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Innovative Tax Policy for Infrastructure Financing and Economic Development: Experiences and Lessons for China

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Tax Increment Financing

An innovative tool to finance infrastructure investments and improvements needed for economic development in specific geographic areas, usually blighted areas.

A way to use future gains in taxes to finance the current improvements that will create those gains.

Uses of TIF

Since its first use in California in 1952, 48 states plus D.C. have passed legislation authorizing the use of tax increment financing (TIF) by local governments.

Used to finance public infrastructure, land acquisition, demolition, utilities and planning cost, and other improvements including sewage expansion and repair, curb and sidewalk work, street, water supply, park, environmental remediation, parking, landscaping.

Elements of TIF

- TIF is a highly flexible development tool based upon increased property taxes and in some states, sales taxes
- TIF is a designated district targeted for “distressed” or “blighted” areas
- TIF splits the future property taxes for the targeted areas into two streams from 10 to 30 years. Base Value vs Tax Increment
- TIF is used for infrastructure investment and improvements

Concepts of TIF

A public infrastructure project

- An increase in land and property value (Tax Base)
- Increased tax revenue (Tax Increment)
- Used by TIF to pay for infrastructure or finance debt/bond
- Improvements in distressed areas and growth

TIF creates funding for public projects that may otherwise be unaffordable to localities.

Process of TIF

- Step 1: Determine need, area eligibility and financial feasibility of an area
- Step 2: determine blight or underdeveloped conditions, and “but for” test
- Step 3: Draft TIF plan and agreements with developers
- Step 4: Conduct public hearing
- Step 5: Create TIF district, draft and adopt new ordinances
- Step 6: Prepare and issue debt instruments and establish tax rates
- Step 7: Build tax Increment or borrowed fund to pay for infrastructure
- Step 8: Retire debt
- Step 9: dissolve the TIF district at the end of TIF period.

Benefits of TIF

1. An example of Public-Private Partnership
2. A tool of correcting market failure
3. A self-financing mechanism
4. An effective economic development tool
5. A flexible and politically attractive tools

Criticism of TIF

- A Zero-Sum Game
- A Budgeting Manipulating Instrument used by cities
- Abused use of TIF
- Complex and costly
- Lack of voters' participation
- An ineffective economic development tool

Is Tax Increment Financing an Effective Economic Development Policy?

What is the effect of TIF on housing Value?

Hedonic Pricing Model:

$$V = f(H, N, TIF)$$

Where V=sales prices of houses

H = housing characteristics

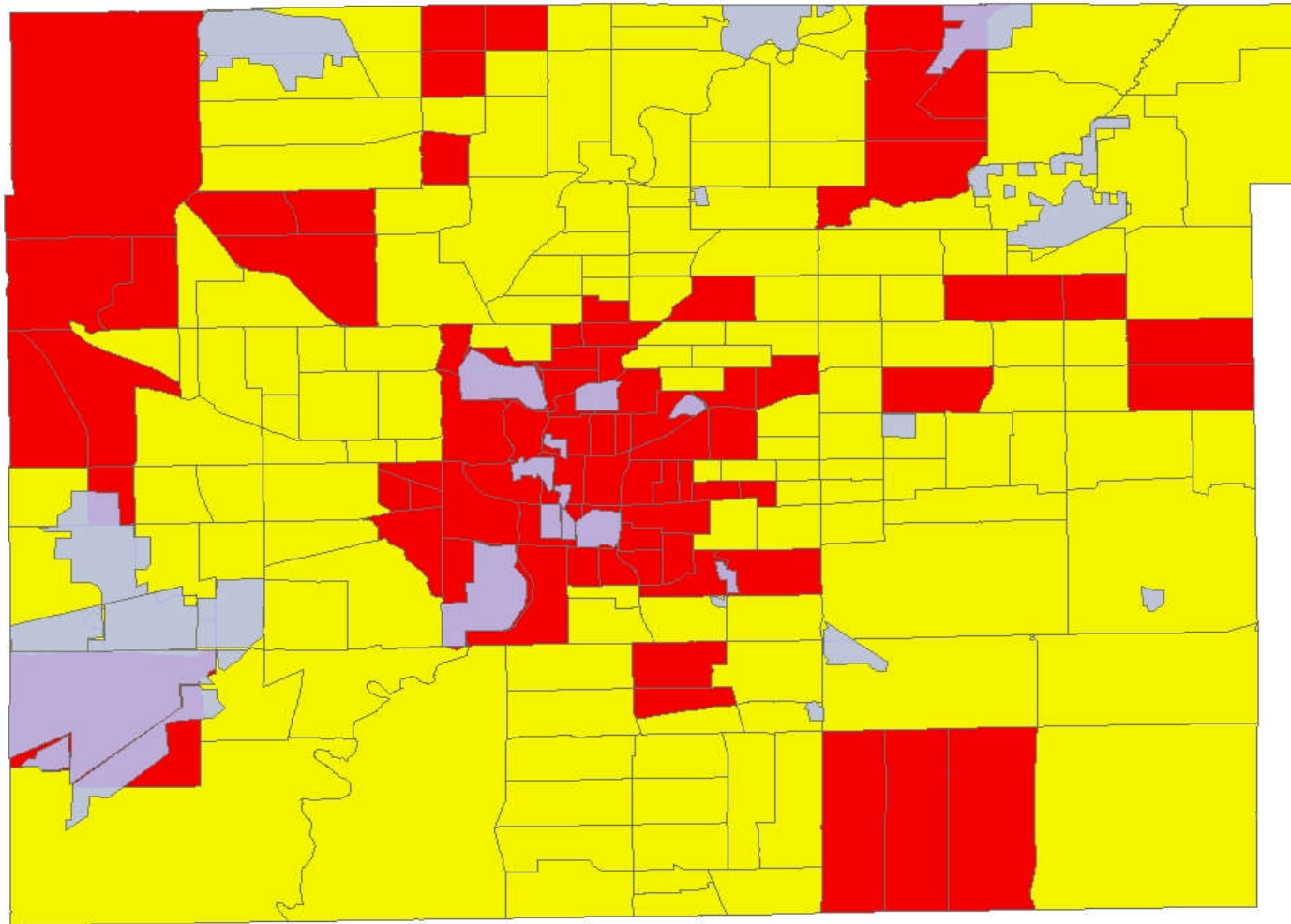
N = neighborhood characteristics

TIF = TIF dummy

Characteristics for Tracts With/ Without TIF Programs in Indianapolis

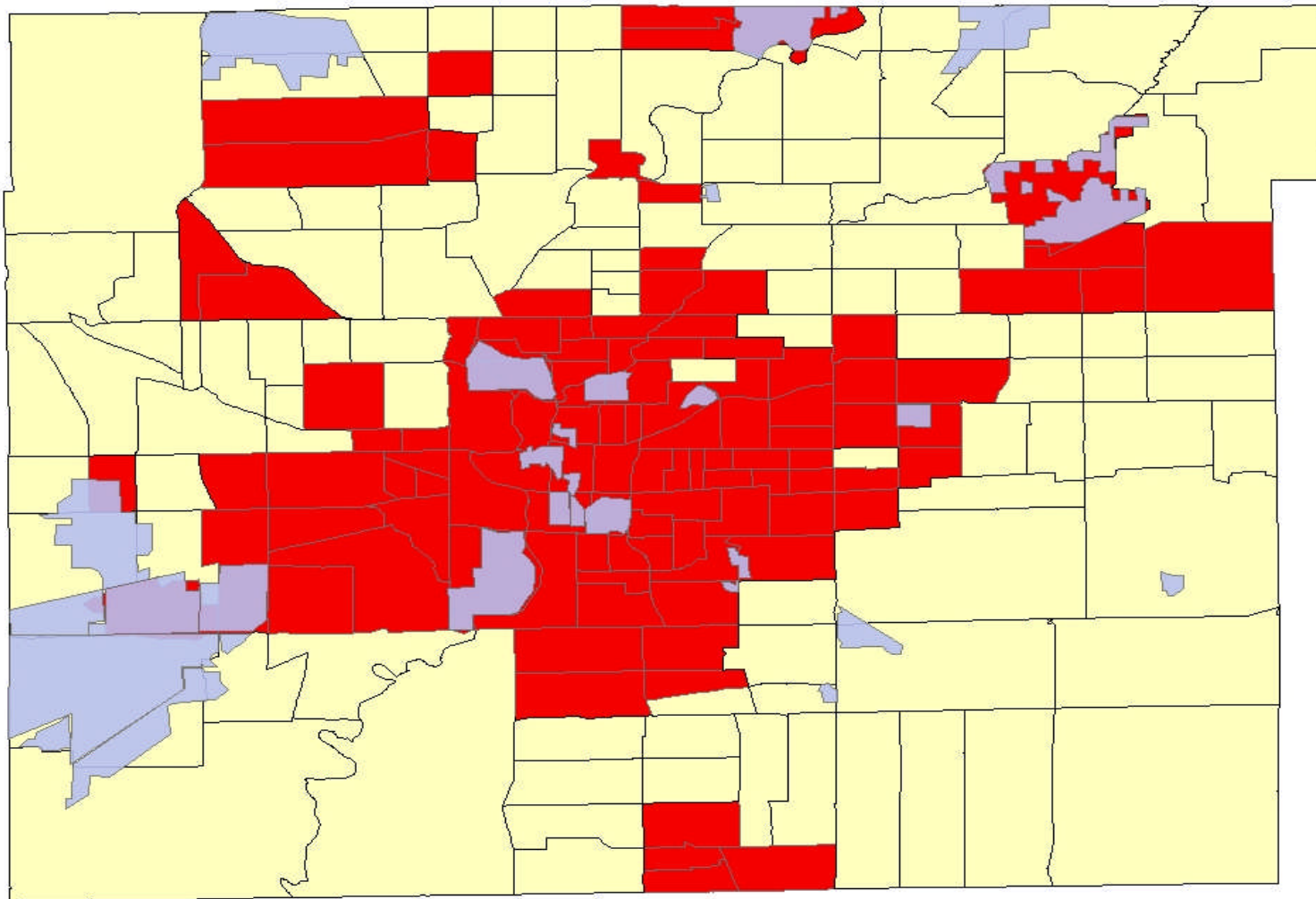
| All Tracts | Number of Tracts | Mean vacancy rate in 1980 | Mean household income in 1980 |
|---------------------------------|-------------------------|----------------------------------|--------------------------------------|
| With TIF | 65 | 10.25% | 17,396 |
| Without TIF | 146 | 6.89% | 18,451 |
| High vacancy rate Tracts | | | |
| With TIF | 31 | 17.04% | 13,210 |
| Without TIF | 44 | 13.19% | 16,025 |
| Low vacancy rate Tracts | | | |
| With TIF | 34 | 4.06% | 21,213 |
| Without TIF | 102 | 4.18% | 19,497 |

Distribution of TIF Districts and High / Low Vacancy Rate Tracts, Indianapolis



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Distribution of TIF Districts and High / Low Medium Household Income Tracts



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| Variables | Coefficient | t-Value |
|-------------------------------|--------------------|-----------------|
| In TIF | 0.18 | 4.17 |
| In TIF 0.5 mile | -0.01 | -0.42 |
| In TIF 1 mile | 0.02 | 1.14 |
| Lnhincome | 0.26 | 4.74 |
| Unemployment | 0.01 | 6.55 |
| Vacancyr | -3.09 | -16.16 |
| Blackr | -0.25 | -7.95 |
| College | 0.01 | 6.98 |
| Bathrooms | 0.20 | 12.00 |
| Rooms | 0.01 | 2.53 |
| Lnttft | 0.32 | 9.33 |
| Lnhage | -0.14 | -12.53 |
| Basement | 0.06 | 2.93 |
| Stories | 0.13 | 5.30 |
| Garage | 0.14 | 13.51 |
| Tax | -1.11 | -7.83 |
| Cool | 0.35 | 14.71 |
| Brick | 0.15 | 5.90 |
| Porch | 0.21 | 9.71 |
| Acre_5 | -0.00 | -0.01 |
| Acre1 | 0.24 | 1.76 |
| Cons | 5.42 | 8.80 |
| Adjusted R² | 53.68% | obs=3546 |

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First Difference Model

$$\begin{aligned} \ln V_a - \ln V_b = & (\alpha_0 - \beta_0) + \delta D + (\alpha_{1a} - \beta_{1b}) \\ & (X_{1a} - X_{1b}) + \dots + (\alpha_{na} - \beta_{nb}) (X_{na} - X_{nb}) + \\ & (\varepsilon_a - \varepsilon_b) \end{aligned}$$

Choice Model

$$D^* = f(Z)$$

Two-stage Estimation Results with control for Sample Selection Bias

| Variable | coefficient | t-value |
|------------|-------------|---------|
| TIF | 0.36 | 2.10 |
| Droomn | 0.06 | 0.50 |
| Doldhouser | -0.92 | -3.77 |
| Dvacancyr | -0.33 | -0.59 |
| Dlnhincome | 0.33 | 1.58 |
| Dlnpop | 0.17 | 0.73 |
| Dunemployr | 1.85 | 2.79 |
| Dpovertyr | -1.27 | -2.50 |
| Dblackr | -0.31 | -0.85 |
| Lambda | -0.25 | -2.41 |
| cons | 1.03 | 4.50 |

Findings

1. TIF increased the sales price of houses located in TIF districts.
2. TIF significantly increased the growth rates of median housing value of the census tracts in the Center township of the City of Indianapolis between 1980 and 2000. Without TIF, the estimated house value growth may not occur.
3. The empirical evidence shows that TIF as an infrastructure financing tool successfully improved the community environment and economic base in the targeted areas that made the housing value increase.

Policy Implications for China

- 1. Using future tax increment in land and property for infrastructure financing can be an effective tool of economic development in China by provincial and local governments.**
- 2. TIF can be used to stimulate growth in targeted geographic areas without incurring large tax burden or government subsidy or foregone tax revenues or land sales.**
- 3. TIF can be financed by revenues other than property taxes and fees.**

Policy Implications for China

4. TIF is suitable to finance affordable housing
5. TIF can be used to finance an environmental cleanup
6. TIF may be useful as a tool for post-disaster redevelopment and reconstruction for Sichuan after earthquake.
7. TIF can be misused and needs a close monitoring and enforceable regulation provision from sub-national governments

The End

Thank You!