Density & Development Economics

Nadine Fogarty
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STRATEGICECONOMICS
Density is “In”

Multiple surveys show that between 30 and 55 percent of Americans want to live in mixed use, mixed density places

-“Option of Urbanism” by C. Leinberger
Common Perception of Density

[Graph showing the relationship between Density and Developer Profit in Jillions]

- Y-axis: Developer Profit in Jillions
  - $0.0
  - $1.0
  - $2.0
  - $3.0
  - $4.0
  - $5.0
  - $6.0

- X-axis: Density
  - 5
  - 10
  - 15
  - 20
  - 25
  - 30
  - 35
  - 40
  - 45
  - 50
  - 55

Graph indicates a positive correlation between Density and Developer Profit.
Primer on Financial Feasibility Analysis

**What is a land residual analysis?**

- A basic measure of financial feasibility and the amount of value that could be generated by development
- Estimated value of the land given the income that could be generated from development
- A way to determine the “highest and best use” of a property
Financial Analysis How-To

**Step 1:**
Generate Assumptions About:
- Development Costs
- Expected Project Revenues

**Step 2:**

Value Based on Expected Revenues from Development

\[ \text{Value} = \frac{\text{Expected Revenues}}{\text{Total Development Costs}} \]

= Land Residual Value
Simplified Land Residual Analysis

Total Revenues - Development Costs = Residual Land Value
How Does it Work in the Real World?

High-rise Life/Safety
Type V Construction

<table>
<thead>
<tr>
<th>Stories</th>
<th>5-Story</th>
<th>7-Story</th>
<th>7-Story</th>
<th>9-Story</th>
<th>11-Story</th>
<th>13-Story</th>
<th>17-Story</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underground Parking</td>
<td>55'</td>
<td>75'</td>
<td>85'</td>
<td>100'</td>
<td>120'</td>
<td>140'</td>
<td>180'</td>
</tr>
<tr>
<td>40 Units</td>
<td>50 Units</td>
<td>50 Units</td>
<td>56 Units</td>
<td>68 Units</td>
<td>80 Units</td>
<td>104 Units</td>
<td></td>
</tr>
</tbody>
</table>
Average Revenue per Unit

<table>
<thead>
<tr>
<th>Stories</th>
<th>Revenue (Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Story</td>
<td>$300,000</td>
</tr>
<tr>
<td>7-Story</td>
<td>$400,000</td>
</tr>
<tr>
<td>7-Story</td>
<td>$500,000</td>
</tr>
<tr>
<td>9-Story</td>
<td>$600,000</td>
</tr>
<tr>
<td>11-Story</td>
<td>$700,000</td>
</tr>
<tr>
<td>13-Story</td>
<td>$800,000</td>
</tr>
<tr>
<td>17-Story</td>
<td>$900,000</td>
</tr>
</tbody>
</table>

Note: Revenue increases with the number of stories.
Average Cost per Unit

- 5-Story
- 7-Story
- 7-Story
- 9-Story
- 11-Story
- 13-Story
- 17-Story

<table>
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<tr>
<th>Stories Underground Parking</th>
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<tr>
<td>5-Story</td>
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<td>$500,000</td>
</tr>
<tr>
<td>7-Story</td>
<td>$550,000</td>
</tr>
<tr>
<td>9-Story</td>
<td>$650,000</td>
</tr>
<tr>
<td>11-Story</td>
<td>$750,000</td>
</tr>
<tr>
<td>13-Story</td>
<td>$850,000</td>
</tr>
<tr>
<td>17-Story</td>
<td>$900,000</td>
</tr>
</tbody>
</table>

- Units
  - FA R
  - 68 80 104
  - 4.0 4.9 4.9 5.6 6.5 7.5 9.5
  - 40 50 50 56
  - 120' 140' 180'

- Stories
  - Five story
  - Seven story
  - Seven story
  - Nine story
  - Eleven story
  - Thirteen story
  - Seventeen story
Residual Land Value (per Square Foot Land)

Residual Land Value
(per Square Foot Land)

5-Story  7-Story  7-Story  9-Story  11-Story  13-Story  17-Story

- $0
- ($100)
- ($200)
- ($300)
- ($400)
- ($500)

($500) ($400) ($300) ($200) ($100) $0 $100 $200 $300 $400 $500
US Building Cost Index, 1996 - 2008

Source: Turner Construction Index
US Single Family House Prices, 1996 - 2008

Source: Case-Shiller House Price Index
How Can We Influence What’s Feasible?

1. Promote Quality Mixed-Use Neighborhoods

Price Premium – 10 to 20%
How Can We Influence What’s Feasible?

2. Provide Access to High Quality Transit

Lower parking requirements = lower development costs

- plus -

Transit is a desirable neighborhood amenity for both residents and resulting in a premium
## How Can We Influence What’s Feasible?

### 4. Encourage Places with “Character”

<table>
<thead>
<tr>
<th></th>
<th>West University</th>
<th>Montrose</th>
<th>Midtown</th>
<th>Katy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2006 Average Sales Price</strong></td>
<td>$591,215</td>
<td>$277,310.01</td>
<td>$274,209</td>
<td>$136,726</td>
</tr>
<tr>
<td><strong>Placemaking Grade</strong>*</td>
<td>A</td>
<td>A-</td>
<td>B</td>
<td>D+</td>
</tr>
</tbody>
</table>

*Placemaking grade source: “State of Place” project by Wulfe and Company. 002 Houston Magazine, April, 2005.*
Houston Example

- Townhome
- 4 Stories over Podium
- "Dallas Donut"
- 6 Stories +

Graph showing residual land value per SF (in $) against units per acre. The graph includes data points for different types of development, such as townhomes and podiums, at varying unit densities.
Impact of 15% “Placemaking” Premium and Lower Parking Ratios

Townhome
4 Stories over Podium
“Dallas Donut”
6 Stories +

Residual Land Value per SF

Units per Acre

$0

$50

($50)

($100)

($150)

($200)
St. Paul Central Corridor Example

Legend:
- Light Rail Stop
- Light Rail Transit
- Residential
- Commercial
- Industrial
- Civic
- Vacant/Misc.
- Underutilized

Condominiums
Live/Work Lofts
Townhouses
Current

Future Vision
Projecting Future Feasibility

- **Low Density Apartments**
- **High Density Apartments**
- **Condos**
- **Live/Work**
- **Townhouses**


- 1-5 years in the future
- 5-10 years
- 10-15 years
Food for Thought

1. Planners and communities need to be realistic about what kinds of development are likely to be feasible in both the short and long term.

2. The best way to enable higher density development is to think more broadly than individual projects and to promote quality, mixed-use neighborhoods.

3. Community benefits, including affordable housing, should be dealt with holistically, not on a project by project basis.

4. Transit is an important opportunity.

5. In some places, government may need to take a more proactive role in encouraging density.