Backyarding in South Africa

Jan K. Brueckner, UC Irvine

Claus Rabe, Independent Consultant, Cape Town

Harris Selod, The World Bank

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What is backyarding?

Many papers study housing and land-use patterns in the developing world.

But the economics literature hasn’t recognized an important emerging land-use pattern in South Africa: BACKYARDING.

Informal structure is constructed and rented out in backyard of an owner-occupied, government-subsidized house.

Rental payment also covers access to water, electricity and a toilet.

Backyarding is thus a mixture of informal and formal tenure modes.
What is backyarding?
Efficient response to increase in demand

Backyarding allows densification of cities without a wholesale redevelopment of the housing stock.

Represents an efficient response to increase in demand for access to urban livelihoods.

Also suggests overly generous use of land in original construction of government-subsidized housing.
Owner decides how much of backyard to rent out.

Trades off rental income against loss of yard-space consumption.

Higher rent per square foot:
- raises opportunity cost of own-consumption of yard space, tending to reduce it
- raises income, tending to increase own-consumption

Net effect ambiguous but negative under standard preferences.

So higher rent means less own-consumption and more backyarding.
Rent will be higher closer to job centers where backyarders commute.

Generates following hypothesis: BETTER JOB ACCESS RAISES BACKYARDING.

Tested for city of Cape Town using:

- satellite data yielding count of backyard structures per parcel
- job data by transportation zone
- trip times between transportation zones

Job and trip data yield number of jobs within 45, 60, or 90 minutes of each parcel.
Data
Findings

Use Poisson regression, appropriate for count data, and four covariates:

- **job access** measure (different travel time cutoffs tried)
- **dummies** for two zoning categories where backyarding likely
- **parcel area**

Larger parcels can accommodate more backyarding but may mean higher owner income and **less backyarding**.

Results strongly support job-access hypothesis.

Also show more backyarding on smaller parcels.
## Findings

### Marginal Effects

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Change</th>
<th>% Effect on expected number of backyarders</th>
</tr>
</thead>
<tbody>
<tr>
<td>parcel_area</td>
<td>50m² decrease</td>
<td>10% increase</td>
</tr>
<tr>
<td>sr1</td>
<td>increase from 0 to 1</td>
<td>61% increase</td>
</tr>
<tr>
<td>sr2</td>
<td>increase from 0 to 1</td>
<td>220% increase</td>
</tr>
<tr>
<td>jobs_lowinc_60_taxi</td>
<td>1 std. dev.</td>
<td>11% increase</td>
</tr>
</tbody>
</table>

In absolute terms, the 11% job-access impact translates to an extra backyarder for every 30th parcel.
Conclusion

Paper offers first study in the economics literature of overlooked new LDC land-use pattern that mixes informal and tenure modes.

Results can help predict policy impacts.

For example, transport improvements that raise job access would increase backyarding in affected areas.

Programs that raise labor incomes of homeowners would reduce it.