Land Value Capture for Transportation: Potential versus Practice
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With assistance from:
Liam Donaldson, Ayushman Banerjee, Guy Miscampbell
To TIF or Not to TIF

- Principles of Political Economy
- The two are not the same
  - Land Value Capture
  - Tax Increment Financing
- What we have done
  - Reviewed academic literature
  - Reviewed case studies
  - Reviewed development along Sheppard Corridor
  - Analyzed TIF potential using the Rothman model
- Questions that motivated us
  - How have TIFs been used?
  - The size and scope of TIFs in practice
“Suppose that there is a kind of income which constantly tends to increase, without any exertion or sacrifice on the part of the owners: those owners constituting a class in the community, whom the natural course of things progressively enriches, consistently with complete passiveness on their own part.
“In such a case it would be no violation of the principles on which private property is grounded, if the state should appropriate this increase of wealth, or part of it, as it arises.
“This would not properly be taking anything from anybody; it would merely be applying an accession of wealth, created by circumstances, to the benefit of society, instead of allowing it to become an unearned appendage to the riches of a particular class.

- *Principles of Political Economy*

- John Stuart Mill, 1848
Let’s start with definitions - LVC

**Land Value Capture**

- The land value improves because of the provision of new public infrastructure
- A tax is imposed on the incremental land value
- This is in addition to the base land value

Example:

Base year land value: $420m  
Land values increase by 5% per year  
Current land value: $420 \times 1.05 = $441m  
Tax on base land value @ 1% = $4.2m  
Tax on incremental value @40% = (441-420)\times.4 = $8.4m  
Total tax= 4.2 + 8.4 = $12.6m

Lawrence C. Walters, 2012
Let’s start with definitions - TIF

**Tax Increment Financing**

- The assessed property value is fixed in the year TIF is implemented
- Any incremental increase in assessed value is taxed to service the debt
- Once debt is serviced, the total assessed value returns to the municipal authorities
- Easier to understand from the graph (next slide)
Exhibit 1. TIF Assessed Value (AV) Over Project Life

- **Base AV**: AV belongs to all other taxing districts in project area
- **Incremental AV**: Incremental real property tax belongs to TIF authority to pay project costs
- **New Post-Project AV**: Total AV now belongs to all taxing districts in project area

- **Assessed Value (AV)**
  - Created
  - 25 year TIF
  - Terminated
TIF in Five Steps

1. Initiation: Establish an authority
2. Formulation: Establish TID boundaries, redevelopment plans
3. Adoption: Public disclosures and discussions
4. Implementation: Construction and financing
5. Termination
Now back to Toronto
• TIF is on the table
• What about LVC?
Tax Increment Financing - Practice

• Background in North America
• What types of infrastructure/developments have been funded by TIF?
  • Commercial, Industrial, Residential, Mixed use
• What TIF impacts have been evaluated?
  • Change in property values
  • Change in employment creation
  • The potential for new tax revenue
• Additional concerns
  • Gentrifying or pushing the poor out?
  • But-For test
  • Selecting the site: What the Heck-man?
Site selection biases

City Region

TIF municipality

TIF Districts

Distressed

Non-distressed

Non-TIF municipality

Non-TIF Districts

Distressed

Non-distressed

Distressed

Non-distressed
The Tiff about TIF

Things to consider
- TIF can relocate development to TID
  - It could be a zero sum game
- TIF may leave less funds for other services
- TIF impacts are not always positive
- Sample selection bias
- Economic cycles affect outcomes
Sheppard East
Sheppard East

• What can we learn from the development potential of a subway for residential development?
• Sheppard East is the only relevant project
  • Potential for redevelopment is often higher around subways than around Heavy Regional Rail.
  • Greater willingness for high-density developments?
• What changed in the corridor? (treated)
• What happened to similar corridors? (controls)
Study Area

EAs approximating neighbourhoods

- Treated: Sheppard East
- Controls:
  - Steeles
  - Finch
  - York Mills
# Sheppard East – Time line

<table>
<thead>
<tr>
<th>Year</th>
<th>Developments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sixties and seventies</strong></td>
<td>Conversations about building more transit in the area date back to the sixties. With increasing political opposition towards constructing highways and sustained population growth, calls for developing more public transit options gain traction and eventually materialize into formalized plans by the eighties.</td>
</tr>
</tbody>
</table>
| **1985** | 1. TTC delivered *Network 2011* Transit Plan to Metro Toronto ($2.7 billion project including Downtown Relief Line, Eglinton West, and $1 billion for Sheppard extending to Victoria Park)  
2. Provincial Liberals Won Elections |
| 1986 | Metro Council Approved Plan (Province to pay 75% of cost)  
2. But Sheppard is deprioritized because of high cost projections  
3. NDP wins elections |
| **1990** | 1. Sheppard Subway Environment Assessment published as part of original Let's Move initiative  
2. NDP announces new Transit Plan: Rapid Transit Expansion Program.  
Sheppard is now included and made a priority along with Eglinton West. |
| 1992 | Sheppard Subway Environment Assessment published as part of original Let's Move initiative  
1. Sheppard Subway officially shortened to Don Mills  
2. Construction of Sheppard continues but other projects are cancelled.  
Any plans for Sheppard extension beyond Don Mills are also cancelled. |
| 1994 | **Groundbreaking of Sheppard Subway**  
1. Conservatives win elections  
2. Construction of Sheppard continues but other projects are cancelled. |
| 1995 |  
1996 | Sheppard Subway officially shortened to Don Mills  
2002 | Construction completed at approximately $2 billion (5.4 km of track)  
2007 | Transit City Released - Light Rail proposed for Sheppard East  
2010 | Mayor Ford cancels plan |
# Demographics & Housing

## 2011 data

<table>
<thead>
<tr>
<th>Study Area</th>
<th>Sheppard</th>
<th>Finch</th>
<th>Steeles</th>
<th>York Mills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissemination Areas</td>
<td>39</td>
<td>36</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>Total Population</td>
<td>35,399</td>
<td>33,733</td>
<td>23,878</td>
<td>21,483</td>
</tr>
<tr>
<td>Population Average (DA)</td>
<td>845</td>
<td>937</td>
<td>645</td>
<td>632</td>
</tr>
<tr>
<td>Distance to CBD (km)</td>
<td>12.8</td>
<td>14.9</td>
<td>16.9</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total Private Households</strong></td>
<td><strong>15,266</strong></td>
<td><strong>14,037</strong></td>
<td><strong>8,604</strong></td>
<td><strong>7,895</strong></td>
</tr>
<tr>
<td>Private Household Average (DA)</td>
<td>382</td>
<td>390</td>
<td>233</td>
<td>232</td>
</tr>
<tr>
<td>Average Household Income (Average for DAs)</td>
<td>86,429</td>
<td>99,738</td>
<td>135,770</td>
<td>250,089</td>
</tr>
<tr>
<td>% employed (Average for DAs)</td>
<td>89</td>
<td>92</td>
<td>91</td>
<td>91</td>
</tr>
<tr>
<td>% Dwellings by Period of Construction</td>
<td>1981 to 1990</td>
<td>16</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>% Dwellings by Period of Construction</td>
<td>1991 to 2000</td>
<td>5</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>% Dwellings by Period of Construction</td>
<td>2001 to 2005</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>% Dwellings by Period of Construction</td>
<td>2006 to 2011</td>
<td>12</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>% owner (Average for DAs)</td>
<td>56</td>
<td>79</td>
<td>82</td>
<td>80</td>
</tr>
<tr>
<td>% renter (Average for DAs)</td>
<td>42</td>
<td>21</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>% visible minority (Average for DAs)</td>
<td>58</td>
<td>68</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td>% immigrants (Average for DAs)</td>
<td>58</td>
<td>64</td>
<td>58</td>
<td>45</td>
</tr>
</tbody>
</table>
Canadian Economy: The slow growth reality

GDP growth rate

Canada
## Housing Types, 2011

<table>
<thead>
<tr>
<th>Study Area</th>
<th>Sheppard</th>
<th>Finch</th>
<th>Steeles</th>
<th>York Mills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total dwellings by Type</strong></td>
<td>15266</td>
<td>14037</td>
<td>8604</td>
<td>7895</td>
</tr>
<tr>
<td>Single family detached</td>
<td>15.03</td>
<td>18.57</td>
<td>48.77</td>
<td>56.83</td>
</tr>
<tr>
<td>Semi detached</td>
<td>0.90</td>
<td>1.93</td>
<td>3.38</td>
<td>2.75</td>
</tr>
<tr>
<td>Row houses</td>
<td>9.80</td>
<td>8.58</td>
<td>9.33</td>
<td>7.84</td>
</tr>
<tr>
<td>Apartment - 5 plus floors</td>
<td>68.55</td>
<td>64.94</td>
<td>27.31</td>
<td>25.35</td>
</tr>
<tr>
<td>Apartmens 1 to 4 floors</td>
<td>4.59</td>
<td>4.27</td>
<td>6.58</td>
<td>5.51</td>
</tr>
<tr>
<td>Apartment - Duplexes</td>
<td>1.03</td>
<td>1.63</td>
<td>4.59</td>
<td>1.67</td>
</tr>
</tbody>
</table>
## TIF model: inputs

### Sheppard East Corridor

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total housing units</td>
<td>15,266</td>
</tr>
<tr>
<td>Build since 2001</td>
<td>3,358</td>
</tr>
<tr>
<td>Average price, Oct. 2015, TREB C14</td>
<td>$735,417</td>
</tr>
<tr>
<td>Total value (millions)</td>
<td>$2,470</td>
</tr>
<tr>
<td>Increase in stock per year</td>
<td>0%</td>
</tr>
<tr>
<td>Increase in prices</td>
<td>4.50%</td>
</tr>
<tr>
<td>Property tax rate</td>
<td>0.70%</td>
</tr>
<tr>
<td>Assessed value Ratio</td>
<td>0.85</td>
</tr>
</tbody>
</table>
TIF model: outputs

Assuming: Property values always appreciate over time

|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|      |
| TIF (NPV)                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | $230.3 |
Lessons from Sheppard East

- Significant increase in residential construction in the corridor
- Did subway cause it?
- If property taxes remain frozen at $14 million from 2016 onwards, who will subsidize the services in the corridor?
- What if the price appreciation is slower?
- TIF is serviced by renters or owners. Who has paid, and by how much, for the appreciation in land values?
How big a TIF?
## Size of TIFs

<table>
<thead>
<tr>
<th>Tax Increment Financing District (TID)</th>
<th>Location</th>
<th>Date Established</th>
<th>Size (Acres)</th>
<th>Total TIF Bonds Issued</th>
<th>Length of TIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arundel Mills Mall (Route 100 TID)</td>
<td>Hanover, Maryland</td>
<td>November, 1999</td>
<td>394</td>
<td>$28,000,000</td>
<td>10 years</td>
</tr>
<tr>
<td>Beltline Tax Allocation District</td>
<td>Atlanta, Georgia</td>
<td>2005</td>
<td>6,500</td>
<td>$1,660,000,000</td>
<td>25 years</td>
</tr>
<tr>
<td>Burlington Waterfront</td>
<td>Burlington, Vermont</td>
<td>January, 1996</td>
<td></td>
<td>$16,810,350</td>
<td>20 years</td>
</tr>
<tr>
<td>Downtown Berlin</td>
<td>Berlin, Wisconsin</td>
<td>September, 2008</td>
<td>21.3</td>
<td>$14,589,661</td>
<td>27 years</td>
</tr>
<tr>
<td>East Village</td>
<td>Calgary, Alberta</td>
<td>Spring, 2007</td>
<td>49</td>
<td>$357,000,000</td>
<td>N/A</td>
</tr>
<tr>
<td>Burlington Waterfront</td>
<td>Portland, Oregon</td>
<td>August, 2000</td>
<td>3990</td>
<td>$335,000,000</td>
<td>20 years</td>
</tr>
<tr>
<td>Investors Group Field</td>
<td>Winnipeg, Manitoba</td>
<td>June, 2013</td>
<td>2 properties</td>
<td>$75,000,000</td>
<td>25 years</td>
</tr>
<tr>
<td>Lewiston Wal-Mart Distribution Centre</td>
<td>Lewiston, Maine</td>
<td>January, 2002</td>
<td>13</td>
<td>$5,800,000</td>
<td>25 years</td>
</tr>
<tr>
<td>North Macadam</td>
<td>Portland, Oregon</td>
<td>June, 1999</td>
<td>402</td>
<td>$288,562,000</td>
<td>20 years</td>
</tr>
<tr>
<td>Parole Town Centre</td>
<td>Annapolis, Maryland</td>
<td>December, 1999</td>
<td>1,500</td>
<td>$8,300,000</td>
<td>10 years</td>
</tr>
<tr>
<td>River District</td>
<td>Portland, Oregon</td>
<td>June, 1998</td>
<td>351</td>
<td>$224,780,350</td>
<td>20 years</td>
</tr>
<tr>
<td>Sullivan Centre</td>
<td>Chicago, Illinois</td>
<td>2000</td>
<td>2.35</td>
<td>$24,400,000</td>
<td>10 years</td>
</tr>
<tr>
<td>The Sports, Hospitality and Entertainment District</td>
<td>Winnipeg, Manitoba</td>
<td>April, 2012</td>
<td>11 blocks in Downtown Winnipeg</td>
<td>$25,000,000</td>
<td>5 years</td>
</tr>
<tr>
<td>UWinnipeg Commons Housing Complex</td>
<td>Winnipeg, Manitoba</td>
<td>February, 2015</td>
<td>1 property designated</td>
<td>$2,550,000</td>
<td>15 years</td>
</tr>
<tr>
<td>Hudson Yards</td>
<td>New York City, New York</td>
<td>2005</td>
<td>28</td>
<td>$2,400,000,000</td>
<td>30 years</td>
</tr>
</tbody>
</table>
Hudson Yards: Background

- **2005:** Mayor and NYC City Council approved the redevelopment plan for the Hudson Yards Financing District: a 28 acre mixed-use development in Midtown Manhattan.
- Hudson Yards will include over 17 million square feet of residential and commercial space, with over 100 shops and restaurants and approximately 5,000 residences. 14 of the 28 acres will be dedicated public open space. Hudson Yards will also include a luxury hotel and a public school.
- The City used payments in lieu of taxes (PILOT) financing.
- Hudson Yards Infrastructure Corporation (HYIC) was created to finance property acquisition and infrastructure improvements, including extension of the No. 7 subway line.
- On December 21, 2006 HYIC issued $2 billion in bonds.
- On October 19, 2011, HYIC issued another $1 billion in bonds.
Hudson Yards: Risks

- The risks inherent in TIF are **cost overruns or revenue shortfalls**. Hudson Yards is experiencing both.
- In 2004, the subway extension was estimated at $2 billion. By 2013, the estimated cost increased to $2.4 billion.
- NYC normally pays 5% of subway construction costs. However, to proceed with the Hudson Yards plan, the City agreed to pay 100%.
- Issuing bonds through HYIC rather than through *general obligation bonds* has cost an additional $1.32 billion.
- The recession in 2007 delayed construction and affected real estate growth needed to generate revenues.
- The NYC Independent Budget Office (IBO) reported that between 2006 and 2012, revenues were 40% less than projected: **$170 million revenue out of a projected $283 million**
- The City contributed an **additional $374 million** to the project over that period.
Smart Track: $2.5b
Mitch Rothman model
Smart Track Funding

- “To fund the SmartTrack line, Tax Increment Financing revenue will be leveraged over 30 years as development activity and assessed values increase along a new transit route.
- “It is estimated that $2.5 billion in present value dollars can be raised over that time.
- “All revenue estimates are based only on projected new office development in three precincts within the following districts along the SmartTrack line: the Central Core; the East Don Lands site; and Liberty Village.
- “Tax Increment Financing revenue will likely prove higher than $2.5 billion once development near other stations and residential development are added.”
Rothman Model – original

Three Sites:

<table>
<thead>
<tr>
<th></th>
<th>Downtown</th>
<th>Liberty Village</th>
<th>Don Lands</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New SFT</td>
<td>12m</td>
<td>15m</td>
<td>15m</td>
<td>42m</td>
</tr>
<tr>
<td>Total Value</td>
<td>$6.5b</td>
<td>$8.09b</td>
<td>$8.09b</td>
<td>$22.6b</td>
</tr>
<tr>
<td>PV of Taxes</td>
<td>$441m</td>
<td>$505</td>
<td>$505</td>
<td>$1,451m</td>
</tr>
<tr>
<td>TIF (PV)</td>
<td>$282</td>
<td>$323</td>
<td>$323</td>
<td>$929m</td>
</tr>
</tbody>
</table>
Rothman Model – Revised Simulations

Three Sites:

<table>
<thead>
<tr>
<th></th>
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<th>Liberty Village</th>
<th>Don Lands</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New SFT</td>
<td>18m</td>
<td>30m</td>
<td>30m</td>
<td>78m</td>
</tr>
<tr>
<td>Total Value</td>
<td>$9.8b</td>
<td>$14.4b</td>
<td>$14.4b</td>
<td>$38.6b</td>
</tr>
<tr>
<td>PV of Taxes</td>
<td>$1,237m</td>
<td>$1,489</td>
<td>$1,489</td>
<td>$4,215m</td>
</tr>
<tr>
<td>TIF (PV)</td>
<td>$792</td>
<td>$953</td>
<td>$953</td>
<td>$2,698m</td>
</tr>
</tbody>
</table>

Commercial Property Tax increased from 1.6% to 3%

Current inventory of office space in downtown Toronto: ~75 million SFT
Final thoughts

Dollars and Cents
• Smart Track costs are preliminary
  • Costs could be much higher or lower
• Raising $2.7b in TIF could be a challenge
• No precedent for such size and scope
• Will LVC be part of the equation?

Transit Planning
• Does Toronto need more transit? YES!
• Will Smart Track help improve transit ridership by being the best use of scarce public dollars?
• If yes, it should be seen independent of how much TIF/LVC can generate?
Questions