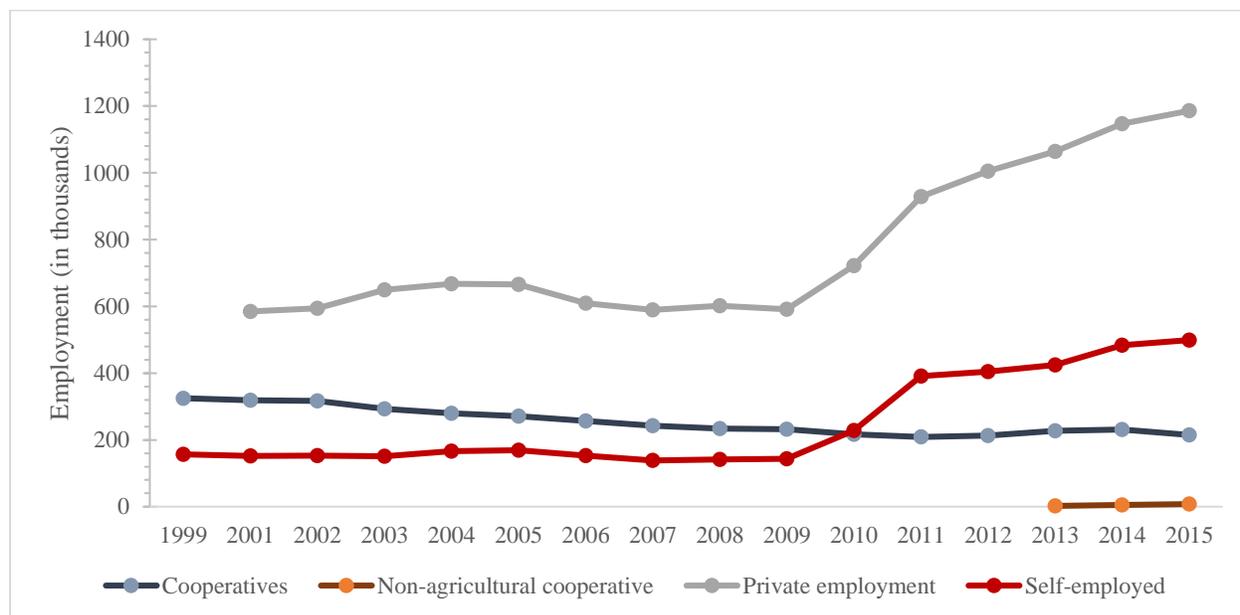
With the collapse of its sugar industry and struggling extractive and agricultural sectors, Cuba opted to direct investment towards tourism as one of the pillars of its economy. A byproduct of this approach, was the blossoming of many informally self-employed entrepreneurs in the Cuban economy that started illegal businesses, such as *paladares* (small in-home restaurants), *casas particulares* (private lodgings similar to bed and breakfasts), and taxi services (Henken 2002). Although the Cuban Government started to clamp down on these businesses, it recognized their potential to improve household livelihoods and started to loosen restrictions on their operations by 1993 (Ritter & Henken, 2014). By 1997, self-employment and private business licenses were issued by the Government for over 150 economic activities, including transportation, construction, private lodging, and restaurants (Henken, 2002).

During this time, a double currency system was implemented with the purpose to “convert” transactions in United States (US) dollars and earnings gathered through exchanges of goods and services with foreigners into higher returns for the Cuban population. The Cuban Convertible Peso (CUC) is pegged to the US dollar and is primarily used for currency exchange, while the Cuban Peso (CUP) is used for transactions between Cuban citizens. The use of the CUC as the exchange currency, and its elevated value in comparison to the CUP, put Cuban entrepreneurs that engage foreigners, or are related to the tourism industry, in a distinct socioeconomic advantage over other Cuban citizens.

By 1994, the turn towards tourism and the loosening of restrictions for self-employment had paid off enough to lift Cuba out of the “Special Period”, but the island’s economy was still in a precarious state. Nonetheless, by 1997, the Cuban Government, at the behest of Fidel Castro, opted to implement more stringent regulations and requirements for self-employment and private businesses (Ritter & Henken, 2014). The increasing inequality and the difficulty in monitoring earnings and practices in these emerging businesses drove the Government to deem self-employment and private businesses as contrary to the egalitarian objectives of the Cuban Revolution (Mesa-Lago & Pérez-López, 2013).

In 2006, Fidel Castro temporarily ceded power to his brother, Raúl Castro, due to health reasons. Raúl Castro was elected by the National Assembly as the President of Cuba’s Council of State and Council of Ministers in 2008 and was re-elected in 2013. Recognizing the need to spur greater levels of growth and with decreasing state capabilities to vertically implement policies that address the needs of Cuban citizens, the Cuban Communist Party, under the leadership of Raúl Castro, approved sweeping changes to the economy. By 2010, self-employment restrictions were loosened considerably, while public-sector enterprises and agencies laid-off over 600,000 workers (Spadoni, 2014). The result was an increasing trend in self-employment and private sector employment that has not stopped since (Figure 1).

**Figure 1: Non-state employment in Cuba**

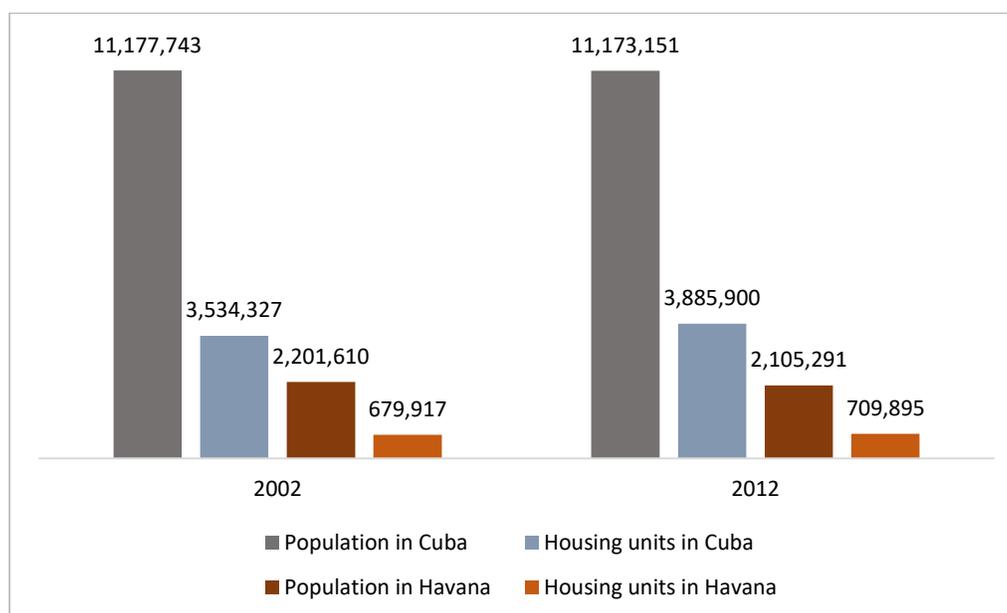


Source: *Anuario Estadístico 2016, Tabla 7.2 - Ocupados en la economía según situación del empleo, Oficina Nacional de Estadísticas*

Even though there has been a decrease in population and an increase in housing units between 2002 and 2012 (Figure 2), the average number of people per housing unit has remained somewhat stable (Table 1). Nonetheless, there are significant housing shortages due to heavily deteriorated homes and lack of construction to increase supply prompted the Cuban Communist Party to consider major changes in the housing sector on November 2011. The Cuban Government approved the new property reforms (Vega, 2014) which allowed Cuban nationals to own real estate property, sell and buy real estate property at privately established prices, and apply for loans. Cuban citizens are allowed to own one residence and one vacation home. By allowing citizens to

access credit, they can invest in home improvements to improve the quality of housing in order to sell or rent their property. The result has been booming real estate and rental markets, especially short-term rentals through online platforms such as the home-sharing company, Airbnb<sup>1</sup>. It should be noted, however, that citizens cannot use their homes as collateral or apply for mortgages, and only the housing structure or building structure itself is subject to private ownership and transactions. The land in Cuba is still state-owned.

**Figure 2: Change in population and housing units in Cuba and Havana between 2002 and 2012**



Source: *Anuario Estadístico, Indicadores seleccionados del Censo de Población y Viviendas, Oficina Nacional de Estadísticas*

**Table 1: Average number of people per housing unit in Cuba and Havana between 2002 and 2012.**

	2002	2012
Cuba	3.16	2.88
Havana	3.24	2.97

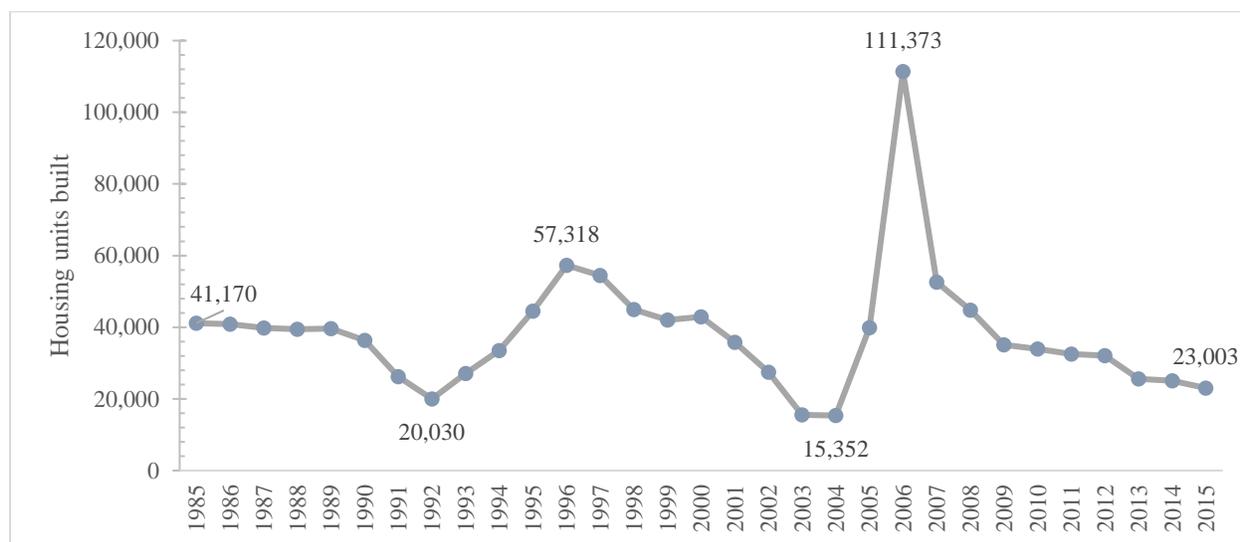
Source: *Anuario Estadístico, Indicadores seleccionados del Censo de Población y Viviendas, Oficina Nacional de Estadísticas*

Although banks in Cuba (which are all state-owned) have yet to provide mortgages, they do provide personal loans, while the 2010 reforms to ease restrictions on self-employment and

<sup>1</sup> For 2017, Airbnb stated that Cuba is the “fastest-growing country in the world based on listing growth with over 22,000 Airbnb listings are spread across 70 different cities and towns”, as stated in their report *Airbnb and Cuba: Two years of connecting people and generating economic opportunity for individuals and families*, available here: [https://2sqy5r1jf93u30kwzclsmfqt-wpengine.netdna-ssl.com/wp-content/uploads/2017/06/Airbnb\\_CubaReport\\_2017.pdf](https://2sqy5r1jf93u30kwzclsmfqt-wpengine.netdna-ssl.com/wp-content/uploads/2017/06/Airbnb_CubaReport_2017.pdf)

private businesses allowed the creation of non-agricultural cooperatives that can provide loans for house improvements. Private construction businesses and self-employed skilled workers could be hired by homeowners for construction projects. Many of these construction projects are not only for in-situ home improvements, but also for housing subdivisions or the addition of independent units. As a result, the supply of new housing units has been growing consistently, albeit at a very slow rate (Figure 3<sup>2</sup>).

**Figure 3: Construction of housing units in Cuba**



Source: *Anuario Estadístico 2016, Tabla 12.1 - Viviendas terminadas por provincias, Oficina Nacional de Estadísticas*

### Property right changes and implications for housing

These reforms in Cuba have implications for the conceptualization of property rights in a statist economy with a colonial past, where high levels of informality have persisted through the years, in spite of government efforts to eradicate informal economic exchanges. Property rights are understood to be essential in reducing transaction costs in economic exchanges, since they reduce the possibilities of externalities and other market failures that can distort economies; they also provide the means by which property can be commodified and exchanged (Coase, 1960; Demsetz, 1967; and Barzel, 1997). Once property rights are acknowledged and codified, they must be enforced by trustful and transparent institutions. Such institutions allow sustaining fair competition and owning capital that can be converted into inputs for production (Barzel, 1997, De Soto, 2000).

Property rights, however, can be conceptualized through the harmonization of formal systems of property codification and broader social norms and informal institutions (De Soto, 2000). Broader social norms and informal institutions can be instrumental in translating property into improved economic outcomes. Research on the housing markets in Hanoi and Ho Chi Minh City in Vietnam, showed that clear but informal social rules (i.e. outside from state-sponsored

<sup>2</sup> The sudden peak in housing units built in 2006 coincides with reconstruction efforts after hurricane Dennis damaged over 120,000 housing units in Cuba (source: <http://www.minrex.gob.cu/es/dennis-provoco-perdidas-por-1-400-millones-de-dolares>)

rules) in Hanoi allowed real-estate markets to behave rationally, even if it didn't have the Western-style property rights present in Ho Chi Minh City (Kim, 2007). When it comes to transitioning countries with mostly statist economies, this harmonization is far from conflict-free, since the state can have differing views on informality in contrast to market economies.

In market economies (i.e. capitalist societies), the informal economy, as a manifestation of informal institutions, is often the result of the need for cheaper goods and labor that cannot be provided within state sanctioned economic activities. In contrast, the informal sector in statist economies responds to an excess in rigidity to the central planning approach, where actors engage in informal transactions that often parallel economic activity by the State. The result is that, while informal economic activity is outside state purview in both market and statist economies, it is complementary of formal economic activity in the former and it undermines the central planning approach of the latter (Portes & Böröcz, 1988). Thus, informal economic activity in statist economies will be seen as a threat to the State.

Indeed, in transitioning economies, the move towards a market economy necessitates a shift of power from state mediators that work as redistributors, to the direct producers of goods and services (Nee, 1989). In both the post-socialist Eastern Europe and the transitioning China, the economy was geared to be more market based by decentralizing the state and rearranging organizational structures in economic production to allow flexible arrangements that spur exchanges of capital and knowledge between actors (Nee, 1992; Stark, 1996). The transitioning process, however, results in potential conflict between a State that has a historical role in centralizing decision making and ensuring egalitarianism, and private economic actors that yearn for greater autonomy to improve economic outcomes (Castells, 2011). This conflict is evident in Cuba's case as well.

In the case of housing, such contrast between market and statist economies becomes apparent. Informal settlements are often the result of the inadequacy of market economies to provide shelter and employment through formal means for an increasing labor force in search of economic opportunity in urban centers. While such settlements can complement the supply of housing in urban areas, the quality of these units can be severely hindered. At the same time, tenure insecurity can reduce the prospects for economic achievements for these dwellers. Traditional ways of addressing this issue have focused on fostering homeownership by issuing land titles. Research shows that land titling can improve labor prospects for households and can lead homeowners to invest in home improvements, however, the evidence for improved access to financial credit, through the use of homes as collateral for loans, is mixed (Field, 2005, 2007; Field & Torero, 2006; Galiani & Schargrotsky, 2010).

Rental housing, on the other hand, is often overlooked by governments in market economies as a way to address housing needs, mainly because homeownership provides economies with financial collateral that maintains the flow of capital (Gilbert, 2016). As a result, rental housing often yields substandard housing and legal arrangements that benefit landlords at the behest of the tenants, as multiple studies in informal settlements in South Africa have shown (Gilbert, Mabin, Mc Carthy, & Watson, 1997; Mwangi, 1997; Watson & McCarthy, 1998).

Transitioning economies are not exempt from informal settlements in their urban areas. As urban areas become the center of new economic production, rapid rural to urban migration ensues, which, coupled with strict housing allocation policies, constrains access to housing for incoming dwellers (Wu, 2002, 2004; Zhou & Logan, 1996). Although housing rental is still a task carried

out by the State, citizens rent out their property to incoming city dwellers, often informally and by subdividing their home into multiple units. The underground rental housing market in Beijing, where homeowners rent basements or former underground shelters as individual units, is the result of strict housing allocation policies by China (Kim, 2016).

In Cuba's case, however, the purposeful creation of two rental housing submarkets (rentals for citizens *vis a vis* rentals for foreigners) can lead to the two markets affecting each other. Differential pricing between short-term rentals to foreigners and long-term rentals to Cuban nationals can result in market segmentation across geographical units (Bourassa, Hoesli, & Peng, 2003; Goodman & Thibodeau, 1998; Wu & Sharma, 2012), which, alongside supply constraints, could cause short-term rentals to generate a crowding-out effect over affordable long-term rentals for citizens. Units that otherwise would be rented to Cuban citizens could potentially be converted into short-term tourist rentals, or capital that would have created more long-term rentals may be diverted to the short-term market. If so, this would imply that the recent housing policies in Cuba could inhibit the State from achieving more equitable outcomes for its citizens, specifically, its renters.

### **Micro-entrepreneurship and social capital**

For the potential *cuentalpropistas*, formalizing and enforcing property rights might not be enough to ensure social mobility. On this point, Erica Field's research on the urban titling program in Lima, Peru, shows that greater household tenure security in informal communities can improve social welfare through greater labor participation and increased investment in home improvements (Field, 2007). In this case, households without titles resorted to informal rules to secure tenure, but are still kept away from the formal labor market for fear of losing their homes. What this research shows is that the benefits stemming from the formalization of tenure do not reach everybody equally and access to jobs, social capital, or financial services remain important linkages, showing the importance of implementing parallel policies that provide a network of supportive institutions for households.

In studying such networks, it would be useful to distinguish between formal and informal means that compose "weak" and "strong" ties between actors (Granovetter, 1973). In economic development, "strong" ties in networks consist of formal exchanges between actors that tend to be reciprocal and difficult to dissolve, which include formal economic transactions, contracts, and agreements. "Weak" ties are informal exchanges or links between actors, examples include interlocking board members, kinship, common membership in organizations of actors in different networks, or face to face interaction.

While "strong" ties can provide the means to ensure economic sustenance, "weak" ties allow the possibility to incorporate learning and measures of adaptation when facing external shocks (Uzi, 1996). These "weak" ties cause structural holes in networks, that provide the opportunity for individual actors to exchange information and ideas with actors in different communities that can result in innovation and learning that can benefit the network in the long run (Burt, 2004).

Much of these aspects have been incorporated in the international development literature in the form of social capital. Social capital relates to those structural characteristics in social networks that allow actors to access resources through their ties in ways that can result in improved

economic outcomes (Coleman, 1988). Closed networks of kinship can allow actors to access resources and establish ties of mutual support that can improve the possibilities of developing individual capabilities, like educational attainment or economic security, with the aggregate effect of improving human capital (Coleman, 1988). Such advantages notwithstanding, social capital can have detrimental aggregate effects if such tight kinships result in exclusionary practices or prohibit the exit of individuals that could achieve even greater economic gains outside the network (Portes & Sensenbrenner, 1993; Portes 1998).

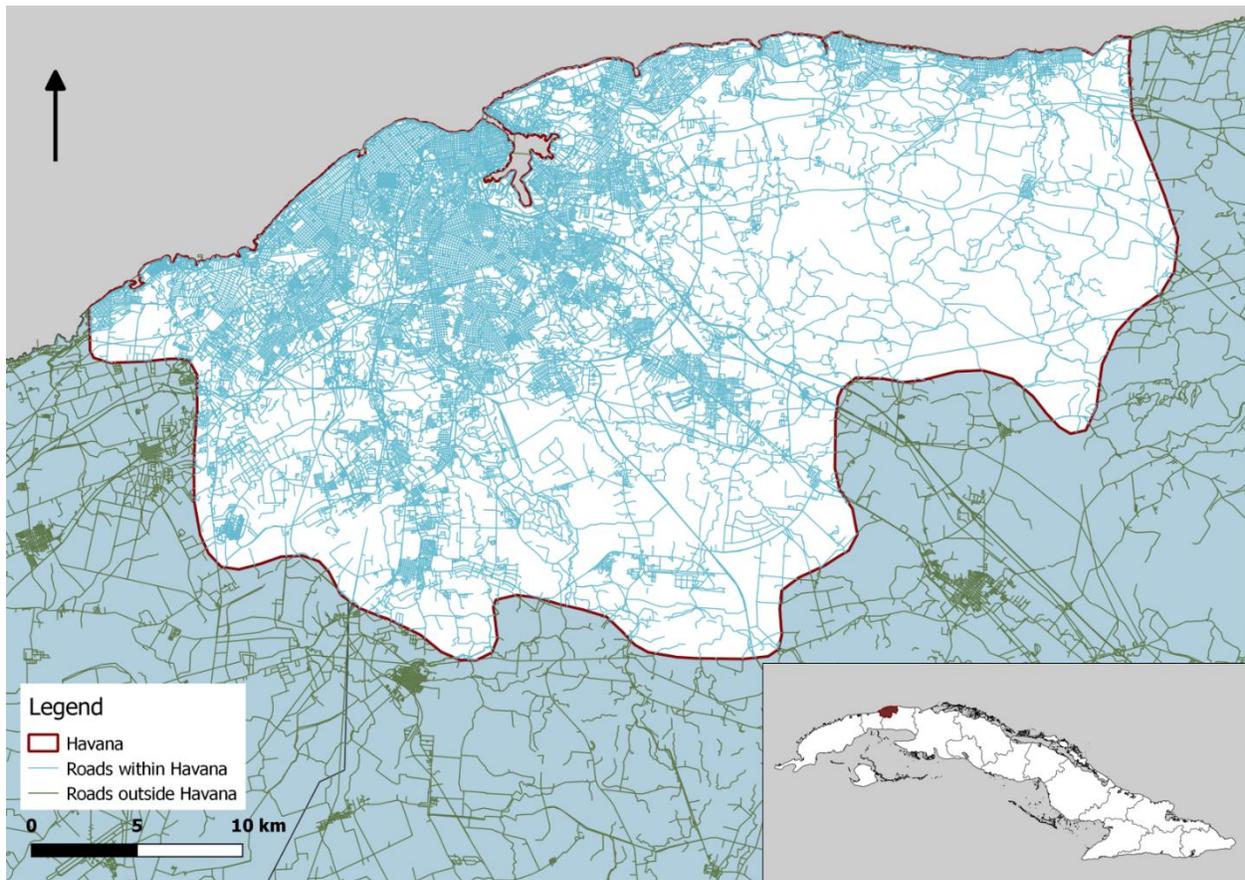
Research on the social capital of entrepreneurs in newly created markets in the global south and transitioning economies shows that entries to markets are hindered by “institutional voids”, or absence of formal actors that link individuals to needed resources, and results in inequities across gender and income level (Mair, Marti, & Ventresca, 2012; Mair & Marti, 2009; Puffer, McCarthy, & Boisot, 2010). In these situations, actors depend on informal transactions with other actors that can provide the necessary “bridging” to access information or resources (Batjargal et al., 2012).

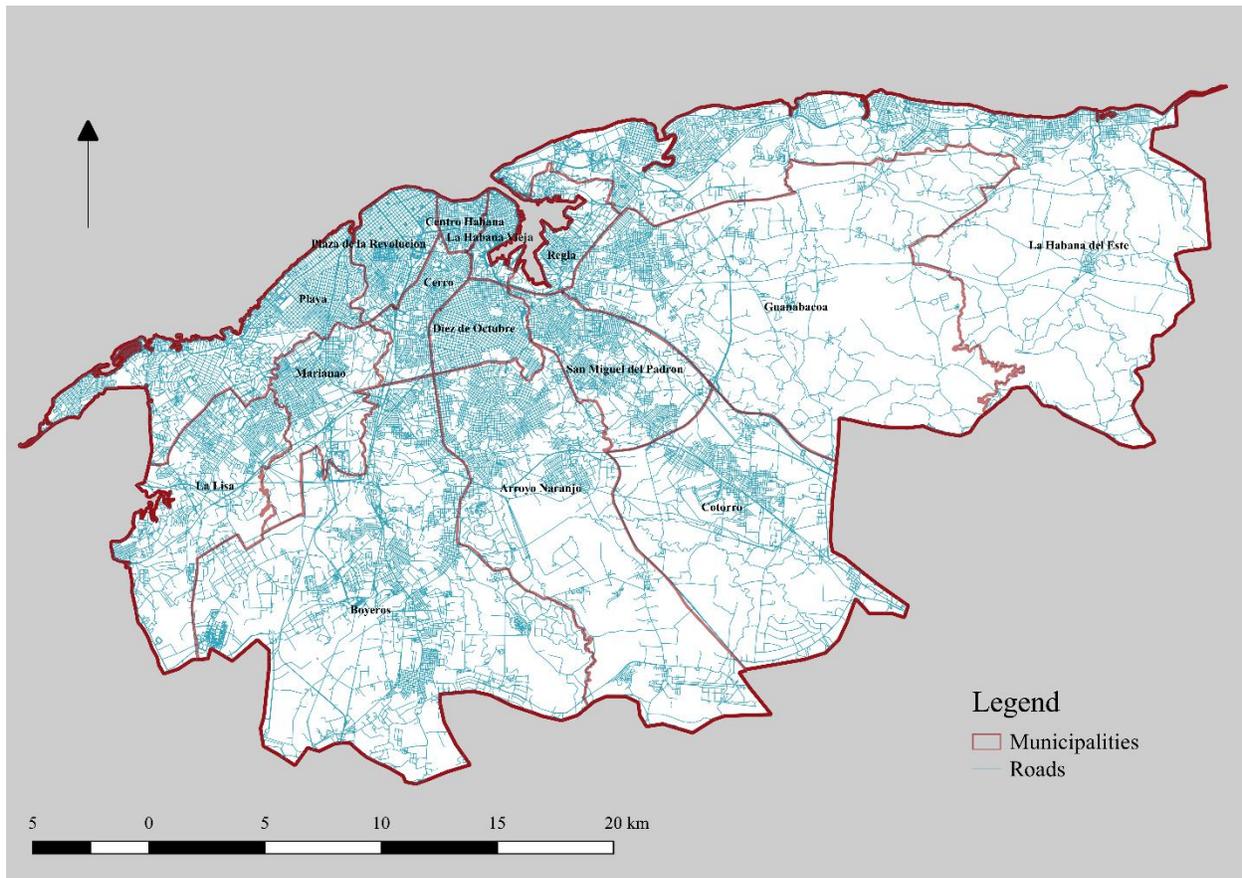
Cuba’s recent reforms and decentralization efforts from the late 1980’s and early 1990’s have yielded a significant set of civil society and private actors that can provide potential homeowners with many opportunities. Increased access to the internet (although still very limited), an increasing number of local non-government organizations, historical transnational ties with the Cuban diaspora, greater local government autonomy, the creation of non-agricultural cooperatives, and emerging private businesses can be beneficial for entrepreneurs to access necessary information, financial resources, and services to start and operate new businesses, including home rentals (Hansing & Orozco, 2014; Hearn, 2008; Mesa-Lago & Pérez-López, 2013; Ritter & Henken, 2014).

### **Methods and analysis**

This research will use Havana, Cuba as a case study in rental markets in transitioning economies. As the capital and largest city in Cuba, Havana is a prime location for the island’s emerging rental market. The city, which is officially one of Cuba’s provinces, is located at the northern coast in Cuba (Figure 4), adjacent to the Atlantic Ocean and just south of the Florida Keys in the United States. It has a population of over 2 million and is composed of 15 municipalities (Figure 5) that differ significantly in their densities, population, and economic activity, providing potential contrast to assess the rental market (Table 2).

**Figure 4: Location of Havana, Cuba**



**Figure 5: Municipalities of Havana****Table 2: Population of municipalities in Havana in 2010**

Municipality	Population
Playa	176,614
Plaza de la Revolución	152,318
Centro Habana	151,174
Habana Vieja	90,682
Regla	42,707
Habana del Este	172,783
Guanabacoa	113,728
San Miguel del Padrón	158,268
Diez de Octubre	212,171
Cerro	129,196
Marianao	132,976
La Lisa	133,350
Boyeros	184,647

<b>Municipality</b>	<b>Population</b>
Arroyo Naranjo	210,214
Cotorro	74,670
<b>Total</b>	<b>2,135,498</b>

Source: *Oficina Nacional de Estadísticas*

Using data from multiple online real estate and rental ad sources, I developed hedonic pricing models that will allow us to determine if the new short-term and long-term real estate rental markets in Havana are linked. Additionally, using a snowball approach, I conducted semi-structured interviews of property owners to identify the institutional factors and social networks that structure the possibilities of entry in the rental markets. This allowed us to identify those actors that play a more central and bridging role in the information and resource exchange that leads to entrepreneurial activity.

Given that the study takes place in Cuba, the findings from the proposed research project will be valuable to the literature on transitioning economies. The results also highlight how different goals (i.e. property regularization and fostering local entrepreneurship) that stem from a “do-it-yourself” approach to addressing poverty and informality can either be complementary or detrimental to each other.

### **Hedonic Pricing**

Websites like *revolico.com*, *cubisima.com*, *porlalivre.com*, and *detrasdela fachada.com* contain real estate, short-term and long-term rental ads, with additional information that includes: listed price (in Cuban convertible peso, or CUC), size (in square meters), number of rooms and bathrooms, location, year of construction, and additional amenities (e.g. air conditioning, swimming pools, hot water, etc.). Long-term rental data were extracted by using web-scraping packages *rvest*, *xml*, and *xml2* packages in R.

Since Airbnb provides the market platform for the vast majority of short-term rentals in Havana, data from the site was purchased from Airdna, an Airbnb market analysis firm. The data includes short-term rental listings between August 1, 2015 and September 1, 2017.

The extracted information was codified and tabulated. The data were used to carefully craft hedonic pricing models that incorporate specific characteristics of each housing unit as well as spatial effects resulting from adjacent rental activity. I developed a regression that models the price of a long-term rental unit as a function of the density of short-term units offered for rent online in the same geographic market, controlling for unit characteristics and municipal level fixed effects. I used density of short-term rentals of total online listings instead of using the share of the entire rental market because official Census data for Cuba has yet to identify and measure rental housing units.

The results showcase one of the first hedonic analyses of Cuba’s emerging private rental market. This hedonic pricing analysis can help determine if the short-term rental market for foreigners is having a crowding-out effect on affordable rental housing in Havana.

Results from the hedonic pricing models are expected to show whether the short-term rental market for foreigners and the long-term rental market for Cuban citizens in Havana are linked, and if so, how. This would indicate if any changes in prices in the rental and real estate markets

resulting from adjacent short-term rentals can adversely or positively affect the possibilities of accessing affordable housing in the city. Thus, this would provide some initial evidence into the interaction between these markets. These findings can also shed light on how micro-entrepreneurship in rental markets in the Global South can be akin to the sharing economy in housing in the North, and the increasing concern about the possible outcomes on equity that the latter can have in cities (Gurran & Phibbs, 2017).

### **Interviews and Network Analysis**

I used a snowball approach and semi-structured interviews to lay out the institutional channels and barriers, as well as other actors through which they establish the ties that allow these individuals the means by which they can access capital and resources to improve, acquire, sell or rent their property. This included identifying actors that fall within formal roles (e.g. registered real estate brokers, non-agricultural cooperatives, and local financial institutions) and informal roles (e.g. family members that send remittances and unregistered brokers or contractors) in the established framework of property rights in Cuba.

The resulting information from the interviews was used in the following two ways: 1) generate a descriptive framework that contrasts the formal and informal dynamics that shape the real estate and rental markets in Havana; 2) determine which actors play central and bridging roles and what are the actor attributes that drive the ties in the different networks. This analysis sheds light on the procedural and social hurdles that might prevent market entry by some homeowners, which would lead to additional equity issues.

The findings from the interviews and social network analysis lay out the process by which informal ties between actors improve or hinder access to capital and resources for households to become *cuentapropistas* that rent their property. If households are too reliant on transnational ties and other informal actors to access the necessary resources, then existing inequities in market entry among potential landlords in Havana would become more prevalent as the gap between those with access to capital and those without becomes wider.

Data collected during the interviews and surveys are kept confidential and are managed following the standards set by the University of Southern California's (USC) Institutional Review Board (IRB).

## **Results**

### **Hedonic Pricing**

An initial draw of 12000 rental ads in *cubisima.com* yielded over 2300 active listings for Cuba, of which 1700 were located in Havana. Of these, 1463 provided enough detail for statistical analysis. Table 3 shows the number of observations for each client type across the municipalities in Havana, while Table 4 shows the average rental prices in the same distribution. The data were scraped between the months of April 2017 and October 2017, and the final set of observations include listings that are dated between June 2015 and August 2017. Because many municipalities have a low number of observations, I removed data from municipalities that have less than 10 total observations. This yielded a final data set of 1402 observations, of which 223 are long-term rentals.

The total number of Airbnb listings is 24,158 (Table 3). At the municipal level, the number of listings ranges from 4 in Cotorro, to 8,395 in Plaza de la Revolución.

Long-term prices are expressed in monthly rates, while short-term prices are in daily rates. Geocoding could not be completed for this analysis due to incomplete and irregular information among the stated addresses in the listings, but the listings are matched to municipalities. It is worth noting that average rent prices for long-term rental is skewed in some municipalities, but that is mostly due to the small sample sizes in such instances (e.g. Boyeros). Also, although monthly rental rates are much lower than 30 times the daily rate, this is due most long-term rentals being offered to Cuban nationals, who would be unable to afford the rates set for foreign tenants.

**Table 3: Number of observations in each municipality and for each client type**

<b>Municipality</b>	<b>Long-term rentals</b>	<b>Short-term rentals</b>
Arroyo Naranjo	2	278
Boyeros	2	188
Centro Habana	17	5565
Cerro	5	358
Cotorro	0	4
Diez de Octubre	17	362
Guanabacoa	3	67
Habana del Este	8	929
Habana Vieja	5	4226
La Lisa	7	61
Marianao	13	118
Playa	66	3462
Plaza	74	8395
Regla	0	65
San Miguel del Padrón	8	80
<b>Total</b>	<b>223</b>	<b>24158</b>

**Table 4: Average rental prices in each municipality and for each client type**

<b>Municipality</b>	<b>Average long-term rent (monthly rent in CUC)</b>	<b>Average short-term (daily rent in CUC)</b>
Arroyo Naranjo	450.00	85.95
Boyeros	700.00	80.87
Centro Habana	232.76	54.86
Cerro	330.40	56.91
Cotorro	N/A	68.88

<b>Municipality</b>	<b>Average long-term rent (monthly rent in CUC)</b>	<b>Average short-term (daily rent in CUC)</b>
Diez de Octubre	117.29	107.72
Guanabacoa	93.33	105.63
Habana del Este	68.38	96.56
Habana Vieja	610.00	81.98
La Lisa	209.29	115.76
Marianao	167.00	56.56
Playa	408.11	165.31
Plaza	528.00	78.27
Regla	N/A	101.11
San Miguel del Padrón	60.00	60.09
<b>Total</b>	183.10	33.94

In this stage of analysis, I performed hedonic regressions for the long-term rental markets. The rental price is the dependent variable, while explanatory variables include the number of rooms, dummy variables for type of dwelling and if the rental unit has a private bathroom (see Table 5). Fixed effects dummy variables at the municipal level were also included to account for local spatial effects (see Figure 5). Additional amenities and services were not included in the analysis since these are yet to be sorted and codified in the dataset. Sub-municipal neighborhood fixed effects, at the *Consejo Popular* level, were not included because no additional neighborhoods outside the Vedado and Miramar neighborhoods were identified in the dataset, and because geocoding of the observations was not possible to perform.

**Table 5: Variable definitions**

<b>Variable name</b>	<b>Definition</b>	<b>Variable type</b>
price	Rental price	Linear; dependent variable
constant	Regression intercept	Linear
number_of_rooms	Number of rooms in the rental unite	Linear
private_bath	Determines if rental unit has a private bathroom	Dummy; 1 = rental unit has private bathroom
Apartment	Determines if rental unit is an apartment	Dummy; 1 = rental unit is an apartment
House	Determines if rental unit is a house	Dummy; 1 = rental unit is a house
Room	Determines if rental unit is a private room. Omitted category.	Dummy; 1 = rental unit is a private room

<b>Variable name</b>	<b>Definition</b>	<b>Variable type</b>
Diez_de_Octubre	Determines if rental unit is located in the Diez de Octubre municipality	Dummy; 1 = rental unit is located in Diez de Octubre
Arroyo_Naranja	Determines if rental unit is located in the Arroyo Naranja municipality	Dummy; 1 = rental unit is located in Arroyo Naranja
Boyeros	Determines if rental unit is located in the Boyeros municipality	Dummy; 1 = rental unit is located in Boyeros
Centro_Habana	Determines if rental unit is located in the Centro Habana municipality	Dummy; 1 = rental unit is located in Centro Habana
Cerro	Determines if rental unit is located in the Cerro municipality	Dummy; 1 = rental unit is located in Cerro
Cotorro	Determines if rental unit is located in the Cotorro municipality	Dummy; 1 = rental unit is located in Cotorro
Guanabacoa	Determines if rental unit is located in the Guanabacoa municipality	Dummy; 1 = rental unit is located in Guanabacoa
Habana_del_Este	Determines if rental unit is located in the Habana del Este municipality	Dummy; 1 = rental unit is located in Habana del Este
Habana_Vieja	Determines if rental unit is located in the Habana Vieja municipality	Dummy; 1 = rental unit is located in Habana Vieja
La_Lisa	Determines if rental unit is located in the La Lisa municipality	Dummy; 1 = rental unit is located in La Lisa
Marianao	Determines if rental unit is located in the Marianao municipality	Dummy; 1 = rental unit is located in Marianao
Playa	Determines if rental unit is located in the Playa municipality	Dummy; 1 = rental unit is located in Playa
Plaza	Determines if rental unit is located in the Plaza municipality	Dummy; 1 = rental unit is located in Plaza
San_Miguel_del_Padrón	Determines if rental unit is located in the San Miguel municipality	Dummy; 1 = rental unit is located in San Miguel del Padrón

Variable name	Definition	Variable type
Airbnb_density	Number of Airbnb listings per squared kilometer in each municipality	Linear

**Table 6: Descriptive statistics for regression variables**

Variable name	Mean	Median	Standard Deviation	Minimum	Maximum
price	79.903	35	182.181	0.1	1800
number_of_rooms	93.995	35	217.599	0.1	2225
private_bath	0.577	1	0.494	0	1
Apartment	0.524	1	0.500	0	1
House	0.318	0	0.466	0	1
Room	0.154	0	0.361	0	1
Airbnb_density	207.63	5.77	431.81	0.05	1457.71

I ran 3 models, all of which use the natural logarithm of rental price of long-term rentals as the dependent variables. The main explanatory variable, the short-term rental density, was estimated from the Airdna data for Airbnb listings at the municipal level (Table 6). Model 1 shows how the housing unit characteristic and the Airbnb listing density relate to long-term rental prices. Model 2 drops the Airbnb density variable and adds municipal fixed effects dummy variables. Model 3 shows the complete model, with the Airbnb density variable, housing unit characteristics, and municipal fixed effects.

**Table 7: Density of short-term rentals for each municipality**

Municipality	Short-term rental density (listings/Km <sup>2</sup> )
Arroyo Naranjo	3.06
Boyeros	1.30
Centro Habana	1457.71
Cerro	31.96
Cotorro	0.05
Diez de Octubre	27.32
Guanabacoa	0.48
La Habana del Este	5.77
La Habana Vieja	858.86
La Lisa	1.50
Marianao	4.91
Playa	93.17
Plaza de la Revolucion	619.65
Regla	5.78
<b>Average</b>	<b>207.63</b>

Most of the observations are located in the main tourist and employment areas, i.e. Plaza de la Revolución (mainly in Vedado), Playa (mostly in Miramar), Habana Vieja, and Centro Habana. It is worth noting that the trend in the fraction of short-term and long-term rentals begins to reverse in those municipalities that are farthest from the tourist and employment areas, which indicates that the dynamic between the markets is very sensitive to location.

Results from the regressions are consistent in showing that rentals are priced according to their housing characteristics. Model 3 shows that, controlling for location and housing characteristics, an increase in the fraction of short-term rentals results is related to a statistically significant increase in the rental price of long-term rentals. Specifically, after controlling for municipal effects and all other property characteristics being equal, a 10% increase in the density of short term rentals in a given municipality can result in a 3.3% increase in average monthly rent for long-term rentals.

One caveat is that the short-term regressions have a very low R squared value, which means that variations are poorly explained by these results ( $R^2 = 0.203$  in Model 3). In addition, using only the online listings and Airbnb data to determine the number of long-term and short-term rentals, respectively, rather than the entire market for both rentals, could have potentially resulted in selection bias, rendering the parameter estimates questionable in their consistency. Nonetheless, these results suggest that the online rental data and Airbnb listings data are reliable enough for statistical analysis and precision should improve with additional observations.

**Table 8: OLS regression results with municipality clustered standard errors. Standard errors in parenthesis. "\*" means confidence level between 90 and 95%, "\*\*\*" means confidence level between 95 and 99%, "\*\*\*\*" confidence level greater than 99%**

Variable	(1)	(2)	(3)
Constant	3.770*** (0.35)	4.413*** (0.36)	3.181*** (0.53)
numberofrooms1	0.351*** (0.12)	0.401*** (0.13)	0.338*** (0.13)
Room	-1.481*** (0.47)	-1.208** (0.50)	-1.389*** (0.49)
Apartment	-0.263 (0.25)	0.056 (0.26)	-0.219 (0.27)
log(Airbnb_density)	0.230*** (0.05)		0.327*** (0.10)
Diez_de_Octubre		-0.941* (0.54)	0.239 (0.64)
Arroyo_Naranjo		0.635 (1.17)	1.938 (1.22)

Variable	(1)	(2)	(3)
Boyeros		0.244 (1.17)	-0.579 (1.17)
Centro_Habana		-0.211 (0.42)	0.266 (0.44)
Cerro		-1.645** (0.76)	0.764 (1.06)
Guanabacoa		-0.619 (0.97)	0.957 (1.07)
Habana_del_Este		-1.033* (0.60)	0.003 (0.67)
Habana_Vieja		0.767 (0.76)	0.116 (0.77)
La_Lisa		-0.205 (0.64)	1.098 (0.75)
Marianao		-0.311 -0.48	0.671 -0.564
Playa		0.708* (0.40)	0.768* (0.40)
Plaza		0.365 (0.27)	-0.118 (0.30)
Observations	223	223	223
R <sup>2</sup>	0.17	0.165	0.203
Adjusted R <sup>2</sup>	0.155	0.106	0.142
Residual Std. Error	1.571 (df = 224)	1.616 (df = 213)	1.583 (df = 212)
F Statistic	11.486*** (df = 4; 224)	2.811*** (df = 15; 213)	3.367*** (df = 16; 212)

## Interviews and Network Analysis

Interviews with landlords in Havana provided insight to understand how the underlying institutional context, social networks, existing economic linkages, and the landlords' socio-economic profile structure the possibilities of market entry. Although the reforms that have provided the grounds for the current booming rental market in Havana were approved in 2014, various landlords rented their property before these reforms were implemented. At the same time,

some of the interviewees became self-employed renters less than a month before the interview. This provides some contrast of experience, which can help assess how the 2014 reforms marked a change from previous years.

The interviews took place during two fieldtrips to Havana on June 2017 and February 2018. Thirteen self-employed landlords were interviewed, of which 9 offered short-term rentals to foreigners, and 4 offered both short and long-term rentals to Cuban nationals. Only two landlords offered to rent an entire home, the rest offered private rooms. Finally, all the properties that were offered by the interviewed landlords were located either in the Vedado ward at the Plaza de la Revolución municipality, in the Miramar ward at the Playa municipality, the Centro Habana municipality, or Habana Vieja municipality.

In addition to the interviewed landlords, a representative of Cuba's *Oficina Nacional de Administración Tributaria* (ONAT; Cuba's tax collection agency) and a compliance inspector from the Physical Planning Institute (IPF for its Spanish acronym; Cuba's central planning agency) were also interviewed regarding tax practices and urbanism policies applicable to the private rental market in Havana.

Two local long-term tenants were also interviewed, as well as two *gestores de turismo*, or tourism intermediaries.

### Who Are the Landlords?

Most of the landlords that I encountered were women, which is contrary to the trends observed for self-employment in the island in general. Although there were interviewees that were as young as 19, most were middle-aged or older. Some transitioned into self-employment after retiring from their previous employment, others moved towards self-employed entrepreneurs after leaving their jobs, and some became self-employed landlords while retaining other jobs or other forms of self-employment. Most interviewees identified themselves as being white or mulatto; only one of the interviewees identified as being black.

All the interviewees can be described as self-employed entrepreneurs who see renting as an opportunity towards economic success, or in the very least, as a way to make ends meet. While many landlords offer their property for rent as a source of supplemental income, others depend on their rentals as their main source of income.

One interviewee took to renting rooms of their home after retirement because the experience provided them with a sense of fulfillment and purpose: "I started to rent my home because I needed to feel that I could still be useful, that at my age I could still become an entrepreneur".

Long-term landlords stated similar goals and opportunities in their interest in the rental market. However, while long-term landlords see their renters as tenants with responsibilities to fulfill within a mutually reached agreement, short-term landlords see their renters as guests or customers. Tenants for long-term renters tend to be internal migrants (young former state employees) looking for jobs in the new private service sectors for higher wages (mostly tourism based) and Cuban and foreign college students.

The process and experience of registering as a self-employed landlord in Havana was considered to be smooth and efficient across all the interviewees. To become a self-employed landlord in Havana, the household must first acquire the property title and present it to the local housing division of the Physical Planning Institute. Given that from the early onset of the Cuban Revolution housing and property titles were made widely available to the population through rental agreements with the state, none of the interviewees had any issues in this regard.

Once the property title is acquired, the next step is to pay a 100.00 CUC fee in their local bank for the self-employment license. Although the interviewees did not express any obstacles in gathering the 100 CUC for the fee, this is certainly a substantial amount for any Cuban national, considering that average monthly income is approximately 25 CUC. Once the self-employment fee is paid, the household can then apply for the self-employment license for landlord through the local Direction of Labor and must register as a landlord in ONAT for tax purposes. The whole process would usually take between 1 to 2 weeks, as expressed by all the interviewees. From there, landlords must pay a 10% tax rate on earnings in a monthly fashion, with business expenses subject to tax deductions. Landlords that are licensed to rent to Cuban nationals pay a base monthly tax of 100 CUP (Cuban pesos) or 4 CUC, while landlords that rent to foreigners pay a base monthly tax of 100 CUC. This monthly process, however, is made all the more tedious to short-term rental landlords due the lack of essential goods in state-owned stores.

One aspect that seemed to first present itself as a major obstacle for households to achieve market entry is the need for startup capital, which is usually for home repairs, remodeling, and improvements. In this regard, the amount interviewees had to invest initially in their homes varied widely; one landlord stated that they had to spend \$300.00 US dollars in home repairs, while another interviewee spent over \$10,000.00 US dollars. The access to funding for this initial investment seemed to be the biggest determinant to whether a particular landlord would decide to rent to Cubans or foreigners: the inability to afford significant repairs to accommodate was one of the main reasons stated that the landlords that rent to Cubans decided to do so.

Since short-term rentals typically require physical improvements that could significantly alter the layout of these housing units, the IPF performs routine and random inspections in coordination with municipal authorities to ensure that such works are up to code and in compliance with local ordinances. Given that most of the short-term rental units are located in historic and touristic zones in Havana, ordinances are stricter regarding housing improvements. Such ordinances, however, do not focus on fostering mixed-uses (although there are some restrictions as to where locate new private businesses), commercial clustering or affordable housing. Rather, these are geared towards maintaining the physical characteristics of the structures.

One notable observation is that short-term renters tend to overcrowd their homes to accommodate tenants/guests. Also, given the considerable entry capital, most short-term renters believe it is highly unlikely that they would turn into long-term renters if their business wasn't successful in the future.

### Networks and Social Capital

There were two aspects that determined how each landlord formed their own social networks related to their rental businesses: 1) access to resources and 2) access to information. Access to resources refers to those social linkages that each landlord forms to acquire funds or materials to

enable them to operate their rental business. Access to information refers to the channels of communication that allows landlords to learn and incorporate information relevant for their rentals, this information can be related to regulations or the idiosyncrasies of the rental business.

Most landlords that could afford home repairs and improvements would access the necessary funding through their relatives, especially those that live abroad. In this case, many landlords would receive loans from their relatives through remittances. Although there were some interviewees that used their personal savings to fund their home repairs and improvements to rent to foreigners, those landlords that were unable to access funding for repairs were those that rented to Cubans. It should be noted that even though local banks can provide personal loans, the interviewees opted to not apply for these because either they felt that the minimum amount set by the banks often exceeded the amount needed by the landlords<sup>3</sup>, they would rather access funding through their relatives as a work-around of the banks' bureaucratic process, or they simply never considered this option.

Loans from relatives are much more lax on requirements than unsecured loans from banks in Cuba. The interviewed landlords paid relatives according to monthly earnings, with no interest rates and no contractual obligations. Agreements were always verbal.

Another resource-related matter is the way landlords, particularly those that rent to foreigners, receive payment. Most of the interviewees advertise their rentals through Airbnb, but do not receive payment directly from the home-sharing company. Because of the US embargo, Airbnb cannot issue payments directly through Cuban nationals, so it relies on an authorized intermediary, VaCuba, a Miami-based company that provides multiple services for Cuban expatriates, to send payments. Interviewees that rely on this system to receive payment have complained that payments are delayed by 2 to 4 months since the time of rental. Because of this, the interviewees that do not advertise through Airbnb have established a reliable local word-of-mouth reference system that ensures them a constant flow of renters that pay cash-in-hand. This more complex arrangement was exclusively observed for the more experienced landlords that have been in the rental business for several years.

One less common practice, but which was still present among the interviewees, is the use of paid intermediaries to acquire supplies and groceries and assist in bureaucratic transactions, particularly those pertaining to taxes, since they have to be paid on a monthly basis. This, however, was never mentioned as common practice among landlords that provide short and long-term rentals for Cubans.

The interviewees overwhelmingly relied on other landlords and acquaintances to access information regarding the requirements to register property and acquire the self-employment license, regulations regarding the rental market, and changes in legal framework. Likewise, landlords would rely on friends, kinship, and other landlords to better ascertain the idiosyncrasies related to the rental business. These include common amenities to be made available to tenants, cultural sensitivities regarding foreign tenants, contacts for home repairs and improvements, and, more importantly, factors to consider when pricing their property.

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<sup>3</sup> It seems plausible that many landlords are unaware of the possibility of applying for loans in any of the State-owned banks in Cuba. Unsecured loans for self-employed Cubans have a minimum amount requirement of 120 CUC (or 3,000.00 CUP), according to the Central Bank of Cuba, and interest rates can range between 2.25% and 7.75% for repayment periods of 3 and 120 months, respectively.

### Economic Linkages

All interviewees in the short-term rental markets expressed concern with the availability and pricing of supplies and groceries that are essential in operating their rentals. This includes hardware like tools, tiles, and other materials for home improvements, as well as everyday items like toilet paper. These items, with the exception of groceries that can be acquired in cooperatives, are available through state-owned stores throughout the city. The problem is that these items are in short supply, causing landlords to visit 3 to 4 locations to purchase a single item; this is made even more complicated when purchasing items in batches.

Another consequence of supply shortages is the hoarding of goods by informal resellers when these do become available, giving them free reign to engage in price gouging. This, in turn, causes landlords to buy overpriced items that are only available in the informal market. Because of this, these items become ineligible to be declared as expenses for tax deduction purposes.

This situation has prompted the interviewees in the short-term rental markets, almost in unanimity, to say that the state should develop stores that sell items in wholesale at a discounted price for licensed *cuentapropistas*. This also suggests that the rental market is dependent upon more effective supply chain management, which could be improved by further fostering the development of more private cooperatives that can sell many of these items.

One interesting on-going development in the short-term rental market is the emergence of *gestores de turismo*, or professional intermediaries that provide business-improving services to landlords. Such services include creating and maintaining the rental listing online, with professional photos and carefully curated advertisements of the property to make them more appealing, record monetary transactions, and answer inquiries from potential renters. These intermediaries, however, require reliable access to high-speed internet to perform such services, which is typically out of reach for the Cuban population. Thus, many of these intermediaries work in state-owned enterprises that have high-speed internet, and perform tasks pertaining to the short-term rental market along with the full-time tasks required by their state employer. This is a risky endeavor since it is a fireable offense in these state-owned companies.

Long-term landlords are not affected by the shortcomings or benefits of the economic linkages that are inherent in the short-term rental markets, since they designate their tenants with the responsibility of maintaining their rental units when low-cost repairs are required. Daily supplies are also the sole responsibility of the tenants.

### **Conclusion**

The findings from this research that the recent economic reforms regarding rental housing in Cuba need further improvement if they want to address the dual goals of increasing the number of available housing units through a more efficient use of existing units and increase household wealth through self-employment and entrepreneurship. The emerging short-term rentals for foreigners has had an adverse effect over the affordability of long-term rentals for Cuban nationals, although this should be studied in greater detail. This suggests that, despite it mostly being a statist economy, the reforms in Cuba have not left it immune to the controversy resulting from short-term rentals in the sharing economy observed in market-based countries. The analysis could greatly benefit from more observations as these markets mature.

The interviews would suggest that the short-term rentals to foreigners and long-term rentals to Cuban nationals are different non-competing markets. The price of market entry is different among these markets, as are the regulatory requirements and the economic linkages that sustain each sector. It is clear that short-term renters tend to rely more heavily on social and monetary remittances to ensure market entry. However, given that both markets deal with the same durable and immutable goods, i.e. housing units or rooms, it is reasonable to conclude that these markets are linked. One unit that is offered in one market is a unit that is no longer available in the other, resulting in supply constraints that can lead to price increases. Indeed, the regression analysis seems to support this claim, albeit with a limited number of observations and control variables.

The situation could be amended if policies are enacted that can simultaneously marginally disincentivize landlords from opting for short-term rentals to foreigners and incentivize using existing units for long-term rentals for Cuban nationals. One possibility is to ease the transition between self-employment licenses for rental to foreigners, to self-employment licenses for rentals to Cuban nationals in those cases where short-term rentals for foreigners does not result in successful endeavors for households. Further fieldwork and analysis for this research project would be geared towards identifying a policy that could achieve such goals.

Nonetheless, it is reasonable to expect that such a tradeoff between short- and long-term rental markets in Havana will not remain static or permanent. It is possible that if the short-term rental market draws in more income, that increase in income could in the long-run lead to construction of larger quantities of both short- and long-term rentals. Indeed, many of the interviewees suggested that the main obstacle to opting to rent long-term to Cuban nationals was the low revenue expectations from this market. Although the reforms are too recent to determine if such a situation is taking place, longer-term research can shed light on this possibility.

The experiences shared in the interviews to landlords in Havana point to institutional voids stemming from the reforms that have resulted in significantly unequal opportunities for market entry in the rental business. Most of these voids result from the need to further improve access to funding and credit for landlords. They also result from insufficient consideration for the economic linkages that are important for landlords to sustain their rental businesses. Thus, from these observations, the interviews seem to suggest that economic reforms should be geared towards: (1) making micro-loans available either through the local state-owned banks or through financial cooperatives, (2) allow the creation of state or collectively-owned wholesale stores that sell supplies to self-employed landlords at a discounted price, and (3) allow the creation of small supply stores through self-employment as way to reduce price-gouging through the informal market. These policies require further analysis to determine how well they would address the issues stemming from economic linkages. Additional fieldwork and data analysis can better inform if such policies identified by the interviewees are viable for Cuba's context.

What this study points towards is that addressing housing supply constraints and wealth creation by formalizing land markets and fostering renting through micro-entrepreneurship, in the context of a globalized economy and increasingly digitalized platform markets, can result in conflicting goals. By leaving institutional voids unattended, the wedge between short-term and long-term rental landlords is defined by the social ties that determine the possibilities of market entry, resulting in greater economic and social inequities that reduce the possibilities of short-to-long term rental turnovers as time goes by. The possibility of optimizing existing housing stocks in constrained markets through increased rental supply is hindered by disruptive technologies that

provide access to wealthier possibilities in tourism, albeit in a scenario where short-term rental landlords not only compete among themselves, but with offerings in other cities that are comparably attractive for tourists. This suggests that Havana, far from a completely sui-generis case, provides comparable lessons for cities in the Global South that see economic opportunity in the intersection between property regularization of informal communities and greater access to multisided platforms like Airbnb.

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