

# Shelter from the Storm—but Disconnected from Jobs

Lessons from Urban South Africa on the Importance  
of Coordinating Housing and Transport Policies

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## Abstract

Informal settlements are a permanent feature of South Africa's cities. Estimates from the General Household Survey by Statistics South Africa show that more than 26 percent of all households in the country's six metropolitan areas live in informal dwellings. The government's policy efforts have focused on provision of subsidized housing, first introduced as part of the Reconstruction and Development Program. Through the lens of new urbanism and coordination in planning this paper explores the possible impact of the program using data from the General Household Survey. The analysis of the program's beneficiaries relative to non-beneficiaries does not show that public housing provision has multiplier effects in terms of complementary private

investments in housing maintenance or in upgrading. This is likely because Reconstruction and Development Program housing is often far from employment centers, with the houses built in the "old" apartheid locations that are disconnected from employment centers. In addition, households do not receive title deeds and are not allowed to rent out these dwelling. On the demand side, the authors carried out a small sample survey in Cape Town and find that, on a per hectare basis, shack dwellers are paying around the same for access to land as can be found in the up-scale market for undeveloped land. However, land zoning regulations and subdivision laws do not allow supply of small plots that are compatible with the affordability of poor households.

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# **Shelter from the Storm – but Disconnected from Jobs: Lessons from urban South Africa on the importance of coordinating housing and transport policies**

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## **Executive summary**

To improve the equity and efficiency of South Africa's cities, and undo the "geography of apartheid", South Africa needs to find ways to enable poor workers to gain access to land and housing closer to job opportunities in urban centers. In this paper, we explore the supply and the demand-sides of this argument. On the supply side, we explore the impact on beneficiaries of the government's flagship housing program, the Reconstruction and Development Program (RDP). On the demand side, we investigate how the poor obtain access to land and housing in informal settlements or squatter camps. We argue that the government's supply of subsidized housing should be better aligned with demand expressed by beneficiaries. This will improve its impact on beneficiaries and create more efficient and equitable cities.

Informal settlements are now a permanent feature of South Africa's cities. Estimates from the General Household Survey by Statistics South Africa (STATSSA, 2005) show that over 26 percent of all households in the six metropolitan areas live in informal dwellings. Living in informal settlements – which include shacks, backyard dwellings, squatter settlements and mobile homes – reduces quality of life. Crime levels are high and public service delivery is poor (with some notable exceptions, such as the provision of water). The burden of the informality falls on the very poor households who have monthly expenditures of less than R 1,500 per month (or about US\$200). Between 1996 and 2007, the number of households and persons living in informal settlements increased from 1.5 million and 6.5 million to 1.8 million and 7 million respectively. This happened despite the delivery of 2.5 million free houses to the poor by the government since 1994. Mobility out of the informal sector is also very low: between 2000 and 2005 only 2 percent of households moved from informal settlements to formal sector dwellings annually.

The Government's supply-side efforts have focused on provision of subsidized housing, first introduced as part of the Reconstruction and Development Program (RDP). Using the General Household Survey of StatsSA (2005), we explore the possible impact of the

program on the poor, defined here as households qualifying for the RDP housing subsidy by earning less than R3000 per month. While expenditures on housing differ as expected (with RDP beneficiaries spending less on housing than non-beneficiaries), we do not observe any differences in household consumption expenditures on food, and transport etc between households who receive subsidized houses and those who do not. Instead, there may be an impact of subsidized housing coming through an indirect channel – that of stimulating expenditures on education of children. This indirect effect of RDP housing is tested using a formal model (“revealed community equivalence scale model”), and we find that households who receive a subsidized house re-allocate resources towards increasing education expenditures.

However, our analysis of RDP beneficiaries and non beneficiaries does not show that public housing provision has multiplier effects in terms of complementary private investments in housing maintenance or upgrading. Other survey data (the Township Residential Property Markets Survey) even suggest that the current value of most RDP houses is less than what it cost to build them. Together, these observations suggest that there is mismatch between what the government is supplying and what the poor are demanding.

What can explain the lack of complementary investment in RDP houses and their declining values? The most common complaint heard is that households who receive RDP housing are not satisfied with their dwellings as these are often far from employment centers: the new houses were often built in the “old” apartheid locations (which were deliberately sited far from urban centers and white neighborhoods). In addition, households most often do not receive title deeds immediately, but are merely administratively allocated these houses, with the condition that they cannot be sold or rented for a period of 8 years, recently changed to 5 years. And even if they do receive title, this condition is attached to the title. Furthermore, even after the 5 year period, the government has a pre-emptive right (the right of first refusal) on the sale of the property. In other words, poor location and lack of fully tradable property rights would be the most probable explanations for the limited impact of the RDP program.

What is happening on the demand side? How are poor residents accessing land and shelter themselves, unaided by the government? We carried out a small pilot survey in an informal settlement, as there are very few empirical studies in South Africa that investigate how much the poor actually pay for the land on which they have their dwellings, for access to the official waiting lists for land or houses, or their willingness and ability to pay for different quality of housing. The small survey of 100 households to provide initial insights on this issue was conducted in Greater Khayelitsha,<sup>2</sup> Cape Town, because it is a well-known area, allowing many readers to have some idea of the type of settlement surveyed.

The survey revealed an active informal market for land and housing. Sixty-six percent of the respondents said that they had paid for, or were renting, the land on which they had built their dwelling. Respondents were paying R 350,000 equivalent per ha for land to put up wendy houses (backyard dwellings of about 5 square meters) and R 425,000 equivalent per ha for land to put up a single dwelling (25 square meters). On a per ha basis, these prices are of the same order of magnitude as can be found in the up-scale market for undeveloped land. Collectively, then, the very poor could compete with the high end of the property development market. However, land zoning regulations and subdivision laws do not allow supply of such small plots.

In this paper, we therefore argue that poverty is not the main cause for the mushrooming of informal settlements in South Africa. Many households live in informal settlements not because of affordability, but because of the lack of suitable small plots of land in the formal market. While most of the residents have only part-time or informal sector employment, many have full-time jobs. By providing small plots of serviced land and secure property rights, the government could leverage the existing resources of the poor and assist in the creation of assets that would improve welfare of the poor.

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<sup>2</sup> The pilot was actually conducted in the site and service and informal housing on unclaimed land to the east and south of the formal township of Khayelitsha.

In light of these findings, we make the following suggestions for policy innovations, which could be piloted and evaluated for impact.

- First, to remedy the poor location of the RDP subsidized houses, we suggest allowing the grants to be used by eligible individuals and groups to buy land and build/upgrade their own houses, or to buy already built houses.
- Second, increase the flexibility of the housing grant structure in such a way that beneficiaries themselves are able to make a trade-off between location and value of the housing. Some households would opt for a location closer to work and spend less on the value of the house, while others would prefer more housing value in a location further away.
- Third, in order to create more incentives to improve and invest in the housing asset, substantially reduce or eliminate the 8 (or 5) year “no sale and no rental policy”, and the right of first refusal.
- Fourth, increase the supply of subsidized land and houses by making it easy for developers and commercial banks to provide “sites and services” or fully built houses by using them as agents to manage and disburse the grants. However, this would only be allowed if they invest their own resources also into the project, i.e. by issuing a loan to the beneficiaries.
- Fifth, experience, from other countries demonstrates that community participation in the selection and monitoring of beneficiaries and the financing of own contributions can be a very efficient substitute for administrative control. South African communities already organize themselves often into rotating savings and credit associations (stokvels) to instill savings discipline and allow individuals to save for a lumpy investment. These stokvels could be used to provide community participation into the government program in various ways, including as a means of screening, collecting own contributions and managing grants.
- Sixth, remove the many existing land use and housing development regulations which most often still date from the apartheid era. These regulations had the explicit objective of barring blacks from well-located and land and preventing them from accumulating capital. These regulations should have been removed, but unfortunately,

a number of them are still in the books, and continue to have the originally intended effect<sup>3</sup>.

In conclusion, informal settlements are not going away. While, on the supply side, the subsidized low-income housing program has had an impressive roll-out in terms of numbers, its impact is disappointing. We argue that this is probably the result of a poor match with the demand side, where beneficiaries would be interested in having better located land, and would be willing to make the trade off against the value of the top structure. If allowed, the very poor could collectively compete with the high-end of the real estate market. However, current land market regulations and certain modalities of the existing government programs would need to be modified for this to happen.

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<sup>3</sup> The link for video case study to the issue at hand—<http://www.youtube.com/watch?v=RZxXsG6mO3g>



## 1. Introduction

Access by the poor to urban land and housing is one of the main challenges facing policy makers in South Africa. Estimates from the General Household Survey by Statistics South Africa (STATSSA, 2005) suggest that 26 percent of households in the six metropolitan areas live in informal dwellings, often illegally and with limited access to services<sup>4</sup>. Movement from the informal to the formal sector is low – between 1999 and 2004, only 10 percent of households interviewed in the GHS survey reported moving from informal settlements to formal sector dwellings. Add to this the increasing demand for housing from new household formation and urban migration - and informality becomes a major area of concern.

The growth of informal settlement in cities is often the upshot of unplanned urbanization or lack of coordination. The concept of new urbanism emphasizes coordination between long term land use, housing and transportation planning as an essential pillar for smart growth. It recognizes the importance of spatial or geographic proximity, layout, and an integrated design of those uses. On contrary, a lack of efficient integration can throttle sustainable development and eventually leads to an inferior growth path with suboptimal housing, educational, employment and service opportunities. In this paper we evaluate South Africa's subsidized housing program through this lens.

The South African government has set a target of 'housing for all by 2014', as a part of its national spatial development agenda. Much of the government effort has focused on provision of subsidized housing first introduced under the Reconstruction and Development Program (RDP), and therefore commonly known as the RDP Housing program. In this study, we ask two main questions. First, what is the impact of RDP housing on household expenditure and investment behavior? And second, what are alternative options to increase access to land and housing for the urban poor? To answer these questions, we use three sets of data—the General Household Survey (2005), the

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<sup>4</sup> In 2007, at the national level, 14.5 percent of households were living in informal dwellings (STATSSA Community Survey 2007). Since 1996, the proportion of households living in informal dwelling has decreased only by 1.5% since 1996, when the percentage was set at 16%.

Township Residential Property Markets (TRPM) data, and a specifically commissioned pilot survey conducted in a well-known informal settlement.

Escalating house prices, limited access to land and housing finance, land regulations which govern subdivision of land, highly regressive land taxation, and low supply elasticity of subsidized housing has made it difficult for poor (and middle class) households to enter the formal housing market. The informal sector housing is a response to the failure of the formal housing market to meet demand.

When it comes to sub-division regulations, the issue at hand is not so much one of minimum lot size regulations<sup>5</sup>, which exist in many countries and can reduce access to land by the poor. In South Africa the issue arises at an earlier stage in the process of land acquisition: large farms are only allowed to be sub-divided with Ministerial consent. As a consequence it is difficult for a land owner to sell off part of the farm for rezoning into residential or mixed use. The up-front lumpy investment needed to purchase entire farms (often several 100's of ha's in peri-urban areas, or 1,000 of ha's further away) would require enormous collective efforts by interested communities. While private developers should in principle enter this market once they have exhausted the currently more lucrative and familiar real estate markets for middle and high-income households, existing sub-division and environmental legislations significantly increase transaction costs.

In addition, the speculative premium on land is driven up by non-existent or, in some areas, even highly regressive land taxes. In anticipation of the implementation of the new Municipal Property Rates Act (currently implemented by only a small fraction of municipalities), municipalities have to implement the old legislation. In the former Transvaal (which includes Pretoria and Johannesburg) that means taxing the first hectare 100 times more than the 20<sup>th</sup> hectare. Another reason for slow delivery of housing can stem from the limited capacity of some municipalities to engage the market. Finally,

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<sup>5</sup> In Brazil, for instance, minimum lot size regulations of 125 m2 have reduced access to land for the urban poor (Lall, Wang and daMata, 2006).

there is a lingering resistance in many municipalities to set aside well-located land for low-income households. The resistance is related to pressure from high-income groups who wish to avoid perceived devaluation of their properties from being near housing for the poor as well as the perceived tax revenue losses when compared to other uses (in particular, up-market gated communities).

In this study, we focus on the following pair of complementary issues on land and housing in urban South Africa. First, we examine if provision of subsidized housing via the RDP program has stimulated complementary private investment in housing and neighborhood quality improvements. Second, we examine whether the poor would have the (partial) means to build their own houses, rather than be the passive recipients of houses built for them. We examine an alternative to the current public strategy of providing subsidized housing – promoting access to serviced land for individual upgrading by the poor – and see whether the latter would have a larger impact in terms of complementary investment.

In particular, given severe technical capacity constraints in the public sector to provide subsidized housing, there may be options for private developers to step in if serviced land is made available. Before turning to these issues, we first review the status of the informal housing sector in urban South Africa (Section 2). This is followed by an assessment of RDP subsidies (Section 3) and access to land (Section 4). Section 5 summarizes the main findings and suggests options for policy reform.

## **2. Informal Housing in South African Cities**

In this section, we provide stylized facts on the extent of informality and its implications for welfare of the poor in South Africa's main metropolitan areas. For the purpose of this study, we define households with monthly expenditure of less than R 1,500<sup>6</sup> as being very poor and those with monthly expenditures between R1,500 and R3,500 are classified as poor. The descriptive analysis presented here is based on data collected and collated by Statistics South Africa (2005) as part of its general household

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<sup>6</sup> This equates to about US\$200 per month for an average size household

survey (GHS). In addition to that, we also used data from a special study on township residential property markets (TRPM), collected from 2000 households in four urban areas. Both data sets are directly related to issues surrounding housing markets for the urban poor.<sup>7</sup>

| <b>Table 1: Housing Stock and Mobility across Metro Areas</b> |                                   |                      |                                     |                            |
|---|-----------------------------------|----------------------|-------------------------------------|----------------------------|
|   | <b>A - Current Housing Status</b> |                      | <b>B - Informal Housing in 2000</b> |                            |
|   | <b>Formal (%)</b>                 | <b>Informal (%)</b>  | <b>Formal (2005) (%)</b>            | <b>Informal (2005) (%)</b> |
| Cape Town City  | 669,305<br>(76.45)                | 206,227<br>(23.55)   | 31,685<br>(15.15)                   | 177,509<br>(84.85)         |
| Ekurhuleni  | 564,064<br>(68.51)                | 259,255<br>(31.49)   | 23,844<br>(10.41)                   | 211,382<br>(89.86)         |
| Ethekwini   | 804,262<br>(72.92)                | 298,629<br>(27.08)   | 27,655<br>(9.92)                    | 251,097<br>(90.08)         |
| Johannesburg  | 823,341<br>(72.1)                 | 318,615<br>(27.9)    | 21,796<br>(7.65)                    | 262,977<br>(92.35)         |
| Nelson Mandela Metro  | 247,949<br>(83.93)                | 47,491<br>(16.07)    | 6,482<br>(12.24)                    | 46,464<br>(87.76)          |
| Tshwane   | 474,664<br>(77.19)                | 140,265<br>(22.81)   | 10,469<br>(7.98)                    | 120,688<br>(92.02)         |
| Total   | 3,583,586<br>(73.83)              | 1,270,482<br>(26.17) | 121,932<br>(10.23)                  | 1,070,118<br>(89.77)       |

Source: GHS 2005

Table 1 summarizes the extent of housing informality in six metro areas in 2005 and the extent to which households have moved from informal to formal housing between 2000 and 2005. Data on current (2005) housing status shows that 26 percent of all households in the six metro areas live in informal settlements.<sup>8</sup> However, the incidence of informality varies considerably across metro areas – from 16 percent in Nelson Mandela metro area to 31.5 percent in Ekurhuleni.

Part B of Table 1 shows data on household mobility from informal to formal settlements between 2000 and 2005. Across metro areas, we find that 10.2 % of informal sector residents transitioned into the formal sector between 2000 and 2005. This would

<sup>7</sup> The TRPM study was sponsored by the FinMark Trust, Ford Foundation, Micro Finance Regulatory Council / USAID, South African National Treasury and the National Housing Finance Corporation.

<sup>8</sup> Informal settlements include shacks, squatter settlements and mobile homes.

imply in any given year only 2 % of the inhabitants of an informal settlement make the transition to a formal dwelling. Relative to the other metros, Cape Town shows the highest upward mobility – estimated at 15 % while Johannesburg shows the lowest with 7%. The differences probably reflect the more aggressive housing programs implemented in the different metro areas.

|                | Non-poor            |                 | Poor              |                   | Very poor           |                     |
|----------------|---------------------|-----------------|-------------------|-------------------|---------------------|---------------------|
|                | Formal (%)          | Informal (%)    | Formal (%)        | Informal (%)      | Formal (%)          | Informal (%)        |
| Cape Town City | 342,644<br>(96.6)   | 11,920<br>(3.4) | 145,273<br>(79.9) | 36,502<br>(20.1)  | 176,964<br>(52.9)   | 157,805<br>(47.1)   |
| Ekurhuleni     | 212,412<br>(97.3)   | 5,879<br>(2.7)  | 115,194<br>(84)   | 21,863<br>(16)    | 236,458<br>(50.5)   | 231,513<br>(49.5)   |
| Ethekwini      | 235,535<br>(95.5)   | 11,166<br>(4.5) | 178,608<br>(87.3) | 25,942<br>(12.7)  | 387,692<br>(59.7)   | 261,521<br>(40.3)   |
| Johannesburg   | 320,179<br>(96.6)   | 11,361<br>(3.4) | 157,521<br>(90.2) | 17,174<br>(9.8)   | 343,099<br>(54.2)   | 290,080<br>(45.8)   |
| Nelson Mandela | 71,760<br>(98.9)    | 811<br>(1.1)    | 71,597<br>(98)    | 1,473<br>(2)      | 103,518<br>(69.6)   | 45,207<br>(30.4)    |
| Tshwane        | 212,400<br>(96.8)   | 6,947<br>(3.2)  | 69,204<br>(89.5)  | 8,085<br>(10.5)   | 191,881<br>(60.5)   | 125,233<br>(39.5)   |
| Total          | 1,394,930<br>(93.7) | 48,083<br>(3.3) | 737,396<br>(86.9) | 111,040<br>(13.1) | 1,439,613<br>(56.5) | 1,111,358<br>(43.6) |

Source: GHS 2005

Table 2 shows the distribution of informal sector housing among very poor, poor and non poor households. Across metro areas, it is clear that household welfare (measured by expenditure groupings) and housing status are significantly correlated – indicating that informality in the housing market is a major issue for the poor and very poor. Across metro areas, 43.6% of the very poor live in informal settlements compared to 13.1 % of the poor and 3.3% of the non poor. The shares for the very poor in informal settlements for individual metro areas are similar – in statistical terms however, Ekurhuleni has almost 50% of its very poor living in informal dwellings. In any case, the data from the GHS survey clearly show that informal housing is a major issue for the very poor in South African cities.

In addition, South Africa's cities are increasingly unable to cope with rapid urbanization and have now become concentrations of unemployment, poverty and HIV/AIDS infections, rather than sources of growth and poverty reduction. The 2006 State of the Cities Report shows that the nine largest cities in South Africa account for 35 percent of the national population, but contribute to about 45 percent of the South African unemployment. Similarly, the average HIV prevalence rate in the nine cities is higher than the national average, with the exception of Cape Town. Unsurprisingly, urban informal settlements were found to have the highest HIV prevalence levels. Aside for Cape Town, the nine largest cities have also higher Gini coefficients than the national average and a few of them reach values of almost 0.8, suggesting serious equity issues.

The experience with informal settlements in Latin America suggests the way forward. Informal housing in Latin America, through land invasion or illegal lot sales, made poor households an integrated part of the city life (Gilbert and Ward, 1985). The growth of informal settlements was occurring at rates of 10-12 percent per annum, compelling policy makers to accommodate and upgrade, rather than eradicate and evict informal settlements by supporting self-built and "bootstrap" approaches (Ward 1982).

**Table 3: Housing Quality and Access to Services**

|                |          | % Household with good roofs | % Households with good walls | % Households with access to piped water | % Households with electricity connection | % Households with own toilet | % Households with schools in walking distance | % Households who pay for water |
|----------------|----------|-----------------------------|------------------------------|---|--|------------------------------|---|--------------------------------|
| Cape Town City | Formal   | 68.96                       | 68.96                        | 100                                     | 99.41                                    | 88.8                         | 65.03   | 87.82                          |
|                | Informal | 15.232                      | 15.23                        | 92.72                                   | 72.19                                    | 1.99                         | 92.72   | 33.11                          |
| Ekurhuleni     | Formal   | 80.08                       | 83.33                        | 98.78                                   | 96.95                                    | 57.72                        | 68.7  | 82.32                          |
|                | Informal | 42.47                       | 44.62                        | 87.1                                    | 36.56                                    | 5.38                         | 91.94   | 35.48                          |
| Ethekwini      | Formal   | 81.17                       | 81.49                        | 92.05                                   | 91.23                                    | 74.19                        | 55.52   | 68.34                          |
|                | Informal | 21.83                       | 18.78                        | 75.63                                   | 69.54                                    | 4.06                         | 80.2  | 19.29                          |
| Johannesburg   | Formal   | 74.59                       | 76.81                        | 97.34                                   | 93.06                                    | 66.17                        | 67.06   | 71.2                           |
|                | Informal | 31.15                       | 32.38                        | 90.57                                   | 54.51                                    | 1.64                         | 92.62   | 38.52                          |
| Nelson Mandela | Formal   | 62.91                       | 63.33                        | 97.72                                   | 97.19                                    | 71.23                        | 60.35   | 82.81                          |
|                | Informal | 4.76                        | 4.76                         | 93.33                                   | 28.57                                    | 0.95                         | 99.05   | 13.33                          |
| Tshwane        | Formal   | 76.22                       | 76.22                        | 94.9                                    | 91.93                                    | 69.85                        | 62.85   | 81.53                          |
|                | Informal | 39.34                       | 39.34                        | 79.51                                   | 61.48                                    | 3.28                         | 86.89   | 44.26                          |

Source: GHS (2005)

Informal settlements are clearly worse places to live in than formal settlements. Table 3 highlights the costs imposed by informality in terms of housing quality and access to services – which disproportionately influence welfare of the very poor. Across metro areas, housing quality – measured by the condition of walls and roof – is much worse in informal settlements. For instance, only 15.2 % of informal households in Cape Town have good roofs compared to 69% in the formal sector. In terms of access to services, the data suggest that access to electricity and toilets are particularly low for residents of informal settlements. In Johannesburg for example, 66% of formal sector households have access to in house toilets, compared to 1.6% for informal sector households. While access to electricity varies between formal and informal settlements, the numbers are not as dramatic as those for access to toilets. For example, in Ekurhuleni 97 % of formal sector households have access to electricity, compared to 37% for informal households.

Surprisingly, compared to other services, access to piped water in informal settlements is much better than other basic public services. With many households in informal settlements not paying for water, this demonstrates the success of the government’s free “life line” water policy. However, while other research on this topic also highlights that access to piped water is not a major problem for either formal or informal households, the quality of the water is of considerable concern. Besides Cape Town city, where 80 percent households report satisfaction with water quality, satisfaction levels with water quality is around 50 percent for the other metropolitan areas.

We find some initially counterintuitive results with respect to access to schools and medical facilities. We consider that a school or the medical facility is within the neighborhood if it is walking distance from the house. Across metro areas, we find that informal settlements have higher access to local schools and medical facilities - while formal settlements tend to be further from these facilities. Further, the concentration of informal settlements is higher near a school than a medical facility. While this may appear counterintuitive, it is quite possible that informal settlers try to settle in a location

close to such public facilities. Distance to school would matter more than to a medical facility, due to the high, recurrent transportation costs. The alternative explanation, i.e. that the government is faster in providing such school and medical facilities to informal than formal settlements is less plausible.

*Housing Cost and Financing:* Survey data from the TRPM makes it possible to examine the price of housing across housing categories. Table 4 summarizes the distribution of housing prices. The TRPM survey classified houses into the following 6 categories: (1) informal shack; (2) shack in sites and service scheme; (3) old township house; (4) RDP house; (5) mid income house and (6) upper income house. While there is no direct match between the housing categories used in the TRPM and the GHS surveys, informal shacks and sites and service locations are very close to the definition of informality that we use in the GHS classification. Almost all informal shacks and over 90% of dwellings in sites and services schemes are valued at under R 20,000. What is surprising here is that over 90% of RDP houses (the public sector formal subsidized houses) are also valued at under R 20,000. In other words, they are worth less than what it cost to build them. This is probably the clearest indication of the poor choice of location for these settlements.

In contrast, around 50% of middle income housing units were valued between R 50,000 and 100,000; and 35% of high income housing was priced between R 100,000 and R 200,000. It is important to note here that while the middle and high income dwellings are private developments built in the 1980s – these may not reflect true housing values as housing markets in the townships are still thin. However, anecdotal evidence from estate agents, advertisements, newspapers and business journals all point to a significant increase in the market for housing in townships since 2004 (Wines 2006). An updated survey is needed of the housing market in townships, their segmentation and changing values.

Access to formal housing finance remains an important issue. Over 72% of households living in RDP houses report to have used their own savings to pay for the



dwelling – and only 1.2% got a loan from a formal financial institution. In contrast, around 70% of households living in mid to upper income housing were financed by formal financial institutions.

| <b>House Price (ZAR)</b> | <b>Informal Shacks</b> | <b>Shacks in Sites and Services</b> | <b>Old Township House</b> | <b>RDP House</b> | <b>Mid-income House</b> | <b>Upper-income House</b> |
|--------------------------|------------------------|-------------------------------------|---------------------------|------------------|-------------------------|---------------------------|
| Less than 20,000         | 99.53                  | 92.00                               | 69.57                     | 90.70            | 5.88                    | 6.58                      |
| 20,000 – 50,000          | 0.47                   | 5.71                                | 18.84                     | 5.81             | 27.78                   | 19.08                     |
| 50,000 – 100,000         | 0.0                    | 0.57                                | 10.14                     | 3.49             | 51.31                   | 34.21                     |
| 100,000 – 200,000        | 0.0                    | 1.14                                | 1.45                      | 0.0              | 14.71                   | 34.21                     |
| 200,000 – 400,000        | 0.0                    | 0.0                                 | 0.0                       | 0.0              | 0.33                    | 4.61                      |
| 400,000 – 600,000        | 0.0                    | 0.57                                | 0.0                       | 0.0              | 0.0                     | 0.66                      |
| 600,000 – 800,000        | 0.0                    | 0.0                                 | 0.0                       | 0.0              | 0.0                     | 0.66                      |

### **3. Housing Subsidies – An Assessment**

The Reconstruction and Development Program (RDP) was the first socio-economic policy framework adopted by the government when it came to power in 1994. As such it is one of the key policy documents inspiring South Africa’s current housing policy. The RDP set a goal of 300,000 subsidized houses to be built a year with a minimum of one million low-cost houses to be constructed within five years. Section 26 of the Constitution of the Republic of South Africa, 1996, states that everyone has the right to have “access to adequate housing”. It is the government’s duty to take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of this right. Provincial and local government shares responsibility with the national government for the delivery of adequate housing. The Constitution also states “No one may be evicted from their home, or have their home demolished, without an

order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions.”

The RDP housing program operates as follows. The program uses means-testing to screen for eligible beneficiaries. Screening is done by government officials based on documentation supplied by the potential beneficiary. No community oversight or screening is used. Households who earn less than R 1,500 per month qualify for a subsidized house without making any complementary investment. Households with monthly incomes between R 1,500 and R 3,000 need to contribute R 2,479. To improve efficacy of RDP subsidies, provincial and local governments have been made responsible for identifying localities with high poverty incidence. Purchase of the land and the construction of the houses are done by private sector operators, hired by the government.

Theoretically, RDP housing comes with full ownership title. However, because the bureaucratic procedures that are needed before the actual title deed can be issued are seldom completed, beneficiaries do not receive title deeds when allocated their house. Some beneficiaries never receive their title. Such shortcomings undermine the purpose of the housing program that aims to provide poor households with a secure property asset.

Upon delivery, RDP beneficiaries instead obtain a letter from the relevant housing department which states that a title deed will be issued at some point in the future, but that the beneficiary is not allowed to rent or sell the house for a period of 8 years. Admittedly, with the passing of the New Housing Plan in April 2005, the “don’t rent, don’t sell” period was lowered from 8 to 5 years, but implementation of the new rule is uneven<sup>9</sup>. And people who got their houses before that date are still bound by the old arrangement (i.e. they are still not allowed to rent or sell their houses for 8 years).

The pace of delivery does not keep up with market demand. In 2005, only 4,000 units valued under R100,000, and 13,500 units priced between R 100-200,000 were delivered. The situation is exacerbated by the limited down-marketing of housing

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<sup>9</sup> For instance, houses allocated in Gauteng’s flagship integrated housing project Cosmo City in 2007 still had the old 8 years rule applied to them.

finance, since 86% of South African households currently do not earn enough to afford a mortgage of more than R200,000 (Joffe, 2006). At the same time there has been a doubling of prices for houses priced between R70,000 and R100,000 (Wines, 2006).

Supply constraints and lack of complementary housing finance has limited the extent to which RDP housing programs can meet the housing needs of the population. One of the main problems with the design of the grant system was that it combined a fixed ceiling for the total grant with a fixed minimum cost for the construction of the dwelling (which in turn is dictated by a fixed quality standard), “squeezing” the land cost part so much that builders were almost forced to construct in areas with very low land prices. Fixing the housing cost component took away the flexibility to trade off location against housing costs. Almost invariably, this meant that the RDP housing schemes were located in the “old” locations, far away from work and previously white neighborhoods. Hence, the geography of apartheid was replicated, because of a combination of fixed grant size and housing cost component. These issues have been discussed in several other studies, and we will not dwell on them here.<sup>10</sup>

Instead, we focus our attention on assessing how the subsidized RDP housing program has affected the present living standard (welfare) of the urban poor. Our analysis encompasses the six major metropolitan areas of the country.<sup>11</sup> To evaluate the relative impacts of the housing program, we focus on three components of household expenditure:

- monthly consumption expenditure on food, clothing, and transport;
- monthly expenditure on housing; and
- monthly expenditure on children’s education.

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<sup>10</sup> See for instance, Narsoo 2000 and Huchzermeyer 2003.

<sup>11</sup> Six metropolitan areas are Johannesburg, Cape Town City, Ekurhuleni, Ethekwini, Nelson Mandela and Tshwane.

The reason behind such a classification is to find out whether the RDP program has any multiplier effects on increasing consumption, stimulating investment in housing or long term investment in children's human capital.

To compare the effects of the government's RDP scheme, we look at households with monthly expenditures below 3,000 Rand and then we divide these households in two subgroups: (a) households who received subsidies and (b) households who did not.<sup>12</sup> We first compare these two groups in terms of consumption, housing and education expenditures. Next, we develop a formal model to examine the effectiveness of RDP subsidies.

### **3.1 Comparison of Beneficiaries and Non-beneficiaries**

Table 5 compares households with and without RDP subsidies based on their monthly and annual expenditures. There are three points worth highlighting here. First, not surprisingly monthly housing expenditures on housing are significantly higher for households who do not receive RDP assistance.

Second, households who received RDP housing do not make any additional complementary investments on housing quality improvements compared to households without RDP housing. International experience suggests that complementary private investments in housing maintenance, service delivery and housing improvements are some of the key multiplier effects of public investment in tenure security and low income housing. However, the GHS data do not support this hypothesis as we cannot see any significant differences in expenditures on these categories.

Third, RDP subsidies have indirect benefits in terms of expenditures on children's education -- beneficiary households spend significantly more on their children's human capital development. On average non-beneficiary households spend R 99 per month on education, compared to R 121 for beneficiary households. With beneficiaries spending in

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<sup>12</sup> We choose this cut-off as it represents poor households who would qualify for RDP housing.

repairs half of what non-beneficiaries spend, it could be that education is the first item to increase once very poor families benefit from a direct or indirect subsidy. Or it could be because the ongoing demands of maintaining adequate shelter for non-beneficiaries is higher than the incentive for further improvement and investment by beneficiaries. In the formal model presented below, we carefully examine this indirect benefit of the RDP program.

| Item  | Mean Expenditure (in Rand) |         | t- Value | Pr> t  |
|---|----------------------------|---------|----------|--------|
|   | No RDP                     | RDP     |          |        |
| Monthly Expenditure on food   | 406.53                     | 401.57  | 0.84     | 0.4017 |
| Monthly expenditure on house  | 157.04**                   | 68.89   | 15.96    | 0.0001 |
| Monthly expenditure on transportation                                   | 183.79                     | 187.52  | -0.98    | 0.33   |
| Monthly expenditure on education  | 98.63**                    | 120.54  | -4.13    | 0.0001 |
| Annual expenditure (house-owners) on Maintenance and repair of dwelling | 1358.00                    | 1239.73 | 0.38     | 0.70   |
| Services for maintenance  | 477.53                     | 656.00  | -1.43    | 0.156  |
| Improvements  | 2428.70                    | 1310.00 | 1.13     | 0.26   |

The following two tables (Tables 6 and 7) present the distribution of RDP beneficiary and non-beneficiary households in terms of any housing repairs or contributions made towards community provision of services such as water. We find that only slightly more than 10% have engaged in such activities.

| Metro          | Non-Beneficiaries (%) |                   |              | Beneficiaries (%) |                 |              |
|----------------|-----------------------|-------------------|--------------|-------------------|-----------------|--------------|
|                | No repair             | Repair            | Total (=100) | No repair         | Repair          | Total (=100) |
| Cape Town City | 452588<br>(79.33)     | 117907<br>(20.67) | 570495       | 67144<br>(93.32)  | 4809<br>(6.68)  | 71953        |
| Ekurhuleni     | 406587<br>(93.24)     | 29464<br>(6.76)   | 436052       | 78442<br>(92.33)  | 6514<br>(7.67)  | 84956        |
| Ethekwini      | 510926<br>(89.30)     | 61251<br>(10.7)   | 572177       | 40456<br>(85.37)  | 6933<br>(14.63) | 47388        |
| Johannesburg   | 502961<br>(86.06)     | 81459<br>(13.94)  | 584420       | 32693<br>(86.93)  | 4916<br>(13.07) | 37609        |
| Nelson Mandela | 181560                | 16553             | 198112       | 44845             | 7562            | 52407        |

|         |                    |                   |         |                   |                  |        |
|---------|--------------------|-------------------|---------|-------------------|------------------|--------|
|         | (91.64)            | (8.36)            |         | (85.57)           | (14.43)          |        |
| Tshwane | 333989<br>(89.32)  | 39937<br>(10.68)  | 373926  | 34284<br>(90.63)  | 3546<br>(9.37)   | 37830  |
| Total   | 2388610<br>(87.33) | 346571<br>(12.62) | 2735182 | 297865<br>(89.68) | 34279<br>(10.32) | 332144 |

Unfortunately, these findings appear to indicate that there may be no multiplier effects on improving consumption of basic necessary commodities or long term investment or value addition in their dwellings. However, providing RDP housing does appear to have a significant effect on increasing household spending on children's education. We explore this link in detail below.

| <b>Table 7: Contribution for community service provision</b> |                          |                     |                     |                        |                     |                     |
|--|--------------------------|---------------------|---------------------|------------------------|---------------------|---------------------|
| <b>Metro</b>   | <b>Non-Beneficiaries</b> |                     |                     | <b>Beneficiaries</b>   |                     |                     |
|  | <b>No contribution</b>   | <b>Contribution</b> | <b>Total (=100)</b> | <b>No contribution</b> | <b>Contribution</b> | <b>Total (=100)</b> |
| Cape Town City   | 523102<br>(91.69)        | 47393<br>(8031)     | 570495              | 61157<br>(85.00)       | 10796<br>(15.00)    | 71953               |
| Ekurhuleni   | 420166<br>(96.36)        | 15886<br>(3.64)     | 436052              | 80553<br>(94.82)       | 4403<br>(5018)      | 84956               |
| Ethekwini  | 565069<br>(98.76)        | 7108<br>(1.24)      | 572177              | 47388<br>(100)         | 0                   | 47388               |
| Johannesburg   | 558397<br>(95.55)        | 26024<br>(4.45)     | 584420              | 37609<br>(100)         | 0                   | 37609               |
| Nelson Mandela   | 198112<br>(100)          | 0                   | 198112              | 52407<br>(100)         | 0                   | 52407               |
| Tshwane  | 343975<br>(91.99)        | 29951<br>(8.01)     | 373926              | 36523<br>(96.54)       | 1307<br>(3.46)      | 37830               |
| Total  | 2608820<br>(95.38)       | 126361<br>(4.62)    | 2735182             | 315637<br>(95.03)      | 16507<br>(4.97)     | 332144              |

### **3.2 Effects on Education Spending**

In this section, we develop a model to examine the links between RDP housing provision and expenditures on children's education. Choosing the right welfare indicator has considerable bearing on evaluating policy impacts (Buhmann (1988), Deaton and Paxson (1998), Jenkins and Cowell (1994)). There is a large body of literature in economics that employs equivalence scales to estimate the welfare of households with different demographic characteristics (Engel 1895, Rothbarth 1943, Deaton 1997). This literature finds there is general agreement that total household income overstates welfare

or larger households and per capita income overcorrects for household size and understates the welfare of larger households, unless ‘economies of scale’ or ‘adult equivalence of a child’ are appropriately considered (Nelson, 1993). In this study, we use a revealed *community* equivalence scale model (Olken 2005), which Olken uses to assess the effect of discretionary community based welfare programs on poor households. The revealed community equivalence scale (RCES) model is derived by Olken from the equivalence scale models cited above. An ‘equivalence scale’ is used in estimating the relative levels of spending (from their own income) of a household with respect to a benchmark household with two adults and no children. The model is then modified to explain the effects of some exogenous assistance, i.e. a community-based welfare program, on consumption of the beneficiaries (with non-beneficiaries as the benchmark). The name of the model includes ‘community’ to refer the type of welfare program Olken empirically investigated. However, it is a general model applicable to measure any exogenous assistance program like RDP and need not be a community driven one.

Olken (2005) uses a community equivalence scale model (RCES) to show the effectiveness of community-driven welfare programs. From a policy perspective, the definition of welfare becomes important when the government planner has to select a beneficiary group for any welfare intervention.

This model is divided into two parts. First, it computes the probability that a household with a given set of basic characteristics receives aid. Second, it uses the traditional method for estimating demand based equivalence scales and compares the same group of households.

Before discussing the main results for South Africa, we first provide a short analytic and empirical overview of the model as developed in Olken (2005). In this model, the community maximizes a social welfare function of the form

$$\max \sum_{i=1}^I \beta(y_i, n_i, k_i, x_i, p) v(y_i, n_i, k_i, x_i, p, a_i) \quad s.t \sum_{i=1}^I a_i = A$$

where,  $\beta(\cdot)$  represents the welfare weights on each households,  $A$  represents total aid available for distribution,  $x_i$  represents basic household characteristics such as ownership of dwelling, present dwelling type and quality, household's access to basic amenities and their location choices.  $v(\cdot)$  represents the household's indirect utility function as evaluated by the community. Household composition is represented by number of children,  $k_i$ , and household size,  $n_i$ . The other two determinants relevant for community consideration for aid are household's expenditure,  $y_i$  and price level,  $p$ . Since the effects of individual components cannot be separated for  $\beta(\cdot)$  and  $v(\cdot)$ , the community benefit function is written as:

$$B(y_i, n_i, k_i, x_i, p, a_i) = \beta(y_i, n_i, k_i, x_i, p) v(y_i, n_i, k_i, x_i, p, a_i)$$

To avoid the complications due to differential consumption patterns between a child and an adult, the model parameterizes household size in terms of effective adults by considering

$$\text{Effective household size} = [n - (1 - \alpha)k]^\theta$$

where,  $\alpha$  stands for the cost of a child relative to an adult and  $\theta$  captures household economies of scale. Based on this definition of effective household size under the assumption of fixed price levels, expenditure per equivalence adult can be defined as

$$\tilde{y} = \frac{y}{[n - (1 - \alpha)k]^\theta}$$

and  $B(\cdot)$  can be written as  $B(\tilde{y}, x; a)$ . Function  $B(\cdot)$  is assumed to be concave in income per equivalence adult.

Now, given basic household characteristics, households below the threshold income should receive the subsidy. However, depending upon the community's available resources, the probability that a household receives aid varies across communities. To capture inter community variation the probability varies as:

$$\Pr[\text{Receive aid}_{ij}] = F \left[ \gamma_j + \gamma_2 B \left( \frac{y_{ij}}{[n_{ij} - (1 - \alpha)k_{ij}]^\theta}, x_{ij} \right) \right]$$



Where,  $\gamma_j$  is the community fixed effect and F represents the distribution function for the error term. With the assumption of log indirect utility function the above specification turns out to be

$$\Pr[\text{Receive aid}_{ij}] = F\left[\gamma_j + \gamma_2 \log(y_{ij}) - \gamma_2 \theta \log(n_{ij}) - (1-\alpha)k_{ij} + \gamma_3 x_{ij}\right]$$

And, its linear approximation becomes

$$\Pr[\text{Receive aid}_{ij}] = F\left[\gamma_j + \gamma_2 \log(y_{ij}) - \gamma_2 \theta \log(n_{ij}) + \gamma_2 \theta (1-\alpha) \left(\frac{k_{ij}}{n_{ij}}\right) + \gamma_3 x_{ij}\right]$$

Parameter values  $\theta$  and  $\alpha$  are generated empirically by assuming a logistic CDF for F[.] and use those values to compute RCES from the following equation

$$RCES = \frac{y_{ij}^C}{y_{ij}^R} = \exp\left[\theta(1-\alpha)\left(\frac{k_{ij}^R}{n_{ij}^R} - \frac{k_{ij}^C}{n_{ij}^C}\right) - \theta \log\left(\frac{n_{ij}^C}{n_{ij}^R}\right)\right]$$

Suffix R and C in the above expression represent the reference group and the comparison group for this analysis. We compare the effects on the comparison group with respect to a reference group.

We also use propensity score matching to compare the changes in consumption and education expenditure among beneficiaries of the RDP program with the rest of the poor households who qualified for it but yet to receive it. We use radius and kernel matching with different kernel types to form the counterfactual or the reference group. After the counterfactual group is formed we calculate average treatment effect (ATE) on consumption and education expenditures in the following way:

$$ATE = E(Y_C - Y_R | D = 1) = E(Y_C | D = 1) - E(Y_R | D = 1)$$

Average treatment effect (ATE) is defined as the mean difference in outcome between the treated (C) and the counterfactual group (R) in the presence of treatment (D=1).

**Data Issues:** We use the General Household level Survey (GHS) data for the year 2005 in this analysis. These data have been collected and collated by the STATSSA,

South Africa. A multi-stage stratified sample was drawn by Statistics South Africa from the master sample for its regular household surveys. The master sample is drawn from the database of enumeration areas (EAs) established during the demarcation phase of Census 2001. As part of the master sample, small EAs consisting of fewer than 100 households are combined with adjacent EAs to form primary sampling units (PSUs) of at least 100 households. This allows for repeated sampling of dwelling units within each PSU. The sampling procedure for the master sample involves explicit stratification by province. In each selected PSU a systematic sample of ten dwelling units was drawn, thus, resulting in approximately 30,000 dwelling units. All households in the sampled dwelling units were enumerated. The target population is private households in all nine provinces of South Africa and residents in workers' hostels. The survey does not cover other collective living quarters such as students' hostels, old age homes, hospitals, prisons and military barracks (GHS05, STATSSA).

*Estimation:* We consider a logistic distribution of the error term and recover the value of  $\theta$  and  $\alpha$  from our model. We use the following two models to estimate the parameter values required to calculate equivalence scale for consumption and human capital in terms of education expenditure. We use the same models to estimate ATE from our propensity score matching.

### A. For Consumption Equivalence

$$\Pr[\text{Receive aid}] = \gamma_j + \lambda_1 \log(\text{consumption}) + \lambda_2 \log(\text{Household Size}) + \lambda_3 (\text{Proportion of Children}) + x_{ij} + \varepsilon_1$$

### B. For Human capital Equivalence

$$\Pr[\text{Receive aid}] = \gamma_j + \lambda_1 \log(\text{education exp}) + \lambda_2 \log(\text{Total no. of students}) + \lambda_3 (\text{Proportion of Children to total no. of students}) + x_{ij} + \varepsilon_1$$

where,  $\lambda_2 = -\lambda_1\theta$  and  $\lambda_3 = -\lambda_2(1 - \alpha)$ . For consumption expenditures, we add up expenditures on food, clothes, transport and other minor miscellaneous expenditures. Since education expenditure is a quasi public good and restricted to students, we consider

the total number of students in a household and proportion of students below the age of 12 years to estimate education cost per effective student. In this regard, we consider students above the age 12 years as adult students. Similar to the idea in any equivalence scale model that consumption expenditure are (i) different between adults and children and (ii) larger families leads to economies of scale, we use this classification to capture difference in expenditure allocation for higher education and basic education for children.

We assume  $\alpha$  does not vary across households. We therefore use both the groups of households below and above the cut-off to estimate  $\alpha$ . Variations in  $\theta$  and  $\alpha$  between 0 and 1 will produce equivalence consumption that lie between actual and per equivalent adult consumption. Similarly, this range restricts variations in schooling expenditure between actual per equivalence non-child student in the household.

Among household level characteristics, defined by  $x_{ij}$ , we consider household size, proportion of children to total number of members in each household, whether they pay for piped water, condition of roof and walls, whether the household is a female headed household, access to medical facilities, type of present dwelling and distance from school as a measure of household's neighborhood choice. We mentioned earlier that our analysis is restricted to the six major metropolitan areas. Since the success of the housing program will vary across metropolitan area depending upon their local characteristics, we introduce fixed effects in the estimation.

Based on the available data we use percentage of children in the household, proportion of households who can pay for water, condition of roof and wall, female headed household, informal dwellers, schools in the neighborhood and graduate household heads as our determinants that represent household characteristics in our model. We estimate  $\theta$  and  $\alpha$  separately for our model for the consumption equivalence and education equivalence scales. To find out education equivalence we use the number of children, total number of students and monthly expenditures on education. We control for metropolitan fixed effects by using a fixed effect logit-model.<sup>13</sup>

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<sup>13</sup> Results from these estimations are available on request.

For our analysis we consider only the recipient and non-recipient of RDP households below the cut-off point (Rand 3000) and compare between households who are identical in terms of number of effective adults. We compare these two groups for households 2, 3, and 4 (effective) adults. This comparison will enable us to find out whether the subsidy scheme is capable of pulling up households with different sizes above the threshold in terms of consumption or investment in human capital. These findings are reported in table 8.

Table-8 represents the parameter values for intra household economies of scale,  $\theta$ , relative cost of children with respect to adults,  $\alpha$ , and equivalence scales. The consumption equivalence scale for poor recipient households with respect to non-recipient households below the cut-off shows no significant gap. It suggests that RDP subsidies are not associated with higher consumption level of poor recipients in terms of per capita effective adult consumption of basic items such as food, transport and clothes.

| <b>Parameter</b>                       | <b>Model 1:<br/>Consumption</b> | <b>Model 2: Education</b> |
|--|---------------------------------|---------------------------|
| $\lambda_1 = \gamma_2$                 | -0.41                           | -0.308                    |
| $\lambda_2 = -\theta\gamma_2$          | 0.39                            | 0.26                      |
| $\lambda_3 = \theta(1-\alpha)\gamma_2$ | -0.009                          | -0.07                     |
|  |                                 |                           |
| $\theta$                               | 0.951                           | 0.844                     |
| $\alpha$                               | 0.023                           | 0.269                     |
| Equivalence scale                      |                                 |                           |
| $\sigma_0$                             | 1.000                           | 1.173                     |
| $\sigma_1$                             | 1.000                           | 1.071                     |
| $\sigma_2$                             | 1.000                           | 1.068                     |

Note: The equivalence scale between recipient and non-recipient of poor households with identical number of effective adults. Parameters  $\sigma_0$ ,  $\sigma_1$  and  $\sigma_2$  represent equivalence scale between these groups for effective adult members 2, 3 and 4.

This result remains the same even for households with a higher number of effective adults. It corroborates our finding in the descriptive statistics that RDP subsidies do not have any multiplier effects on consumption.

The last column in Table-8 shows the equivalence scales in terms of education expenditures per effective student. This shows that the RDP subsidy has a significantly

large impact on improving education expenditures among the poor households. It improves equivalence scale by 17 percent for the households with 2 effective adults in the family. However, it declines as the number of effective adults increase. Our findings suggest that the equivalence scale reduces by around 10 percent for households with three effective adults. However, a further increase in effective adults has no significant impact.

The following table presents the average treatment effects (ATE) of RDP housing subsidy program on household’s expenditure on consumption and children’s education. We use propensity score matching in this regard and calculate the percentages in respective expenditures after the treatment. The results are similar to our findings from the RCES as given in Table-8. The findings provide a robustness check for the summary of means presented in Table 5. On the basis of our model findings and the summary statistics, we conclude that RDP housing subsidies do not affect household consumption but improves household allocation of expenditures on education.

**Table 9: Average treatment effects (ATE) of RDP on consumption and education expenditure**

| Matching methods                                  | Average treatment effect on |                       |
|---|-----------------------------|-----------------------|
|   | Consumption expenditure     | Education expenditure |
| <b><i>A. Radius Calliper matching</i></b>         | 7.96 (1.22 %)               | 39.21 (12.69 %)       |
| <b><i>B. Kernel Matching With kernel type</i></b> |                             |                       |
| (i) Epanechnikov                                  | 5.58 (0.87 %)               | 38.63 (12.49 %)       |
| (ii) Biweight                                     | 3.81 (0.59 %)               | 34.13 (11.05 %)       |

Note: Figures in the parentheses indicate the percentage change in respective expenditure between the treated (comparison) and counterfactual (reference) groups.

#### **4. Can the Poor Buy Their Own Land and Build Their Own Houses?**

In the previous section, we discussed some limitations with the RDP housing program. In addition to supply side constraints that slow down rollout of the RDP, demand side assessments also show low benefits of the RDP in terms of multiplier effects and stimulating private investment in housing quality. In this section, we discuss a complementary option to meet the backlog of informality – the provision of serviced land and reducing regulatory hurdles. The basic rationale behind this is that the poor – even the poorest – already pay for housing and land, but in informal settlements. Would it not be feasible to redesign government programs in such a way that more land becomes available to encourage investment in own housing by the poor themselves in formal settlements?

Such a complementary approach is urgently needed, because even though the government is involved in establishing public-private partnerships with the construction industry and the finance sector, the overwhelming demand and the relatively high cost of even the simplest homes, makes it highly unlikely that demand will be met through formal-sector construction. The banks have undertaken to finance houses for those earning between R1500-R7000 a month, but there is no housing available and little affordable land available for developers to respond to the demand. It is also unlikely that those at the lower end of the income bracket will be able to service a mortgage on a house of even RDP standard.

In South Africa, there are very few studies that investigate how much poor people pay for the land on which they have their houses, for access to the waiting lists for land or houses, for the levels of investment in their property, or their willingness and ability to pay for different quality housing. In addition, we know next to nothing about the factors which affect their willingness to pay, such as proximity to work, recreation, services etc. To provide some preliminary insights on these issues, we undertook a pilot survey using Khayelitsha, Cape Town as a case study. Khayelitsha is the largest settlement of informal and formal municipal housing for the urban poor in Cape Town. It stretches from just

past the airport south to Baden Powell Drive along the N2 and westwards as far as Mitchell's Plain.<sup>14</sup>

#### **4.1 Pilot Survey in Khayelitsha, Cape Town**

The survey's objective was to make a rapid assessment of whether there was a market for land and houses in the informal settlements, to get an indication of what residents consider their main problems in accessing housing and how they go about providing shelter for themselves. The survey was complemented by informal focus group discussions and was carried out by three enumerators on 100 households selected randomly in three areas. 35 houses were selected at random in Village 3 South (near Macassar). The second enumerator surveyed 32 households in Village 3 North (near the Sports complex) and the third 33 households in Barcelona closer to the airport, where most of the interviews were with people in very small "wendy-houses" (backyard dwellings). The areas were about 5 km apart. In the areas surveyed, there are no municipal or RDP built houses and only a few of the homes were made from brick. Some of this land was settled not long after or even before the advent of democratic rule in 1994, but most within the last ten years. Some households simply had the land they had occupied ratified and others were allocated a place to build. There is rubbish clearing, with access to water for all, even if it is mostly through communal taps. Communal toilet facilities are not ideal, but are available, and even some of those in very humble "wendy-houses" have access to electricity, through their landlord's supply.

In addition to the results reported here, respondents were asked for financial information on food expenditures, transport, savings etc. However, there was a reluctance to answer the financial questions, both because people prefer not to share that information and because in many instances, expenditure (including remittances) was erratic and dependent on availability and was not something that was budgeted or known. The enumerators explained that they wanted to know how people access housing and that they

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<sup>14</sup> This is the greater Khayelitsha area. Khayelitsha township is a formal housing suburb which is much smaller than the general area described here. The pilot survey was predominantly in the site and service areas to the east and south of Khayelitsha township, with some on undeclared land.

were not part of the government, but there was still some reluctance to admit to making payments for access to land or housing. The survey was carried out shortly before the municipal elections which added to feelings of suspicion.

The survey showed that there is an active informal market for land and that the poor do pay to get access to land for housing. 66% of the respondents paid for, or were renting, the land on which they had built their dwelling. 12% had bought their houses and 16% were renting the dwelling they were living in and 6% made no payments for the land incurring only direct building costs<sup>15</sup>. This study confirmed the TRPM survey<sup>16</sup> that shows a weak secondary market for informal housing, with most respondents in this survey indicating that they did not consider selling their dwelling to be a realistic option. The 12% indicating they had bought a house do not all represent activity on a secondary housing market, since some of these had bought a wooden kit wendy-house and transported it to a backyard space. In response to questions on preferred option, only 14% indicated they may want to buy a new house whereas 60% indicated that they wanted to add more rooms.

The survey also confirmed that title increases the value of the property, although there are likely to be other factors, including house quality, affecting the differential. The survey showed that the respondent's perception of the value of the selling price of a dwelling for those without title is just under R 4,000, whereas the perceived value for a house with title is almost R 27,000.

***Access to Land:*** Land seems to be usually allocated to individuals by a street committee. While some respondents indicated that they paid for this allocation and gave the amounts paid, others said definitely that they did not pay and others hedged and did

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<sup>15</sup> The people here distinguish between renting or buying land upon which they themselves build their own small shacks, and then in some cases they may "buy" or rent an already existing shack - then they say they have bought or rented the "house". There is no ownership or legal tenure on any of it. The distinction is between being given usufruct right (sometimes even that is tentative) to a small piece of land (usually in the "yard" of either a bigger shack or a brick dwelling) or alternatively being given usufruct right to an actual dwelling. If there is a one off payment then the person is said to have "bought" it. If there is a monthly (very occasionally quarterly or yearly) payment then it is termed "renting".

<sup>16</sup> Where there are similar indicators from the TRPM 2003 Cape Town Informal sub-sector survey, these are included for comparison.



not want to respond. In the case of early settlers who obtained the land by moving on to vacant areas, land access appears to have been ratified by either the street committee (explicitly or implicitly) or by the municipality. It is unclear when the street committees, the municipality or the land “owners” actually have final control over access. The majority of those who paid indicated payment to either landholders (38%) or to the street committees (31%) and in almost all cases respondents recommend that new settlers apply to the street committee for access. However some spoke of the municipality (especially in relation to title deeds and housing waiting lists). Payments to landholders were primarily with respect to backyard dwellings although some claimed to require street committee allocation to receive space to erect a "wendy house". It is unclear how the street committee can be involved in finding backyard dwelling space, but could be in community oversight of both crowding and who moves into the neighborhood. Some 22% preferred not to answer whom they had paid.

| <b>One off Land Payment or Land Sale</b>                        |       |
|---|-------|
| No payment  | 45%   |
| Payment made  | 55%   |
| Mean amount paid by those who made a once-off payment           | R762. |
| <b>Monthly Payment of rent (dwelling and/or for space only)</b> |       |
| No payment  | 71%   |
| Payment   | 29%   |

The mean amount paid by those making monthly payments was R641 per household

Of the 29% of households that paid rent, 59% indicated that they paid the owner and the others did not indicate who they paid but anecdotal evidence supports the assumption that all the rents were to the person who nominally owns the land and/or house. There was no evidence of the street committees, gangs or the municipality receiving monthly rent.

Another indicator of what the poor are effectively paying for their housing is the cost of materials and transport and paid labor where applicable. The respondents did not cost their own time invested in developing their shacks. The cost of building the houses given below are the estimates given by the respondents and may be unreliable but give further evidence of the fact that the poor are currently paying considerable amounts of money for housing.

| <b>The Cost of the House</b>                           |        |
|--|--------|
| Nothing stated   | 23%    |
| Payment/cost made                                      | 73%    |
| Mean payment/cost of those responding (Rand)           | R6278  |
| <b>Frequency Distribution for House Cost (in Rand)</b> |        |
| Less than 5000   | 53 71% |
| 5000-9999  | 11 15% |
| 10000-19999  | 4 5%   |
| 20 000 or more   | 7 9%   |

## **4.2 Estimates of Land Values**

Land and house sizes were not measured in the survey—these were estimated at 5m<sup>2</sup> ‘wendy houses’<sup>17</sup> and 25m<sup>2</sup> for informal shacks. We must note here that these are preliminary indicators of land values and much more representative and detailed investigation specifically geared to establishing area values is still needed. One of the main limitations with this approach is that these estimates are the self-reported subjective valuations of residents, and may not reflect what is actually paid.

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<sup>17</sup> This estimate is probably the smallest rather than the average “wendy house”. These were backyard dwellings built on to or part of the informal tin dwellings – not the larger wendy houses found in the yards of formal townships.

To obtain comparable indicators of value, the payments made for land were equated to a per hectare value. The survey indicates that backyard dwellers in Khayelitsha are paying R 350,000 equivalent per ha to the landlord for the right to put up a wendy house. This is not even a purchase price for *de facto* ownership, but a purchase price for usufruct, as the land still ‘belongs’ to the *de facto* ‘owner’. One wendy-house dweller claimed she was paying as much as R400 per month which would mean a monthly rental income to the landlord that is equivalent to R 800,000 per ha per month. Those in the larger, informal shacks were paying a one-off R 425,000 equivalent per ha, usually to street committees, to erect their dwellings. Although this does not of course include legal title, it *does* reflect more secure rights to the property, given the link to the community, i.e. the street committees. There was a wide variation in the reported payments required in order to access the land. One respondent claimed to have paid the equivalent of R 1.95 million per ha but others paid what equated to less than R 200,000 and still others claimed there was no payment required. These estimates are indicators that the poor, in most instances, are paying for access to land. A deeper investigation is required to obtain more reliable data, especially when calculating the “price” of land including the transaction costs and risks.

#### **4.3 Difficulties in Accessing Land and Housing**

Most of the respondents indicated that they had a lot of trouble accessing land and that they had been on a waiting list for a long time. This was corroborated by some of the answers to what they would advise a newcomer to the settlement who wanted access to land or housing – “I’m gonna tell him to go to another place as I see the place is full. There’s no place here now.” However for the most part the respondents advised newcomers to go to the street committee, and many indicated that they had got their place through them: “In this area you do not put your house as you want. You must went to asked the street committee”; “It was difficult for me because I wasn’t know what is the situation for this area, but the best thing I went to the committee to get land”; and “The

problem in this area you do not allow to put the house in the space when you see, you suppose to go to the committee and pay.”

Others indicated that social capital was important: “He must put her name on waiting list or socialize with street committee”. The same person also stated that “the people who helped me they ask the lot of money and also owner of the plot”. Some indicated that they had little trouble obtaining a place: “I didn’t get difficulty for land” – but others complained that “The waiting list takes a long time, I’m still waiting for my house. I paid R 1000 to be on that waiting list;” and “It take 6 years, it cost R 2000 and you pay it in the councilor”. While most were open about going to the street committee and some about paying access fees for their space, a few indicated that they obtained their land or houses privately – “You must pay the person at the back”; “I was so hard for me because I was open my ears to someone who sell the house”.

When asked what the government should do to address the housing crisis, there were conflicting opinions – where 40% said that government should build more houses; another 39% said that government should provide free, serviced land; and the rest wanted the government to provide more land and also build houses. When respondents were asked what they wanted to do about their housing condition, the preponderance of answers favored building more rooms. This reflects the reluctance to consider entering the land and housing market. People do not see it as a valid option.

#### **4.4. What Is the Alternative?**

An alternative would be to provide the poor with access to serviced land on which they can erect a temporary dwelling which, over time, they can improve. This land needs to be reasonably close to basic services including schools and transport to the main centers of employment. The best incentive to encourage people to build better is to assist the market so that the value of the properties and investments is increased and is visible. A certification program could be put in place, similar to a Standards Association, which would provide buyers with some security and encourage people investing to ensure that, over time, they meet the standards that will make their homes more marketable.

The evidence generated by the Khayelitsha pilot survey is consistent with the hypothesis that the shortage of housing creates a situation where the poor pay for access to land on which to erect shelter and that, despite the lack of *de jure* rights, there is a land market evolving. The assessment is consistent with the hypothesis that many of those living in the informal townships are able and prepared to invest in housing. The indication that people in the informal sector are paying around R400 000 per ha on average and up to R1.95 million equivalent per hectare for land, warrants investigation into the hypothesis that the poor may be paying even more than the rich for access to land. To make it more inequitable, the poor do not even hold title to that land. If the price of the unserviced land, adjacent to existing shacks, and rented or sold for wendy houses is compared to the land prices being paid by land developers for un-serviced land, they are probably paying more per square meter. In Belhaar, an area northeast of Khayelitsha, an unserviced 8 ha plot was sold for the equivalent of only R75000 per hectare in May 2006. These are all issues which require more comprehensive investigation and a representative sample with data collected to test specific hypotheses.

New evidence points to an increasing market in township (high-density suburb) houses further warranting investigation into the opportunities and constraints facing house markets for the poor. Houses in the townships (particularly those with formal recognition of rights) are reportedly selling at their asking price and in half the time that it takes houses to sell in the wealthy suburbs. Property agents have opened offices in Mitchells Plain and Khayelitsha with monthly turnovers more than double what they had expected (Wines, 2006). These houses are selling for between R140-500,000 depending on the neighborhood and quality of the house. Other anecdotal evidence also indicates a growing market in the poorest neighborhoods with shack houses, and confirms the findings in our pilot survey that people are paying rent for their land and housing. Recent research indicates that some 1.1 million backyard shacks are rented and that they contribute significantly to the incomes of some of the poorer and older, unemployed households that rent them out (Joffe, 2006).

It is also important for government to address the issue of savings and the ability of the poor to form associations that can provide support to housing. More than 60% of respondents indicated that they belong to burial societies and 48% indicated they belong to stokvel. Stokvel are informal group savings schemes that are widely used and were listed as a saving form by 48% in the Khayelitsha survey. Stokvel are made up by a group of self-selected people who jointly save an agreed amount each a month. Different groups have different approaches to both the saving tool and distribution mechanism. Some groups allocate all the money saved in a particular month to one group member<sup>18</sup> but the majority of groups open a joint savings account and then withdraw the funds at the end of the year. The purpose of saving in a group could be to allow them to meet the minimum balance and saving criteria of banking institutions but with the low minima at Post Office Savings bank, this is unlikely. Informal discussion indicates that the main reason is to impose discipline on one's own savings habits and to reduce the transaction (including information) costs of depositing the savings. The discussions indicated that if you have an obligation to a stokvel you are precluded from withdrawing the funds and have to keep up the saved amount. This reduces temptation for consumption and can reduce social obligations. In the informal group discussions it appeared that most of the savings are in accounts that receive little or no interest. Policies need to be established that provide greater incentives for saving and government could perhaps create linkages between the stokvel savings schemes and the financing of low-income people's housing projects.

## **5. Policy Implications**

In this paper, we examined two complementary issues on land and housing in South African cities. First, we considered whether the provision of subsidized housing via the RDP program (a) had stimulated complementary private investment in housing and neighborhood quality improvements; and (b) was associated with allocation of resources towards education expenditures and long term human capital formation. Second, we examined whether the poor paid anything for land and housing in informal settlements or to get on the waiting list for formal housing. If they did, this would open the way to

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<sup>18</sup> This is a type of rotating savings and credit scheme. For an analysis of the economic efficiency of such schemes see Besley et al. (1993) and van den Brink and Chavas (1997).

consider an alternative to the current strategy of providing subsidized housing through the RDP. The alternate strategy is to promote the availability of serviced land for individual development by the poor. In particular, given severe capacity constraints in the public sector to provide subsidized housing, there may be options for private developers to step in if serviced land is made available.

Our analysis of RDP beneficiaries and non beneficiaries did not show that public housing provision generated multiplier effects in terms of complementary private investments in housing maintenance or upgrading. We find that the main impact of subsidized housing comes through an indirect channel – by stimulating expenditures on education. The indirect effect of RDP housing was tested using a formal model. Using data from the GHS 2005, we found that households receiving a subsidized house can re-allocate remaining resources for other uses – and we observe a stimulus to increase education expenditures. However, we do not observe any differences in household consumption expenditures on food, transport, and clothes between households who receive subsidized houses and those who do not.

In light of these findings, we make the following suggestions for policy innovations, which could be piloted and evaluated for impact. First, upwardly revise and increase the flexibility of the housing grant structure in such a way that beneficiaries are able to make a trade-off between location and value of the housing. Some households would opt for a location closer to work and spend less on the value of the house, while others would prefer more housing value in a location further away. Second, review the 8 year “no sale and no rental policy” with a view to substantially reducing this time period or eliminating this prohibition all together. Experience from other countries demonstrates that community oversight in the selection and monitoring of beneficiaries could compensate for the loss of administrative control.

Results from our sample pilot survey in Khayelitsha, Cape Town show that poor households are paying for land to put up shacks in informal settlements. This means that informal sector residents are already incurring considerable expenditures – but these only

have limited long term payoffs. By providing serviced land and property rights, there appears to be considerable potential for translating these expenditures into tradable assets. Hence, our third policy suggestion is to pilot a new program of “sites and services” under which a developer makes suitably located and serviced land available, which eligible beneficiaries can then purchase and develop further by making use of the RDP subsidy.

Providing access to serviced land would also reduce the opportunities for the economic and social rents that are currently undermining the housing schemes and the grant system. However, as long as land remains in short supply, the system will remain vulnerable to corruption. One way to address this is to have publicly posted waiting lists. To make land legally available to most people needing housing will require a massive investment in identifying land, providing services and in providing access. In the interim, however, human and financial resources need to be concentrated on providing serviced land to a significant proportion of the population, rather than on building a limited number of houses for the few.



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