

Financial Instruments: Supply- and Demand-Side Examples

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Instruments

- Supply Side
 - Value capture
 - Joint development
 - Impact fees
 - Various densification bonuses, etc.
- Demand Side
 - Location efficient mortgages

A “Supply Side” Example: Impact Fees

- A form of ‘exaction’
 - requirement for real estate developer contribution to infrastructure
 - ‘in-kind’ exactions – actual provision of infrastructure
 - typically on-site
 - ‘financial’ exactions – payments towards infrastructure provision (impact fees)
 - typically off-site (i.e., trunk roads)
- Exactions can provide for efficient infrastructure *delivery*
 - Developers face the costs resulting from growth
- Cannot guarantee efficient infrastructure *use*
 - Combination with user fees better justified
 - Or, second best: making impact fees represent cost differentials among development types and locations

Impact Fees v/s Value Capture

- Work in opposite direction, hinge – ultimately – on different precepts.
- Value capture (or valorization)
 - recaptures increased property values due to public investments in infrastructure (or other government interventions)
 - for example, betterment taxes
 - most often used in already built-up areas
- Impact fees
 - charge for the direct impacts real estate projects will have on infrastructure
 - typically used for new *developments* in high growth areas

Impact Fees - Precedents

- Pioneered in the US during the 1970s
- Originally adopted on a trial-and-error basis, often producing legal battles
- Today, generally legally enabled

In the Developing World

- Various forms of exactions exist, not well documented, often not well-enforced
- Jakarta Indonesia has had a betterment tax (valorization) since 1972
- Most Latin American countries have national legislation allowing valorization
- Colombia's *contribución de valorización* in use since at least the 1960s

Transport Impact Fees

$$\text{Impact Fee} = \frac{(\text{ADT}_i * \text{TL}_i)/2 * C - \text{Credits}_i}{\text{Cap}}$$

ADT = Average daily trip ends for land use i

TL_i = Average trip lengths for land use i

Cap = Capacity of lane at planned LOS standard.

C = Cost of right-of-way acquisition and construction per km of road lane.

Credits_i = Discounted, PV of the stream of road user revenues to finance capital costs for each use, i.

9 Principles for Assessing Impact Fee Use

<i>Principle</i>	<i>Explanation</i>
1. Guidance	On the type of facilities eligible for impact fee financing and the conditions for use as supplement to existing financing sources
2. Demonstrated Need	For impact fees within the context of a capital improvement plan, comprehensive plan
3. Links to Exactions	Clarifying relationship to “in-kind” exactions
4. Rational “Nexus”	Between real estate project and infrastructure needs
5. Demonstrated Responsibility	That new infrastructure needs result from new development (not existing deficiencies); requires appropriate planning process and cost apportioning

9 Principles for Assessing Impact Fee Use

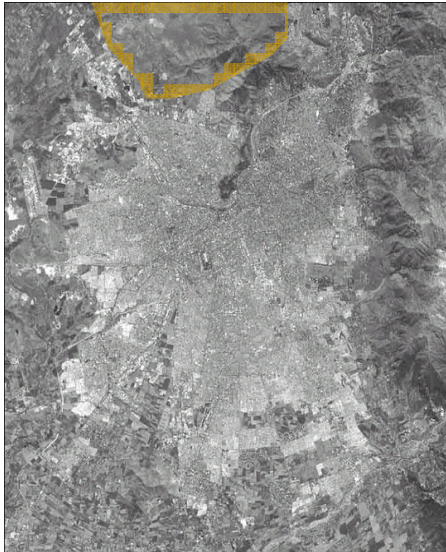
<i>Principle</i>	<i>Explanation</i>
6. Clear Benefits	Establishing the connection between fee expenditure and benefits: 1) reasonable expectation that contributing projects will use the facilities; 2) facilities must be proximate and available in reasonable time
7. Minimal Housing Cost Impact	Designing the fees and payment schemes to minimize the ultimate impacts on housing affordability, i.e. through: avoiding exacting fee at permitting stage, delaying levy until project is occupied; allowing payment over time, at subsidized interest rates
8. Uniformity	Assessing the fees on each development in a similar way
9. Mitigate Adverse Effects	Considering the effects of the fees on other policy priorities (i.e., affordable housing, industrial development).

Source: Derived from Lillydahl, *et al.* 1988, The Need for a Standard State Impact Fee Enabling Act, *JAPA*.

Transport Impact Fees in Santiago

- In-kind exactions date to at least early 1970s
 - More recently formalized in regulations
- In early 1990s, 2 rapidly growing suburban Municipalities turned to an ad hoc roadway impact fee scheme
 - to finance trunk road connections to the rest of the urban area
- More recently, national authorities are using impact fee financing in response to massive suburbanization in the north of Santiago
 - Currently attempting to formalize their use

Suburbanization in Chacabuco



Impact Fees in Chacabuco

(Northern Santiago)

National authorities developed transport plan

- Minimum network to satisfy peak period demand from 14 proposed real estate projects
 - with a total of 40,000 households by 2010)
- Accounted for each real estate projects' size, location, socio-economic characteristics and subsequent travel demand
- US\$106 million in non-concessionaire road infrastructure
- 62 Kms of roads, several major interchange upgrades

Impact Fees in Chacabuco

- Based on each real estate project's peak demand (veh/hour)
- Developed an index of infrastructure "consumption"
 - to allocate total infrastructure cost to individual real estate projects.
- Travel demand from low income housing exempted from fees
- Government ultimately agreed to cover 39% of total costs

Assessing Santiago Experience

1. Guidance
 - Currently does not exist; ad-hoc, case-by-case negotiation.
2. Demonstrated Need
 - Transport plans for Chacabuco developed in accordance with Chilean planning principles.
3. Links to Exactions
 - No clear differentiation in agreements between impact fees and exactions.
 - Further complications from disconnect with environmental impact fees.
4. Rational Connection
 - Nexus between real estate projects and the infrastructure needs has been shown.
5. Demonstrated Responsibility
 - Without the planned real estate projects, the road infrastructure would likely not be required.
 - However, complications inherent to modeling the system
 - Treatment of future developments (or expansions to existing developments) not clear.
 - Other user charges ignored (i.e., no consideration of credits).

Assessing Santiago Experience (cont'd)

6. Clear Benefits
 - Clearly established link between the expenditure of fees (development of infrastructure) and benefits to the individual projects.
7. Minimal Housing Cost Impact
 - Upfront payment means fees will likely be passed on to homebuyers.
 - Knowing the true effects requires more analysis.
8. Uniformity
 - Current application has been uniform
 - Uncertain whether it will continue (in Chacabuco, elsewhere, or for other land uses).
9. Mitigate Adverse Impacts
 - Exempting low income housing closely allies with housing policy.
 - Use in Chacabuco may positively affect ostensible policy of controlling urban expansion.
 - Impacts on urban and regional form and efficiency require more study.
 - The effects on attempts to introduce congestion pricing remains to be seen.

Fulfillment of Principles in Chacabuco Case

Principle	Fulfilled?
1. Guidance	No
2. Demonstrated Need	Yes
3. Links to Exactions	Partially
4. Rational Connection	Yes
5. Demonstrated Responsibility	Partially
6. Clear Benefits	Yes
7. Minimal Housing Cost Impact	Uncertain
8. Uniformity	Uncertain
9. Mitigate Adverse Effects	Partially

Recommendations for Improvements

1. Over-arching legal guidance required
 - Will also help ensure a uniform approach in future applications.
2. Clarification of relationship to other financial instruments
 - To clarify the difference between impact fees and other user charges and the potential need for credits.
3. Better understanding of the ultimate incidence
 - who will ultimately bear the burden (i.e., the owners of undeveloped land, new or existing residents, landowners)?
4. Consider extending impact fees to non-residential land uses
5. Better assess the effects on other public policy goals and potential integration with other relevant instruments

Lessons for Other Developing Countries

1. Administrative capacity and growth management controls
 - perhaps the most important prevailing condition necessary
2. Government concerns with “efficiency” and “fairness”
 - Chilean authorities have consistently shown a predisposition towards self-financing of transportation infrastructure and services
3. Attention to unintended and unanticipated consequences
 - i.e., potential to displace growth to other parts of the metropolitan area; the relation of impact fees to other user charges
4. The public finance context
 - Best to deploy impact fees within a clear and transparent public finance framework, in order to better justify the fees, understand their relationship to other charges, and to calculate any credits

Final Considerations

- Impact fee use can precede explicit legal authorization
- Santiago (like the US case) may not be the best example of viability in developing countries
- Impact fees most promising for cities with concentrated areas of large-scale new real estate projects, with few alternatives
- Structuring fees to promote “transport-efficient development” and/or to finance public transport infrastructure (e.g., dedicated busways)
- Cannot solve such challenges as housing provision, employment

A “Demand Side” Example: Location Efficient Mortgage

- Also known as “Smart Commute Mortgage”
- Basic Theory:
 - Driving less increases household disposable income
 - Can qualify for better mortgage characteristics (higher mortgage-to-income qualifying ratio)
 - Basically attempt to capitalize on the location-transport cost trade-off

Goals

- Housing and Community Development
 - Increase income diversity in neighborhoods
 - Increase homeownership
- Land Use Planning
 - Reduce expansionary pressures (reduce relative costs of infill sites)
 - Increase demand for mix uses
- Transportation Planning
 - Increase public transport and NMT demand
 - Even in case of self-selection; increase the possibilities of sites to “select” to (increase supply)

Players

- Mortgage industry
- Transit agencies and others
- Community development organizations

A “Demand Side” Example: Location Efficient Mortgage

Underlying Analysis

- VMT and HH auto ownership predicted
 - f (household income, persons/HH, HH density, pedestrian factor, transit access)
- VMT and HH auto ownership translated into expenses
- Costs subtracted from a “base case”

Decision Process

1. Household relocating (potentially in the market)
2. Interested in buying (in the market)
3. Attracted to “location efficient” areas
4. Qualified to buy
5. Interested in LEM

Hypothetical Example

Item	Without LEM	With LEM
Applicant Income (per month)	\$2,100	\$2,100
Available for down payment	\$6,000	\$6,000
Housing to Income Ratio Limit	28%	28%
Transport Savings (per month)	n.a.	\$653
Mortgage Available	\$76,000	\$115,611

Major Risks...

- LEM has the effect of reducing the down payment as share of property value
- Assumes household will
 - Reduce vehicle ownership
 - Reduce transport expenses

“Testing the Rhetoric”

- Basic hypothesis
 - Location efficiency reduces mortgage risk
- How to test?
 - “Efficient” locations should be negatively correlated with mortgage default rates, *ceteris paribus*
- Data
 - 8,000 mortgages from 1,000 census tracts in Chicago
- Analytic Approach
 - Probability of Default = f (Sociodemographic and other controls, location efficient characteristics)
- Findings
 - **Location factors have no influence on default rates**

Blackman, 2002; Blackman & Krupnick, 2001

Interpretations & Implications

Possible Explanations

- Savings not large enough to influence
 - Counter-factual (location inefficient location) is inaccurate
 - VMT and ownership model wrong
- Or, real estate market already capitalizing financial benefits.
 - i.e., value already “captured”

Implications

- Might still have other benefits
- But, must be weighed relative to costs

Whither the LEM?

- Housing Market...

North Point

The Passaic Studio

Assignment III