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Making Room for Renters: Understanding and Supporting Rental Markets in the Global South

Evidence from Dar es Salaam, Tanzania

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Abstract

Many people in the global south access housing through informal rental markets, but remarkably little is known about how these markets work or the quality of the accommodations on offer. This paper draws on a unique new data set to analyze the informal rental market in a case study city: Dar es Salaam, Tanzania. The picture that emerges is one of a large, anonymous market in which there are clear price premiums for accommodation and neighborhood quality. At the same time, however, demand for quality housing outstrips supply, confining even upper-income households to slum conditions. The findings shed light on market dynamics that shape access to adequate housing in Dar es Salaam and other cities across the world. The paper closes by drawing on these insights to make recommendations to improve existing urban development policies such as slum upgrading, as well as to develop new approaches to rental housing that can materially improve living conditions in the rapidly expanding cities of the Global South.

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Making Room for Renters: Understanding and Supporting Rental Markets in the Global South – Evidence from Dar es Salaam, Tanzania

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Introduction

Improving the quality of housing in cities in the global south is a pressing policy priority. More than one billion people currently live in conditions that meet UN Habitat's definition of 'slum' – their housing is deprived in terms of either basic services, quality of building materials or living space (UN-HABITAT 2016). The urgency of improving this situation – already central to the Millennium Development Goals and the Sustainable Development Goals – has been thrown into even sharper relief by the current global pandemic, as these housing conditions render vital preventative measures such as social distancing and handwashing particularly difficult.

Many slum households are renters. Although we lack reliable comparative international data for precise estimates, we know that informal renting is widespread in Sub-Saharan African cities, where housing deprivations are so severe that approximately 60 percent of urban households live in slum conditions (UN-HABITAT 2016; World Bank 2015). The number of renters is also set to increase as cities grow. This is because renting is a common form of tenure among two major demographic groups that drive urban growth: new migrants and young people forming separate households (Gilbert 2016; World Bank 2015).

Despite this, there are very few examples of policies that aim to improve the quality of rental housing in the Global South. Instead, national and international policy responses are disproportionately focused on homeownership (Gilbert 2016; Rakodi 1995; Peppercorn and Taffin 2013). This is problematic for two main reasons. First, it leaves the challenge of low-quality rental housing unaddressed, confining those who either prefer or need to rent to substandard conditions; a problem that has been evocatively termed 'blindness to the obvious' by Alan Gilbert (Gilbert 2008). Second, renters may be inadvertently harmed by existing projects as potential knock-on effects of the interventions onto rental markets are not acknowledged in project design.

This paper thus aims to add to the literature on rental markets with insight from a new data set that provides unprecedented level of detail on the rental market in a case study city: Dar es Salaam, Tanzania. Like many cities in the region, renting has long been thought to play an important role in urban housing strategies in Dar es Salaam, and in this paper, we show that 57 percent of households in the city are tenants. Yet rental housing remains 'invisible' in policy terms as it is unregulated and largely ignored in official policy (Cadstedt 2006).

The paper is structured in four sections. After the data overview that follows this introduction, Section I summarizes key trends in the literature on renting in Sub-Saharan Africa. This section discusses a number of influential studies of rental markets in specific slum areas of cities, as well as a wide range of literature that explores landlord and tenant experiences of renting in cities. It highlights, however, that data constraints have meant that it is difficult to generalize insights from these studies, and thus underlines the need for broader rental market analysis.

Section II provides a descriptive snapshot of the rental market in Dar es Salaam, before Section III probes the determinants of rental prices. The analysis reveals a large and dynamic rental market that is concentrated in centrally located areas of the city. Tenants are relatively young and affluent, and the returns on building rental accommodation are high. Hedonic price analysis reveals clear rental price premiums for all dimensions of rental quality, indicating that there are strong financial incentives for landlords to improve the quality of accommodation on offer. Yet the analysis also highlights that overall quality remains low, with the majority of renters (87 percent) living in slum conditions. In particular, the findings highlight that institutional constraints on basic service delivery may limit the extent to which landlords can improve and expand the accommodation on offer – putting a literal 'ceiling' on both the quantity and quality of rental accommodation in the city.

The final section of this paper concludes with a discussion of implications for policy in both Dar es Salaam and across the world. We draw on insights from the data to underline the importance of developing policies to improve rental housing quality as well as those to facilitate access to homeownership. We also highlight that misconceptions about who renters are and why they live in rental housing can undermine the effectiveness of existing rental policies such as slum upgrading. The paper closes with a call for improved analysis of the welfare effects of existing policies to include impacts on renters into policy design.

Overview of the data

This paper is part of a series of papers on the housing market in Dar es Salaam, Tanzania. It focuses on the dynamics of the rental market in the city, while the accompanying papers aim to unpack the relationship between housing quality and formality of tenure in owner occupied housing (Panman and Lozano-Gracia), as well as to analyze the role informal institutions play in shaping both ownership and rental markets (Panman, forthcoming).

Dar es Salaam is a particularly interesting case study for the analysis of housing markets. It has a population of more than five million people, is one of the fastest growing cities in Sub-Saharan Africa, and is often regarded as an exemplar of urbanization in the region (Brennan and Burton 2007; Collier and Jones 2017). Housing in the city is predominantly low-rise and low-quality. Sprawling out over a land area of 1,393 km^2, housing is so inadequate that it is one of a number of cities in the region classified as a 'slum city' (UN-HABITAT 2008, 113).

As with many cities in the region, rental tenure is both widespread and informal. There is no formal legal framework for private sector rental housing, and no official data on renting since arrangements are regarded as a 'private matter' between landlords and tenants (Cadstedt 2010).[2] The only exception to this is public rental housing provided by the National Housing Corporation (NHC). This housing makes up a tiny fraction of units in Dar es Salaam, and in the last decades the mission of the NHC has been reoriented towards the promotion of homeownership (Komu 2011; World Bank 2010).

The study of rental housing in Dar es Salaam and indeed across the Global South has been curtailed by lack of reliable data. This is both because there is a lack of official data on rental markets and because household surveys generally do not direct questions towards understanding the rental experience. Indeed, these surveys may underestimate the extent of renting because many tenants rent one or two rooms from an owner-occupier, and are thus often 'hidden' within these households (World Bank 2016a, 2015; Peppercorn and Taffin 2013). Landlords themselves may also wish to hide the extent of their rental activities from authorities, either to avoid tax payments or fines for lack of compliance with official housing standards (Gilbert 2008).

In order to analyze the rental market in Dar es Salaam it was therefore necessary to develop a new survey instrument. We designed the Measuring Living Standards in Cities (MLSC) surveys to address these and other issues specific to collecting reliable data on living conditions in urban areas

[2] Rental property is also informal in the sense that it is likely that the majority of this housing lacks official documentation of ownership; although, as we discuss in an accompanying paper, formality is not a good predictor of insecurity or housing quality as commonly anticipated (Panman and Lozano-Gracia, under review).

(World Bank 2016a). The survey was piloted in Dar es Salaam between November 2014 and February 2015, covering more than 2,000 households.

As has been described in greater detail elsewhere, the survey sample was stratified to be representative for the city as a whole as well as for four different areas within the city, including between visibly 'regular' and 'irregular' (or 'slum like') areas (World Bank 2016a; Antos, Lall, and Gracia 2016). As such, data can be used to make inferences about the population as whole as well as sub-populations living in concentric circles from the periphery, the 'middle', and the 'center' of the city. Since most irregular areas were concentrated in the center, this central stratum was then subdivided into 'regular' and 'irregular' areas.

The survey design incorporated four main innovations to capture dimensions of renter living conditions more effectively. First, to ensure that renter households were not 'lost' within owner-occupied households, the presence of tenant households was recorded at listing stage. In the second stage of sampling households were then randomly selected for interview from within these listed Enumeration Areas.

Second, we collected information on rental values, ensuring that these values consistently excluded utility payments and identified where rent was subsidized. This also allowed us to make a distinction between tenants that pay rent and those who are not counted as part of the owner's household but live rent-free. This is important because these two groups have been conflated in past surveys, leading to a distorted image of how the market functions (Rakodi 1995; UN-HABITAT and Cities Alliance 2011).

As indicated below, in Dar es Salaam 57 percent of households are renters who pay regular rents, and within this group, less than 5 percent say their rent is subsidized (of which, more than half say the support is from a relative). In addition to renters, 7 percent of households say they receive their accommodation for free. Rent-paying tenants are the focus on the analysis in this paper.

We analyze reported rental values in light of both characteristics of tenants and of broader housing amenities. Table 1 summarizes the variables used in the hedonic price analysis in section III. As indicated in the table, we were able to include variables that capture key attributes of the accommodation itself – such as the quality of the materials from which it is built, the type of basic services it has, as well as the number of rooms – as well as neighborhood characteristics, including both in terms of distance from the city center and whether the area was visibly irregular (as identified by satellite imagery).

Third, the survey piloted a module to explore households' residential histories. Researchers highlighted more than 20 years ago that we know very little about the relative significance of different factors that prompt renters to move house in the Global South (Rakodi 1995). This remains true today, as this information is not captured in conventional surveys and is even partly absent in panel surveys since residential mobility is a common cause of attrition.

Households in the MLSC survey were therefore asked to recall all the places they had lived in Dar es Salam and their motivation for moving.[3] As this was a pilot module based on recall, caution is needed in interpreting the data. It likely suffers both from recall biases and respondent fatigue, which may dampen the total number of moves recorded (World Bank 2016a). It nonetheless

[3] For migrants, all houses until the house they lived in prior to migrating were collected. For those born in Dar, all houses were collected.

provides useful insight on residential mobility and insight on reasons for moving in a subset of cases, which will be discussed further below.[4]

Finally, the MLSC questionnaire also collected information on landlords. While it was not possible in the structure of the survey to interview landlords of the specific renters in the survey, we were able to explore how common it was for a household to rent out either part of their own property or another property, the purpose they rented property out for, and the income that they earned from this activity.

[4] In total, 4,124 past house observations were collected. Of these, 45 percent were either the house that the respondent was born in or the house they lived in immediately prior to migrating to Dar es Salaam. Of the remaining 2,258 houses, the respondents provided a reason for moving out of this past house in 1,818 cases. Although data was examined for patterns in the characteristics of households that provided more detailed responses, it is not possible to definitively state the potential direction of biases that emerge from only having a reduced set of answers. The data must therefore be interpreted with caution.

Table 1: Description of Variables

Name	Definition	Obs.	Mean	Med.	S.D.	Min.	Max
Ln_rent	Log of annual rent in USD	1050	5.20	5.10	0.79	2.39	8.09
Contract	Dummy (0/1) if household has written contract	1057	0.79		0.41	0	1
House	Dummy (0/1) if free standing house	1057	0.59		0.49	0	1
Mains	Dummy (0/1) if household is connected to either piped water or sewage system	1057	0.08		0.27	0	1
Electricity	Dummy (0/1) if household is supplied electricity by the utility company	1057	0.70		0.46	0	1
Garbage	Dummy (0/1) if household garbage is collected by the municipality	1056	0.70		0.46	0	1
Concrete	Number of roof, floor, and/or roof that is made of concrete.						
1		1057	0.03		0.16	0	1
2		1057	0.92		0.27	0	1
3		1057	0.04		0.20	0	1
Rooms	The number of rooms the household occupies	1056	1.87	1.00	1.54	0	13
km_cbd	Measure of distance from the city center, rounded to 0.5 kilometers.	1050	11.12	8.50	7.65	0	33
Irregular	Dummy (0/1) if the house is located in an 'irregular' EA, as identified by satellite imagery	1057	0.46		0.50	0	1
Years_lived	Years lived in current property	1039	7.36	4.00	7.85	1	53

Note: Data is not survey weighted. Payment for utilities is not included in rent.

Section I: Rental Housing in Sub-Saharan Africa, Theory and Practice

All over the world, governments have invested considerable resources into supporting home ownership, arguably influenced by the idea that homeownership is an important asset for households that can have knock-on benefits for human capital development, community engagement, and even social and political stability (Blanco and Razu 2019). Despite this, renting remains an important form of tenure in urban areas. At any given time approximately one-fifth of the world's population – more than one billion people – lives in rented accommodation (Blanco and Razu 2019; Gilbert 2016).

Research in the United States and Europe explains demand for rental housing in terms of the household preferences and wealth (Gyourko 2002). Put simply, housing decisions are modeled as a function of investment choices – since housing is an asset – as well as more complex socio-demographic considerations. The latter are often called life-cycle or life-course factors, since at certain points of life people may value the capacity to relocate for jobs, education, or changing family circumstances than at others and thus be drawn to rental housing (Scanlon and Whitehead 2012; Clark 2013). Considerable policy and research debate centers on the extent to which these choices, and as a result the quantity and quality of rental housing available in the market, are shaped by regulation and taxation (Whitehead 1999; Whitehead et al. 2012).

In contrast, the anlytical lens applied to rental housing in the Global South tends to be different. Conventional wisdom casts renters as short-term migrants who wish to minimize housing expenditure, too poor to invest in housing, or subject to exploitation by landlords (Kumar 2011; Campbell 2013; Gilbert 2008). In part, this may reflect the legacy of highly influential research in Latin American cities in the 1960s and 1970s which cast self-help housing as a pathway out of poverty (e.g. Turner 1968), and which includes work that distinguished between inner-city 'slums of dispair' dominated by tenancy and more peripheral 'slums of hope' where households were able to improve their conditions by building homes for themselves (Mukhija 2012).

In the 1980s and 1990s there were a series of papers that looked at rental markets more broadly, uncovering factors that shape tenure choices and exploring the role of regulation in shaping these markets (for an overview, see Malpezzi 1999). This included a handful of papers on the rental market in African cities, such as research in Bamako (Mali) – which found evidence that renting was preferable to ownership in peripheral informal settlements (Van Lindert and Van Westen 1991) – and analysis in Ibadan (Nigeria) and in various cities in Côte d'Ivoire, both of which found mobility to be a strong predictor of tenure (Arimah 1997; Grootaert and Dubois 1988). The usefulness of these insights to inform policy, however, was arguably limited by the reliability and comparability of the underlying data used (Gulyani, Bassett, and Talukdar 2012).

Research into the impact of regulation in shaping the rental market in this context has faced similar changes. There has been considerable consensus against regulations such as rent controls in international development housing policy since the late 1980s (World Bank 1993; UN-HABITAT 2003). Yet the empirical literature into the effect of regulations on the rental market has been limited. This likely reflects the large portion of rental transactions that take place informally; as such, while these regulations exist in the statute books, they are a form of 'pretence in action' that does not constrain many transactions in practice (Gilbert 2016).

Some of the most important insights on informal rental markets in Sub-Saharan Africa have instead emerged from research drawing on detailed household surveys of slums. The best-researched case is Nairobi, Kenya. Drawing on surveys of areas like Kibera as well as other slum neighborhoods identified by the Kenyan government, a series of papers describe informal rental markets underpinned by powerful interests – often described as slumlords, whose position is supported by either ethnic based gang violence or local political patronage – who are able to extort high rents, resulting in comparatively high prices relative to the quality of accommodation offered (Marx, Stoker, and Suri 2013, 2019; Gulyani and Talukdar 2008; Gulyani, Bassett, and Talukdar 2012).

These papers propose a number of hypotheses about dynamics that keep rental housing quality low in these areas, despite market incentives that higher quality units command higher rents. For example, Marx et al. argue that high rents may result in investment inertia, whereby poor renters are unable to save money to improve their conditions, and thus become 'trapped' in this accommodation over generations (Marx, Stoker, and Suri 2013). In contrast, Gulyani and Talkudar suggest that absentee landlords may feel less pressure to maintain housing quality, and that the very high proportion of renters, as well as the relatively short time they live in a given place compared with owners, weakens tenant incentives for both housing and neighborhood investments (Gulyani and Talukdar 2008). This hypothesis is further developed through a comparative study of living conditions across slum areas in Nairobi and Dakar, which finds that tenants in both places face substantially worse living conditions than owner-occupiers, but that quality standards for renters are worse in Nairobi than in Dakar – where both the proportion and mobility rates of renters are lower (Gulyani, Bassett, and Talukdar 2012).

Insights from this literature align well with policy focus on homeownership in the Global South. They can be interpreted to support the case that effective policy to increase homeownership would improve housing quality for individual renters and may even have positive impacts on overall neighborhood quality. Yet there is some uncertainty about the extent to which these findings are generalizable to informal rental markets in Sub-Saharan Africa outside these specific slum areas.

Indeed, recent efforts to collect better data on urban areas in Kenya reveal that 64 percent of rental households in *non-slum areas* are informal and that most of these households live in conditions that are also deprived in terms of basic services (World Bank 2016b; Talukdar 2018). While recent analysis of this data does reveal systematic differences in rental housing across slum and non-slum areas of the city – providing empirical support for the 'low-quality high-price' problem of slum rental housing (Talukdar 2018) – it raises new questions about what dynamics drive low-quality in the informal rental market in other areas of the city.

Indeed, informal rental market conditions outside slum areas appear to differ from slum areas in important ways. For one, researchers highlight that the range of informal housing is wide – ranging from shacks such as those found in Kibera, to 8 story tenancy blocks where tenants rent a single room and share one bathroom per floor (Huchzermeyer 2007; Mwau et al. 2019). For another, most landlords appear to have a similar socio-economic status to tenants (World Bank 2016b).

Indeed, insights from research into the livelihoods of the urban poor in Sub-Saharan Africa more broadly suggests that slumlords are rare. This is a rich and wide-ranging literature, that draws on largely qualitative analysis to understand housing from the perspective of the urban poor. Insights from this work are diverse, yet the picture that emerges is of landlords who often live in the same compound as their tenants and who are poor themselves (Gilbert 2016). This includes research from secondary towns in Tanzania and Kenya, as well as studies in Accra, Ghana, which highlight the symbiotic relationship between tenants and landlords who are often of similar socio-economic status (Cadstedt 2010; Smith 2017; Arku, Luginaah, and Mkandawire 2012), as well as earlier work in Botswana which emphasised the importance of landlordism as an income generation strategy for women with few other options (Datta 1995).

This suggests that lack of investment in quality may come from different sources than those hypothesized in the case of absentee slumlords; for example, as a study in Indonesia proposes, credit constraints on landlords to finance improvements (Hoffman et al. 1991). Moreover, even though livelihoods research is focused on the urban poor, the image that emerges of tenants does not entirely conform to the idea of households that do not invest in the quality of their living conditions. For example, research into backyard rental arrangements in South Africa highlights that renters seek out higher quality of services available than could be found in cheaper housing or squatter settlements (Crankshaw, Gilbert, and Morris 2000; Turok and Borel-Saladin 2016; Lemanski 2009). Similarly, tenants in Tanzania, Kenya and Ghanian cities are depicted as pressuring landlords to maintain quality and, in some instances, invest in improving the quality of their rented accommodation themselves (Cadstedt 2010; Smith 2017; Arku, Luginaah, and Mkandawire 2012).

There is thus a need for research to probe other factors that may constrain the development of quality rental housing in different cities across the world. We must drill-down into the dynamics of specific rental markets to identify the most pressing constraints on housing quality in a given context. This includes identifying potential constraints on supply of rental housing as well as demand for quality accommodation. Filling these knowledge gaps is a vital first step to supporting evidence-based policy making that can improve living conditions of people living in rental housing.

Section II: Snapshot of the Rental Market in Dar es Salaam

Most households in Dar es Salaam rent their accommodation. The MLSC survey reveals that more than half (57 percent) of households in Dar s Salaam are tenants. Although, as discussed above, comparable data is limited, recent surveys of urban areas indicate that this compares to 91 percent in Nairobi, 54 percent in urban Ethiopia, and 41 percent in urban Ghana (World Bank 2016b, 2015).

The majority of renter households in Dar es Salaam describe their accommodation as being in either a free-standing or attached house (59 and 39 percent respectively). Less than 2 percent of renter households live in flats or low-rise apartments, and the value of rents recorded for these apartments indicates that they do not have elevators, since this is a feature that sets high-income rental properties apart (CPCS 2015).

Most tenant households (80 percent) live in one or two rooms in a shared house. It is likely that the landlord is resident in most cases, as most landlords live on the same plot as their tenants. Of the 811 owner-occupiers interviewed in the MLSC survey 32 percent rent out part of their property for residential use and are thus counted as live-in landlords. On average, these live-in landlords rent out four rooms in their property (median, 3). Only a tiny fraction (31 respondents) said that they rented a separate property out to renters.

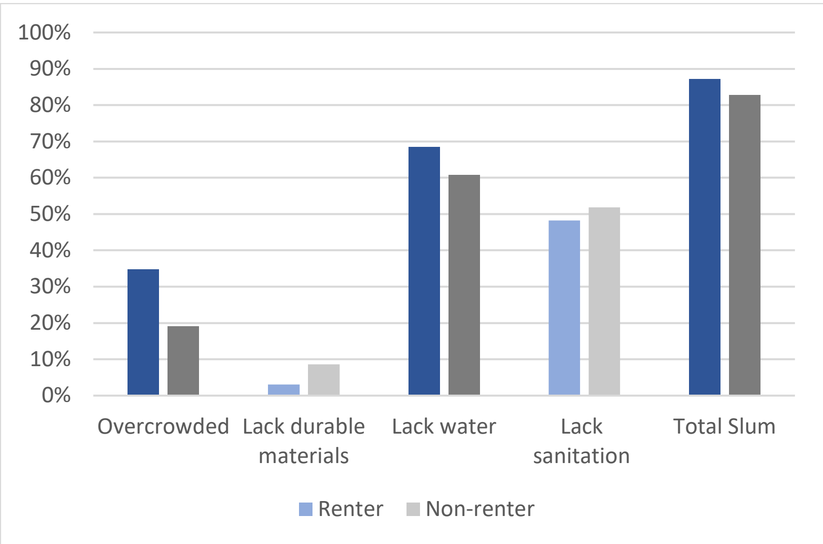
This description of the housing stock is in keeping with the perception of renting in many East African cities, where rental housing is thought to take the form of rooms rented a 'Swahili' form house (Cadstedt 2010). These houses are single-story buildings of six rooms, organized around a central courtyard. Cooking is done outside, in a shared room, or on a stove in the rented rooms (CPCS 2015; Sheuya 2007). Indeed, historical accounts suggest that this type of rental arrangement has been the dominant form of tenure in Dar es Salaam since the 1920s (Tsurata 2007; Brennan and Burton 2007; Kiduanga 2003).

Despite the informal nature of the market, 79 percent of tenants said they have a contract with their landlord. The remaining 21 percent either had a verbal contract, or no contract at all. Written contracts appear to be a relatively new phenomenon, as a qualitative study of rental housing in specific areas of Dar es Salaam in the 1990s found that written contracts where rare, and that most landlords and tenants had some form of pre-existing relationship (Kiduanga 2003). This aligns with evidence on informal rental contracts in Colombia, which also finds written contracts are more common where renters and landlords do not have any familial relationship (Restrepo Cadavid 2011). Indeed, in Dar es Salaam, the rising popularity of contracts may also be part of an evolving informal institutional framework for the rental market that has arisen as these transactions have become more anonymous, with increased reliance on informal brokers (Panman 2020).

Overall, the quality of rental housing is low: 87 percent of renters classify as slum households. This percentage is slightly higher than non-renters (83 percent, significant at 0.01 in a t-test), and renters differ from non-renter households in the type of slum deprivations they suffer. In particular, as indicated in Figure 1, a larger portion of renters lack improved water and live in overcrowded conditions than non-renter households.

Deprivation in terms of sanitation is similar across the two groups, but, given the concentration of renters in densely packed areas of the city, this statistic may bely important deprivations in sanitary living conditions. The majority of renters (91 percent) rely on pit latrines, and 86 percent of renters share this toilet with other households (compared with only 34 percent of non-renters). While these latrines technically meet conditions of 'improved' sanitation, they are not necessarily appropriate means of waste disposal in the dense urban areas where most renters live. This is because tiny pathways between houses render them inaccessible to waste removal trucks, leaving households with little choice but to resort to unsanitary means of emptying latrines; as well as the susceptibility of these latrines to flooding in the bi-annual rainy seasons, thus increasing risk of serious health issues (UN-HABITAT 2009).

Figure 1: Breakdown of Slum Deprivation by Rental Tenure



Note: Data are survey weighted. Darker shaded bars denote differences that are significant at 0.01 level in a t-test.

As discussed above, renters in OECD countries tend to be younger than owner-occupiers, a factor that is often attributed to both wealth and preferences for flexible housing arrangements at different stages of life. The MLSC data shows that renters tend to be younger in Dar es Salaam as well. On average, renter households in Dar es Salaam have younger household heads (mean of 34 years, compared with 47/48) than owner-occupiers and live-in landlords.

In Dar es Salaam, both renters and landlords are found at every level of the socio-economic spectrum. On average, however, renters have higher consumption expenditures than owner-occupiers. They report higher per capita consumption expenditures on average, and more of them have employed household heads (71 percent, compared to 53 percent). Furthermore, among those that are employed, a larger portion of renters are salaried (52 percent, and 37 percent respectively). Higher income among renters has been noted in a number of other cities across the global south (Rakodi 1995), including in research in urban Côte d'Ivoire in the 1990s which attributed it to differences in education and job types across generations (Grootaert and Dubois 1988).

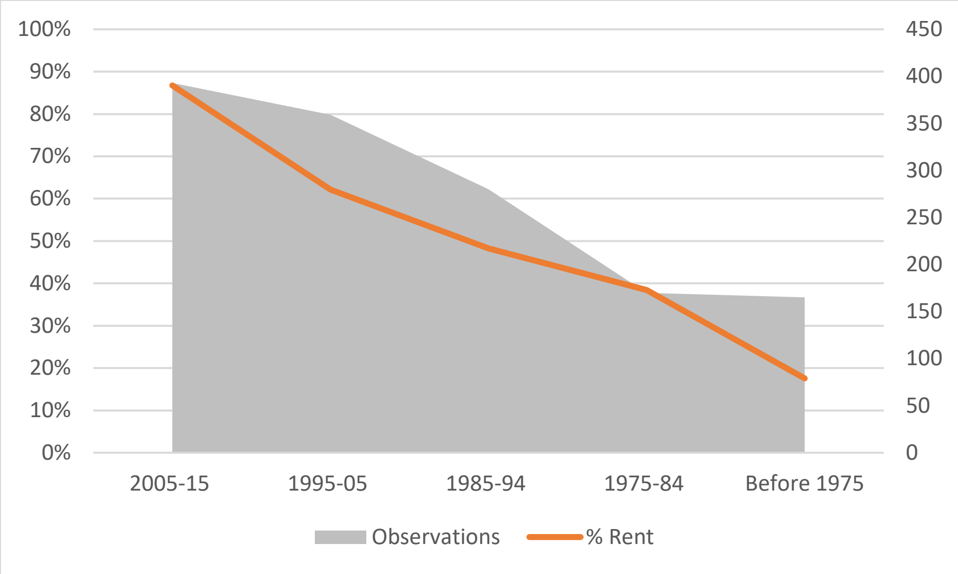
It is important to note that the finding that on average, renters have higher consumption expenditures than landlords does not mean that rental payments are not a financial burden, as will be discussed further below. In addition to this, although renters may have higher disposable income, landlords are wealthier by other measures. Specifically, landlords on average value the assets they own at 2 million Tsh, compared with 1 million for renters (as we might expect given that they tend to be older than renters).

It is likely that many renters ultimately aim to transition into home-ownership through incremental building. Overall, 22 percent of renters surveyed say they own a property somewhere else. Just under half said this property was located in Dar es Salaam and described it as either vacant or residential – suggesting that these properties are predominantly plots under construction. Previous research in Ghana has highlighted that these ongoing building projects can cause households to cut back on consumption or rental expenditure (Abedi et al. 2017). In Dar es Salaam, however, renters who own another property spend 20 percent *more* on rent than renters who do not own other property (significant at 0.01).

Similarly, although there is evidence to support the notion that renting is the tenure choice of migrants it is not clear that this results in lower housing expenditures. The majority of household heads in Dar es Salaam were not born in the city (79 percent). They make up a similar portion of all the renters in the city (82 percent), but, as indicated in Figure 2, if we break this down by period in which they first migrated to the city, we can see that this decreases with length of time spent in the city. The majority (87 percent) of migrants who arrived in the city in the five years prior to the survey rent, but the proportion drops substantially the longer they have lived in the city. Only 18 percent of those who migrated before 1975 are still renting.

The high proportion of new migrants among renters lends some credence to the idea that rental tenure is a particularly important form of accommodation for new arrivals in the city. Yet, it should also be noted that in contrast to the idea that households committed to preserving economic ties with their rural homeland will under-invest in their urban living conditions, there is a weak but positive correlation between the amount that households spend on rent and remittances each month (0.24).

Figure 2: Proportion of Migrants Renting by Period of Migration



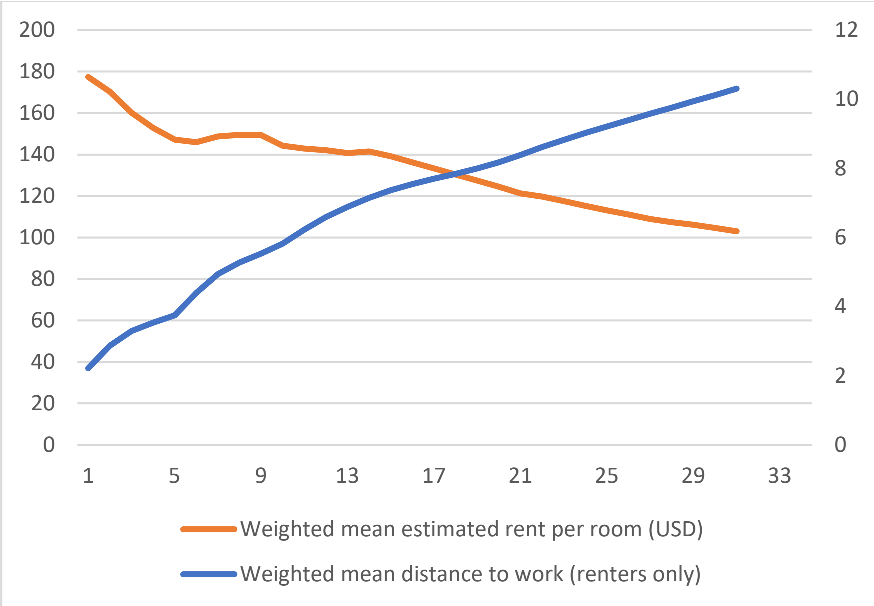
Note: Total observations indicated in shaded area and charted on secondary axis. Data are survey weighted.

As might be expected, most renters live centrally. Nearly three-quarters of all renters live in the center of the city (regular and irregular areas combined). This compares to just under 20 percent in the 'consolidated' ring of the city, and less than 3 percent live in the periphery. Rental prices are also highest in the center of the city.

Overall, reported rents ranged from 10,000 to 400,000 Tanzanian shillings per month. This is approximately equivalent to a range from less than US$5 to nearly US$200. The median rent is highest in central, regular settlement areas of the city at TSH30,000 per month. In central irregular areas and in the consolidated core of the city the median rent is TSH25,000, and this number falls to TSH20,000 in the periphery. The trend of rents against distance from the city center is plotted in Figure 3, which further shows that the distance that working household heads report that they travel to work declines with distance. This suggests that renters trade off higher rental prices for reduced commuting times.

Rents are paid in advance. Qualitative evidence indicates that tenants often pay 6 months of rent in advance, ranging between one year ahead for the best quality housing to one month in areas where there is known to be high risk of flooding (Panman 2020). Exposure to hazards such as flooding is also thought to result in lower rental values, but we lack clear evidence of the size of this effect. A recent study failed to find any quantitative relationship between flood risk and the amount of rent paid, but the study also found that areas affected by flooding vary considerably from one rainy season to the next, suggesting that it may be difficult for the market to price these risks effectively (Erman et al. 2019).

Figure 3: Rental Values and Distance to work, by Distance to City Centre



Weighted average of estimate rental prices and distance to work of household head. Observations for rental values: 1020; observations for distance to work: 995

Are rental prices affordable? There is no clear methodology for establishing what proportion of income is 'affordable'. Some countries use a 'rule of thumb', such as 25% and 30% of income, used in the United Kingdom and the United States, respectively (UN-HABITAT 2003a). A crude comparison may lead us to conclude that rent is affordable in Dar es Salaam. On average in Dar es Salaam renter households pay rent equivalent to about 15 percent of their consumption expenditures.[5] Yet we must be cautious in taking this approach to assess affordability: for one, it is sensitive to different measures of income; for another, it must be contextualized in the overall living standards of the renters. For example, if total household expenditures are below a given poverty line, the idea that they can afford to pay more makes little sense regardless of the proportion spent on rent.

In Table 2 we thus look at rental payments by quintile of consumption expenditures. Renters in the bottom 20 percent of consumption expenditure spend an average of approximately 31,000 TSh per month, or the equivalent of 19 percent of their consumption expenditures. If they pay 6 months in advance, they must be able to save and provide landlords with a payment equivalent to 114 percent of their total monthly consumption expenditure whenever rent is due. Given high levels of informality and precarity in work in the city, as well lack of access to formal finance, it is likely that payment of rent is a considerable source of financial stress to many of these households. The poorest may be forced into choosing accommodation in hazardous areas where advance payment periods are lowest.

Higher income households spend a smaller proportion of their income on rent than lower income households, as is common across the world (Mayo, Malpezzi, and Gross 1986; UN-HABITAT 2003). It is notable, however, that despite this, many higher-income renters still live in slum conditions. As indicated in Table 2, households in the top quintile of consumption spend 150 percent more on rent than those in the bottom quintile but many nonetheless suffer from key slum deprivations. More than half (56 percent) of households in the top quintile of consumption expenditure lack improved water, 40 percent lack improved sanitation, and the vast

[5] Similarly, recent research finds that on average renters in Kenyan cities spend 20 percent of their income on rent (World Bank 2016b).

majority continue to share these facilities (77 percent). Improvements in quality in terms of slum deprivations are restricted to adequate space: the number that qualify as living in overcrowded rooms falls to 12 percent.

Table 2: Monthly Rent and Slum Deprivations by Total Household Consumption Expenditure Quintiles

Quintile*	Rent (mean, monthly)	Rent: Income **	Lack Water	Lack sanitation	Share toilet	Over-crowded
1	30751	19%	73%	53%	92%	48%
	(1625)	(1%)	(3%)	(4%)	(2%)	(4%)
2	36391	13%	71%	49%	86%	46%
	(2883)	(1%)	(3%)	(4%)	(3%)	(4%)
3	40259	12%	68%	49%	87%	37%
	(3455)	(1%)	(3%)	(4%)	(2%)	(4%)
4	48012	12%	75%	51%	85%	30%
	(3870)	(1%)	(3%)	(4%)	(3%)	(3%)
5	77126	12%	56%	40%	77%	12%
	(6515)	(1%)	(4%)	(4%)	(3%)	(2%)

Note: Standard errors in parenthesis. Observations: 1050
** per capita, adult equivalent, renters only*
*** mean monthly rent: mean household consumption expenditure within each per capita quintile*

Is rental housing profitable? Most rental housing in Dar es Salaam is produced through incremental building, as is likely the case in many developing country cities (Gilbert 2016; Peppercorn and Taffin 2013). It is not straightforward to estimate the costs of incremental building – even property owners find it difficult to estimate because the building often occurs over a long time period (Sanga and Lucian 2016; Precht 2005).

Yet we can sketch the return on housing investment. A landlord who adds a room to their existing property can reasonably expect to earn 25,000 Tsh per month for this room, or 650,000 Tsh in just over 2 years (26 months). This income would comfortably cover the costs of the basic materials needed to build a room: nine bags of cement (90,000),[6] 200 sand-cement blocks (205,000),[7] and 10 standard sheets of corrugated iron for roofing (200,000).[8] Even if 30 percent is added for labor (148,500 Tsh), the total costs would reach 643,500 Tsh.[9] While these construction costs likely

[6] CAHF assumes that 35-40 bags are needed for a 40m2 house of bricks and mortar. 9 bags are therefore estimated to be sufficient for a 10m2 room. According to their 2017 report, a bag of cement in Dar es Salaam costs 4.5 dollars (approximately 10,000 Tsh)

[7] Sand cement blocks produced in Dar es Salaam measure 0.23m wide, 0.45m long, and 0.15m high, and cost 900 shillings per unit (Kruse and Torstensson 2011). Locally produced solid cement blocks cost 1,150Tsh each (CPCS 2015). For simplicity we average the two prices.

[8] CAHF estimate that a standard sheet of corrugated iron for roofing costs less than 10 dollars (approx. 20,000). I am assuming 10 sheets. Estimates from suppliers in 2015 indicated that a 'bundle' of iron sheeting cost 165,000 (CPCS 2015).

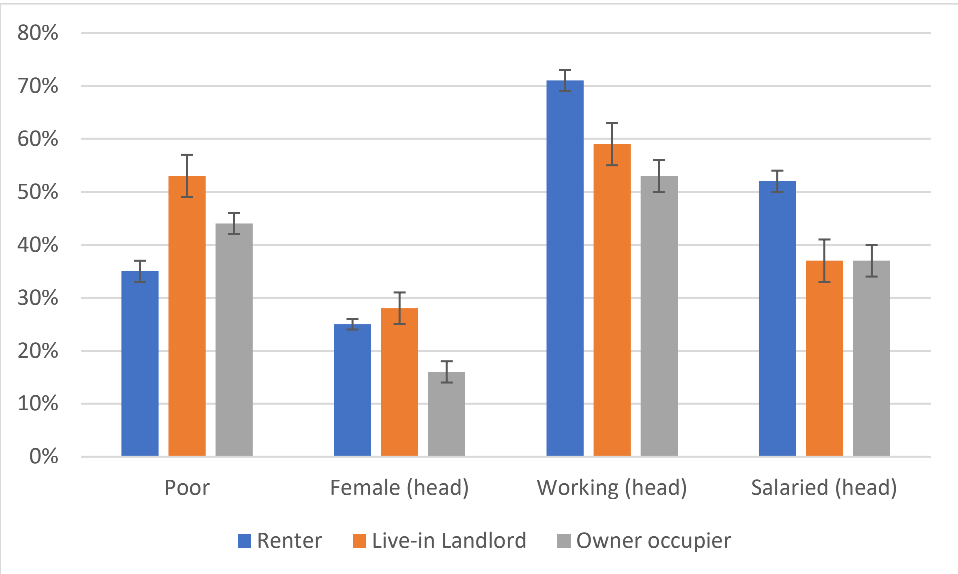
[9] Survey of 90 owners in 1995 showed that on average labor costs for a 6 room house were less than 30 percent of total costs (Wells, Sinda, and Haddar 1998). More recent interviews with semi-skilled workers in Dar es Salaam also

escalate rapidly when basic amenities are included, rental rates also increase dramatically – as will be discussed further below.[10]

These rates of return are almost comparable to those recorded in the slums of Nairobi, where, as discussed above, researchers have described a situation where tenants are 'trapped' in high-price but low-quality housing by exploitative slumlords (Marx, Stoker, and Suri 2013; Gulyani and Talukdar 2008). In this context, estimates suggest that slumlords can recover the investment estimated to be needed to build an additional room in under two years (Gulyani and Talukdar 2008).

Yet the broader context and conditions are very different to Nairobi slums. In Dar es Salaam most landlords live in close proximity to their tenants, and there is no evidence to suggest they draw on the kinds of gang-land tactics to their advantage as described in Nairobi. While exploitative landlords may operate in the city, the general profile of landlords does not fit this profile. They are more likely either renters or owner-occupiers to fall into the bottom 40 percent of the consumption distribution of the city (labeled as 'poor' in Figure 4), are less likely to have other forms of employment, and among those that are, a smaller portion are salaried. Moreover, as Figure 4 also shows, the proportion that are female headed households is almost twice as high as among owner-occupiers. This supports the idea that landlordism is an important livelihood strategy for women, who may otherwise have more limited employment options (Desai and Loftus 2013; UN-HABITAT and Cities Alliance 2011).[11]

Figure 4: Live-in Landlords, Tenants and Owner-Occupiers Compared



indicate that labor costs account for approximately 30% of total construction costs of a 6 room Swahili house (Kruse and Torstensson 2011).

[10] A recent survey of 44 government workers by Sanga and Lucian (2017) found that on average they spent 540,000 Tsh per square meter to build or extend their property. Given the employment status of these survey respondents, it is reasonable to expect that these estimates are indicative of costs of construction of housing in a middle-class area, including basic amenities such as electricity, sanitation, and water. Qualitative evidence suggests rents in these areas are in the region of 100,000 Tsh per month. The cost of a 10m2 room (5.4 million Tsh) can be fully recovered in less than 7 years. In fact, the landlord can expect to have doubled their money within 10 years.

[11] Globally, there is no consistent picture on female landlords. Research from Benin, Kenya and India suggests it is a male dominated area, while studies from Botswana, South Africa, and Mexico indicate that female landlords are relatively common (UN-HABITAT 2003).

Note: Data are survey weighted. Employed means worked for income in last 12 months, salaried is as proportion of those employed.

Moreover, while many renters may aspire to homeownership as an improvement on rental arrangements, we should not assume that renters are 'trapped' in their housing. Renters appear to make active location decisions, moving houses as their needs change. On average, tenants have lived in their current accommodation for 7 years (median 4 years), compared with 18 years for owners (12 median). 40 percent of renters said they may possibly or definitely move in the next three years, compared with only 4 percent of owner-occupiers.

Indeed, renters move for many of the same reasons that renters move in cities all over the world (Clark 2013). Drawing on data from the residential history module, we can see that in 53 percent of moves recorded, the motivation was a life event such as getting married, starting a new school, or a new job. Desire to improve on housing or neighborhood quality accounted for almost a third of all moves: 17 percent to live in a location that was safer, had better transport, or was closer to family or work, while 13 percent cited the desire to improve the quality or size of the house, or to purchase land. Moving house is also a response to negative shocks: in 8.5 percent of cases the move occurred in response to a disaster, eviction, or the need to move to a smaller or cheaper house.

The picture of the rental market that emerges in this snapshot is thus one of a large, dynamic market. Renters can be found from across the socio-economic spectrum, from the very poor to the comparatively affluent. Yet the overall quality of housing is low, even for those in the highest income brackets. To understand potential market constraints on quality, in the next section we probe whether there are clear price premiums associated with better quality housing.

Section III: Determinants of Rental Prices in Dar es Salaam

In this section, we examine rental values in depth. We use hedonic price analysis to uncover the implicit prices of component goods that make up the housing bundle. The results highlight that there are large and significant rental price premiums associated not only with rental accommodation size and location, but also with key housing amenities such as basic services. It also underlines, however, that the value of some of these attributes are contingent on neighborhood characteristics, which may help explain why improvement in this area of housing in the city has lagged.

Table 3 reports the result of a hedonic price regression, which employs the following log-linear equation:

$$\ln(R) = \beta_0 + \beta_1(H) + \beta_2 (L) + \varepsilon$$

Where R is self-reported rental values. On the right-hand side of the equation are house characteristics and amenity variables (H), and locational attributes (L). Housing characteristics include the property size and services it has, while location attributes refer to distance from the city center, and a variable that indicates if the house is located in a visibly irregular neighborhood.[12] A full definition of these variables is provided in Table 1. It should be noted that given the nature of the variables included in the model, hedonic regression can suffer from problems of

[12] The coefficients can be interpreted as the percentage increase in rent for a one-unit change in the variable of interest, controlling for all other variables in the equation. For a dummy variable, the estimates reflect the percentage increase in rent associated with having that amenity, all other things being equal.

multicollinearity; this is discussed in annex 1, which shows that measures of covariance among the independent variables are relatively low.

The model explains nearly 40 percent of the variation in rental values recorded. As anticipated from the descriptive statistics above, space and distance from the city center clearly matter for rental values. Each additional kilometer from the city center is associated with approximately a 4 percent reduction in the value of rents, all other things being equal. Each additional room results in a 13 percent increase in rental value. It also confirms that improved building materials are associated with large and significant price premiums: the rent for a property with concrete or stone walls, floor, and roof will be 65 percent higher than those made of non-durable materials, all other things being equal.

These findings would suggest that landlords have a material incentive to offer higher quality accommodation; and indeed, there is some evidence to suggest that the construction materials of rental housing in the city has improved over time. Less than 20 years ago a survey of 244 renters' accommodation in central unplanned settlements of Manzese, Temeke and Buguruni found that just over one-third had at least one wall made from traditional materials such as poles and mud, and half had earth floors (Kiduanga 2003). Today, even in irregular enumeration areas in the center of the city, 98 percent of accommodation has concrete floors and walls.

There are also, however, large premiums for basic services but we do not see similar trends in improvement over time in this area. Access to mains water and/or sanitation is associated with a 73 percent increase in rental values, while electricity from the utility company is linked with 54 percent higher rents. Yet, unlike improving building materials, there is little to suggest that basic service coverage has improved in the city over time.

Why is this? The story of urban development across the world is closely intertwined with that of public provision of basic service infrastructure. Public investment in basic infrastructure can perform a coordinating role, galvanizing private investment and helping to steer urban growth patterns to reduce costs in the long term (Lall, Henderson, and Venables 2017). Indeed, in most cities across the world, adoption of basic services has required a combination of public investment in services and strong incentives or regulations to ensure that individuals comply with regulations (Ashraf, Glaeser, and Ponzetto 2016). In Dar es Salaam, however, public investment in water, sewerage, and electricity has struggled to keep pace with urban growth in the city (UN-HABITAT 2009). This leaves residents with little option but to develop private and community level solutions.

While there are successful cases of community led initiatives to develop basic services in the periphery of Dar es Salaam, there appear to be strong coordination problems that undermine these schemes in densely developed, central areas of the city (Panman, forthcoming). This likely reflects the nature of these goods, which are characterized by significant spatial externalities. That is to say, while there are clear private benefits to individuals of having these services, many of the wider health benefits of adoption are dependent not on individual household behavior but of that of their neighbors.[13] In contexts where there is uncertainty over neighbors' actions, individual incentives for investment will be dampened.

We can see evidence of this effect in the hedonic regression results shown in Table 3. As we would expect, neighborhood characteristics have an effect on housing values: rents in visibly irregular/slum areas are 18 percent lower than in non-irregular areas, all other things being equal.

13 No single individual household's investment in sanitation can address risks such as cholera and other contagious diseases: it is dependent on their neighbors' treatment of fecal sludge as well (Satterthwaite, Mitlin, and Bartlett 2015).

There is also a significant premium associated with municipal garbage collection, which likely also reflects the value of proximity to a good road since formal garbage collection trucks cannot access households that are far from passable roads.

What is more, however, is that these neighborhood factors appear to impact returns on housing amenities as well. In dense and irregular areas, the large premium associated with access to mains almost entirely disappears, as indicated by the interaction effect between mains connection and irregular areas. In short, in areas where some households *cannot* access sanitary human waste disposal, the private benefits of mains sanitation are reduced for all households.

In addition to this, irregular patterns of development may also place a ceiling on the *quantity* of housing available in the city. The vast majority of rental housing in Dar es Salaam is one story high. In contrast, in some areas of Nairobi informal tenements rise up to 8 stories with 9-14 individual rooms and a shared toilet per floor (Huchzermeyer 2007). This kind of density could not be supported by pit latrines.

Finally, one further result from the hedonic regression is worth highlighting. The results of the regression show that having a written rental contract is associated with an 11 percent increase in monthly rents. This could suggest that tenants/landlords with pre-existing personal relationships may forgo formal contracts. They may trust each other more, but also, as a consequence, landlords may find it hard to charge market rents.[14] Yet it also confirmst the hypotheses that contracts hold some value in themselves, indicating that despite their informal nature they do provide tenants with some degree of tenure security from landlords that they cannot legally sanction, which is reflected in higher rents.[15] This is discussed further in an accompanying paper exploring the instiutional framework of the rental market (Panman 2020).

14 Indeed, research from Lagos has found that landlords prefer to rent to strangers because they find it easier to collect rents from people that they do not have a close personal relationship with (UN-HABITAT 2003).
15 These findings align with findings in Nairobi, which show that tenants with formal contracts in both slum and non-slum areas also pay more in rent, all other things being equal (Talukdar 2018).

Table 3: Hedonic Estimates for Rental Value (Log)

	(1) Ln_Rent
Contract	0.1117691***
	(0.0381317)
House	-0.0139736
	(0.0383763)
Electricity	0.5385469***
	(0.0354035)
Garbage	0.0898036**
	(0.0416958)
Concrete	
1	-0.4366601*
	(0.261289)
2	0.3509334
	(0.2244021)
3	0.6512346***
	(0.2556719)
Rooms	0.133218***
	(0.0191273)
km_cbd	-0.0227511***
	(0.0036633)
Mains	0.7282275***
	(0.1280184)
Irregular	-0.1781652***
	(0.0450668)
Mains#Irregular	0.0326337
	(0.2479119)
Years_Lived	0.00844***
	(0.002421)
_cons	4.277655***
	(0.2332917)
R2	0.3867
Obs.	1026

Notes: Regression is survey weighted. Standard Errors are in Parenthesis.
*** Significance at the 1% level
** Significance at the 5% level
* Significance at the 10% level

Conclusions and Policy Implications: Making Room for Renters

To date, housing policy in Tanzania has paid little attention to the living conditions of renters. In keeping with wider international development policy trends, policy has been almost entirely focused on facilitating access to homeownership (Gilbert 2016; Peppercorn and Taffin 2013; World Bank 2015). In this section, we draw on the insight on the rental market provided by this paper to explore implications of this policy approach for living conditions in the city. It argues that this exclusive focus on homeownership is problematic for two reasons. First, policies focused on homeownership alone are not likely to improve living conditions for households who either prefer to rent or cannot afford to own. Second, in ignoring renters, current urban development policies risk harming them.

Renting can have many advantages for individuals and even for cities as a whole. For landlords, it is an important source of income; and in Dar es Salaam, we can see that many landlords fall into socio-demographic groups that may otherwise struggle to earn income. For tenants, it can be a flexible option that allows them to more easily relocate near to changing work, education, or leisure opportunities. This can have wider economic benefits – supporting more flexible labor markets, which is associated with productivity gains (Lonardoni and Bolay 2016; Peppercorn and Taffin 2013; Rakodi 1995). The data from Dar es Salaam supports these insights, showing that new migrants gravitate to rental housing, and that tenants move house both for positive reasons such as moving closer to work or schooling, and to cope with changes or shocks to their living conditions or family situation.

Yet these potential gains may be lost if the rental housing available lacks basic services and thus exposes residents to overcrowded and unhealthy living conditions. This is the case in Dar es Salaam: as this paper has shown, the vast majority of this housing is in very low-quality condition and lacks basic services. Yet this cannot simply be attributed to lack of demand for quality housing nor to lack of investment incentives for landlords. Instead, there appear to be institutional constraints on basic service provision in the city. This not only dampens the quality of rental housing on offer, but it may put a literal 'ceiling' on the quantity of rental housing available, as housing remains stuck at single-story development.

The current state of rental housing is particularly problematic given that demand for rental housing is set to continue to increase in Dar es Salaam. The city has been growing at a rate of about 5 percent per year (CPCS 2015), and, as we have seen, most new migrants and young people forming new households are renters. Moreover, even if we assume that policy could successfully facilitate access to homeownership to accommodate this growth, challenges would remain. This is because most homeownership in the city takes the form of incremental housing built on plots in the periphery of the city. Households living in these conditions are less likely to live in overcrowded conditions and to share a toilet, but many still lack public services and face a large trade-off in terms of access to employment. Indeed, even government facilitated access to land for incremental housing development, such as the '20,000 plots' policy, is not coordinated with provision of service or road infrastructure (Collier and Jones 2017; Kironde 2015).

Improving living conditions for renters thus requires addressing constraints on quality in rental housing directly. In the case of Dar es Salaam, the data presented in this paper suggests that this would require focusing on addressing challenges to delivery and adoption of basic service infrastructure in central areas of the city. In other cities, the constraints on quality rental housing may be different. This underlines the need for more research to explore the dynamics of rental markets in different contexts.

The urgency of the need to improve basic service provision in central Dar es Salaam highlights the second major drawback of side-lining of rental housing in current policy discourse: projects that could potentially help address these infrastructure constraints are currently designed in such a way that they may harm renters. Efforts to improve neighborhood and housing quality standards in central, irregular areas of cities in the Global South are often referred to as 'slum upgrading' projects. These can be broadly defined as spatially focused intervention to improve the physical, social, and environmental aspects of slum neighborhoods (Field and Kremer 2006). Slum upgrading has been promoted as a 'best practice' response to slums by international development organizations for at least 15 years, and is highlighted as a tool to achieve target 11 of the Sustainable Development Goals.

Curiously, however, renters are generally absent from welfare calculations for slum upgrading projects. Indeed, evaluations of slum upgrading programs rarely assess impacts on renters, beyond those that list rising rents as a project 'benefit' accruing to homeowners (Jaitman and Brakarz 2013; Gulyani and Bassett 2007; Buckley and Kalarickal 2006). Similarly, a well-known guideline for evaluation of slum upgrading projects only mentions renters as a source of income generation for homeowners in the project areas, not as residents for whom project impacts should also be considered (Field and Kremer 2006).

As a number of researchers have articulated, this is problematic as it ignores the likely scenario that many *existing* residents of 'upgraded' areas are renters. In addition to this, renters' voices are also often either excluded or under-represented in community participation for project design (Hooper and Cadstedt 2014; Rigon 2014). This has led a number of analysts to warn that renters may be harmed by the projects. Specifically, they caution that improved neighborhood infrastructure may translate into rising rental values and make the housing unaffordable to poor tenants (Gilbert 2008; Payne, Durand-Lasserve, and Rakodi 2009). Moreover, failure to take into account the needs of poor renters could even undermine the very objective of the project, if these poor households are forced to settle in new precarious locations (Gilbert 2011).

The data presented in this paper suggests that the picture may not be as dire as critics suggest, while also highlighting the need for more nuanced evaluation of the welfare effects of these projects. Thus, on the one hand, the hedonic price analysis confirms that projects are indeed likely to result in rising rental values, as improved services and even neighborhood quality will be reflected in rising rental values. Yet the data also suggest that some renters may welcome this change: the market is characterized by severe constraints on supply of these services, and it is notable that among the 481 households that said would "definitely" or "possibly" like to move to a new house in the next 3 years, 247 listed piped water as one of the top three "critical" services they would like to have in their next house.

Although these results are specific to Dar es Salaam, they have implications for project design across the world. Specifically, they indicate that a more nuanced project evaluation needs to distinguish between renters who cannot afford improved services and those who would welcome improvements, even at a cost. The former group may be harmed by the project, as they will incur costs from moving to alternative accommodation and may need to be compensated. The latter group may not realize any welfare gains from the project – i.e. if they pay the full compensating differential for the amenities in rent – but they will not be harmed either.

Making room for renters thus means making serious efforts to understand and measure how policies will affect tenants as well as owner-occupiers. The effects will be contingent on both the characteristics of renters in the project area, and the overall state of the rental market. As such, anticipating ex-ante impact of projects requires understanding of renters and the rental market in the specific place where projects are being proposed. Designing adequate compensation for any renters that are harmed by the project will require improved understanding of search and moving costs in the specific location, as well as the range of alternative housing available to them.

Annex 1: Variance Inflation Factor

Hedonic price regressions are often characterized by multicollinearity issues, which can inflate the standard error of coefficients and affect interpretation of coefficients. Table 4 thus presents the variance inflation factor (VIF) among the independent variables included in the model. The VIF provides an indicator of how much the standard error is inflated by multicollinearity. The VIF of 1.1 for the main variable thus indicates that the standard error is only 1 percent larger as a result of multicollinearity.

As indicated in Table 4, the VIF measures are low for all variables except for 'concrete'. The high VIF for concrete is not surprising, given that it is a categorical variable with four categories. Nonetheless, Table 5 presents the results of the regression excluding the variable of concrete. The results are consistent with the analysis presented in the main body of the paper in terms of both the direction and significance of coefficients, and the magnitudes of the coefficients do not increase by more than a few percentage points.

Table 4: Variance Inflation Factor for Ln(Rent) Hedonic Regression

Contract	1.08
House	1.04
Electric	1.15
Garbage	1.25
Concrete	
1	5.55
2	12.67
3	8.46
Rooms	1.1
km_cbd	1.47
Mains	1.1
Slum_area	1.38
Yrslived	1.03
Mean VIF	**3.11**

Table 5: Hedonic Price Estimates excluding 'Concrete'

	(2) **ln(rent)**
Contract	0.1324591 ***
	(0.0395455)
House	-0.026519
	(0.0393661)
Electric	0.5649417 ***
	(0.0348355)
Garbage	0.0900245 **
	(0.0413006)

Rooms	0.1161577 ***
	(0.0188556)
km_cbd	-0.0233098 ***
	(0.0038088)
Mains	0.7226297 ***
	(0.1275116)
Slum_area	-0.195494 ***
	(0.0469148)
Mains#Slum_area	0.0470122
	(0.2496579)
Yrslived	0.0085814 ***
	(0.0024889)
_cons	4.639143 ***
	(0.0866579)
R2	0.3867
Obs.	1026

Notes: Regression is survey weighted. Standard Errors are in Parenthesis.
*** Significance at the 1% level
** Significance at the 5% level
* Significance at the 10% level

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