Identifying Impediments to Market-rate and Affordable Housing Construction: A Mixed-Methods Exploration

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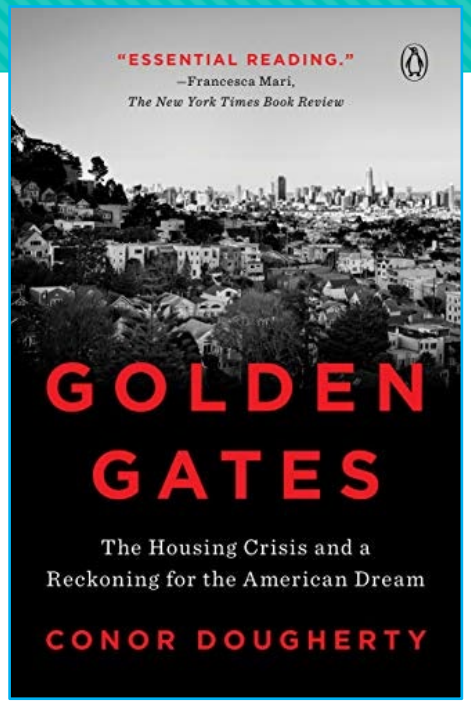
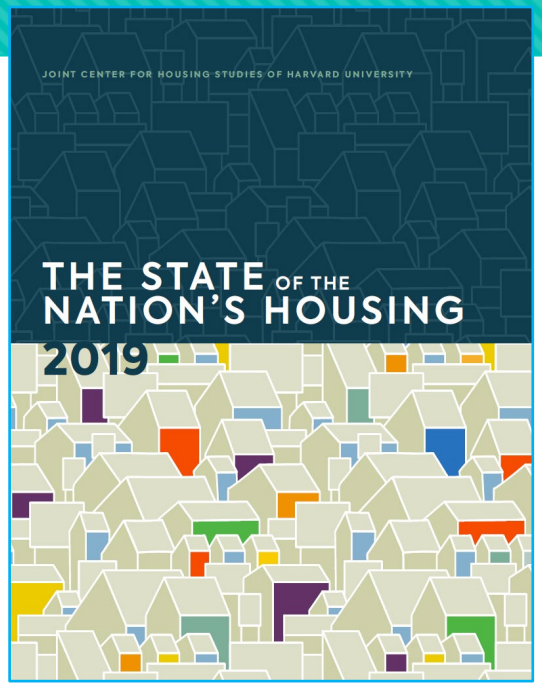
Housing Supply Limitations & Affordability Making News





Housing Constraints and Spatial Misallocation

Chang-Tai Hsieh

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Agenda

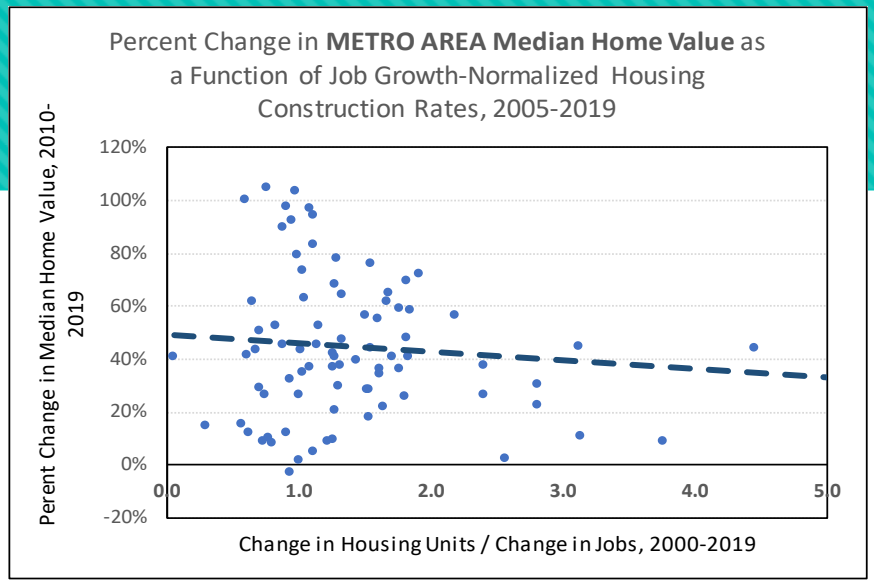
1. **Research Question**: Why do (Normalized) Housing & LIHTC Production Levels Lag in Some States and Metro Areas ? *Does it Matter?*
2. Theoretical and Practical Explanations for Housing Supply Lags
3. A Multi-methods Approach
4. Modeling Housing Construction and LIHTC Utilization Rates
5. Survey Design
6. Preliminary & Selected Survey Results
7. Cautious Conclusions

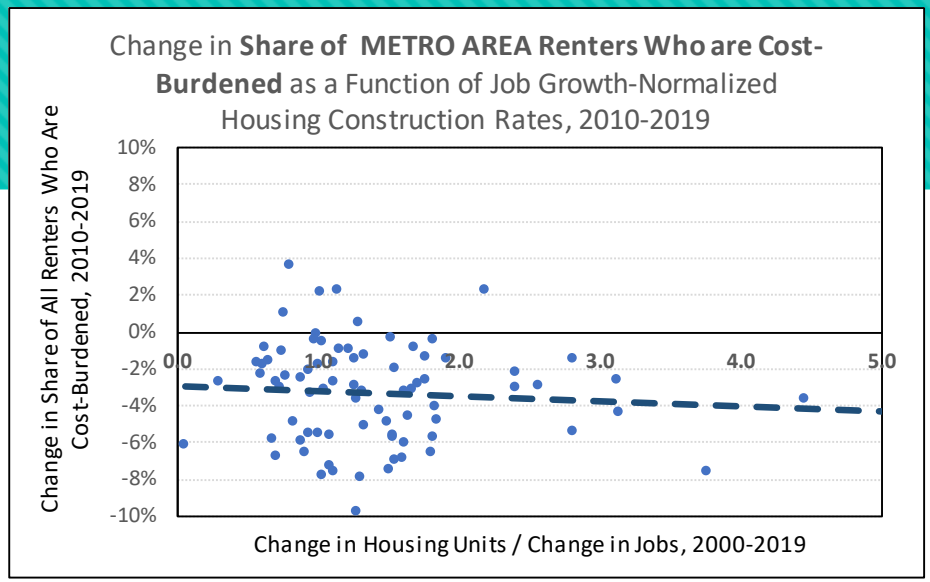
1.
State and Metro-Level Variations in Market-rate and LIHTC Production

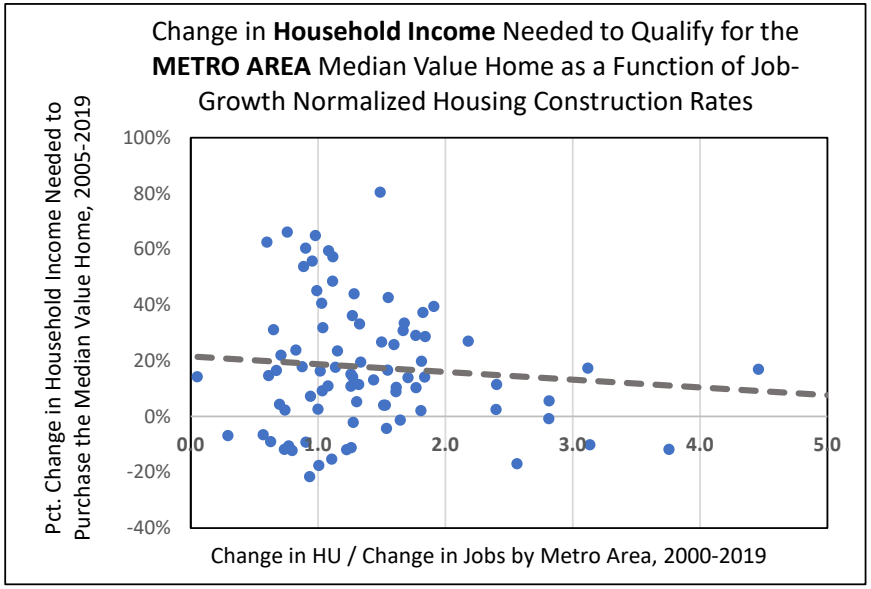
Top & Bottom Ten Housing Producers

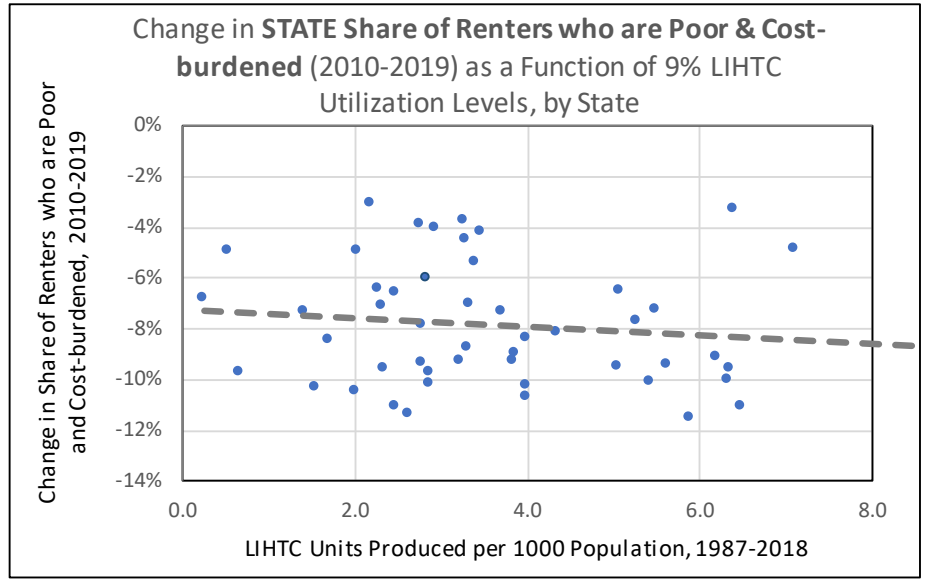
	Metro Area	New Homes per Additional Job, 2000-2019	State	9% LIHTC Units per 1000 Population, 1987-2018
Top Ten	Birmingham AL	137.2	North Dakota	10.9
	Greensboro NC	33.6	District of Columbia	8.2
	Providence RI	12.6	Virginia	7.1
	Rochester NY	6.8	South Dakota	6.5
	Fayetteville NC	6.8	Wyoming	6.4
	Worcester MA	6.6	South Carolina	6.3
	Wichita KS	5.2	North Carolina	6.3
	Tulsa OK	4.7	Mississippi	6.2
	Memphis TN	3.9	Oregon	5.9
	Chicago IL	3.3	Washington	5.6
	US Average	**1.1**	**State Average**	**3.8**
Bottom Ten	Albany-Schn-Troy NY	0.6	Connecticut	2.3
	Baltimore MD	0.6	Montana	2.2
	San Francisco-Oakland CA	0.6	Nevada	2.0
	Honolulu HI	0.6	Ohio	2.0
	San Diego CA	0.6	Illinois	1.7
	Lexington KY	0.5	Indiana	1.5
	Salt Lake City UT	0.5	Pennsylvania	1.4
	New York City-Newark NY-NJ	0.4	Georgia	0.7
	Fresno CA	0.3	Delaware	0.5
	Grand Rapids MI	0.0	New Jersey	0.2

Does Housing Supply Really Matter? **YES**









2. Explanations for Lagging Housing Production

Impediments to Market Rate & LIHTC Production? Theoretical & Practical Explanations

Market Rate Housing Construction

1. **Lack of suitable reasonably-priced land.**
2. **Restrictive zoning & difficulties gaining development approvals.**
3. Temporary difficulties finding qualified construction labor at a reasonable price.
4. Bank and/or investor reluctance to lend on housing construction projects.
5. Pre-emptive actions by dominant firms to tie-up approved land or qualified construction labor;
6. Rapid shifts in the market, leaving some segments with too much supply and others with not enough.

9% LIHTC Utilization

1. Lack of suitable land or development sites.
2. Restrictive zoning & difficulties gaining development approvals.
3. Excessive construction costs.
4. **Difficulties finding remaining "gap finance" sources (grants and loans)**
5. Inexperienced or inefficient developers who can't produce at scale.
6. QAP and state competitions don't properly reward production scale or efficiency.
7. **Lack of funding resources given the amount of need**.

Minding the Gap:
Alternative LIHTC Financing Scenarios

		Scenario 1	Scenario 2	Scenario 3	Scenario 5
Project Parameters	Annual Credit Rate	9%	9%	9%	**4%**
	Rental Units	40	40	40	40
	Development Cost per Unit	$150,000	**$200,000**	$150,000	$150,000
	Share of Affordable Units	100%	100%	**50%**	50%
	30% Basis Boost	Yes	**No**	No	No
	Investor's Discount Rate	10%	10%	10%	10%
LIHTC Calcualtions	Total Development Cost (excl. land)	**$6,000,000**	**$8,000,000**	**$6,000,000**	**$6,000,000**
	Tax Credit Basis	$6,000,000	$8,000,000	$3,000,000	$3,000,000
	Basis Boost	1,800,000	0	0	0
	Annual Tax Credit Amount	$702,000	$720,000	$270,000	$120,000
	change compared to Scenario 1		*$18,000*	*-$432,000*	*-$582,000*
	10 Year NPV of Tax Credits	$4,313,486	$4,424,088	$1,659,033	$737,348
	change compared to Scenario 1		*$110,602*	*-$2,654,453*	*-$3,576,138*
	Tax Credit NPV as a Share of Basis	72%	55%	28%	12%
	change compared to Scenario 1		*-17%*	*-44%*	*-60%*
	Remaining Gap to be Filled	**$1,686,514**	**$3,575,912**	**$4,340,967**	**$5,262,652**

3. Identifying the Big Impediments: A Mixed-Methods Research Design (Regression & Surveys)

Identifying the Big Impediments: A Mixed Methods Approach

Market Rate Housing Construction

1. Develop **statistical models** of job-growth normalized housing construction by metro area, 2000-2019. *Which factors matter most?*

2. Identify Notable Outliers – Metro Areas that produced More/Less new housing than predicted by the models. *What do they each have in common?*

3. Using the same instrument, **survey metro homebuilding associations and land use/housing planning agencies** to identify key impediments to new home construction. *Do both groups agree?*

4. *How do the survey results match-up with the model results?*

LIHTC Utilization

1. Develop **statistical models** of LIHTC unit production (per 1000 residents) by state, 1987-2019. *Which factors matter most?*

2. Identify Notable Outliers – States that produced More/Less LIHTC units than predicted by the models. *What do they each have in common?*

3. Using the same instrument, **survey state housing finance agencies and notable LIHTC developers** to identify key impediments to new home construction. *Do both groups agree?*

4. *How do the survey results match-up with the model results?*

4. Modeling The Sources of Housing Production Lags

Modeling Market-rate Housing Production Lags

Observations	**Metro Areas > 500K population & 10K+ job growth (N=89)**
Study Period	**2000 - 2019**
Dependent Variable	**Change in housing units / Change in jobs**
Independent Variables	Regulatory stringency measures : Wharton Residential Land Use Regulation Index, Beyond Zoning Regulatory Intensity Index, Govs/100K residents
	Density as a proxy for land availability: Average 2001 population density, 2001density gradient intercept, 2001 density gradient slope
	Metro area economic vitality: 2000-2019 job growth rate, 2005 payroll per job, 2005 GMP per worker,
	Housing market measures: 2005 median home value, 2005 homeownership rates
	Housing construction cost measures: RSMeans local multiplier
	Socio-demographic measures: Median age, median HH income, % living in poverty, % white residents, % adults with Bachelor's degrees, % native borns

Indexing Residential Regulations

Wharton Residential Land Use Regulation Index (WRLURI)

- Based on a 2006 survey of 2,600 planners in all 50 states and 47 metro areas.
- 11 regulatory categories including: (i) stakeholder involvement in local development issues; (ii) state gov. involvement; (iii) state court involvement; (iv) # of entities needed to approve residential rezoning; (v) type and # of non-zoning approval requirements; (vi) # of public comment meetings; (vii) building permit caps? (viii) one-acre minimum residential lot size category? (ix) open space set aside requirement? (x) residential exactions or APFOs? (x) regulatory process duration.
- Factor analysis used to construct a single normalized index ranging from 2.34 (Hawaii) to -1.11 (Kansas)

Beyond Zoning Regulatory Intensity Index (BZRII)

- Additive tabulation of different forms of (state-permitted) local regulations that impinge on use of private property, including: (i) comprehensive planning requirements; (ii) zoning-planning consistency requirements; (iii) state & local EIA requirements; (iv) Legislative annexation review requirements; (v)Use of eminent domain for private purposes; (vi) Areawide TIFs allowed without property owner vote.
- Assembled from Meck, *Growing Smarter Handbook,* 2002)
- Ranges from 0 (Kansas) to 7 (California). Average is 2.8. [Max score to 2 in two categories.

Market-rate Regression Results

Stepwise Regression Analysis: Ratio of **Chng. in Housing Units-to-Chng. in Jobs, 2000-2018**

Independent Variable (Metro scale)	**Standard. Coef.**	**Direction & Importance**	**Interpretation**
NLCD-based Population Density, 2001	-0.72	---	More competition for less land
Job Growth Rate, 2000-2019	-0.59	---	Harder for developers to keep pace with fast growing economies
Local Governments per 100K Population	-0.29	--	Governmental fragmentation > mutual undersupply
Density Gradient Slope, 2001 [Absolute Value]	-0.26	--	Limiting sprawl inhibits production
Beyond Zoning Regulatory Intensity Index (BZRII)	-0.24	--	Fewer exits from the entitlement "maze"
Percent in Poverty, 2006	0.17	+	?
Wharton Regulatory Index (WRLURI)	0.19	+	Effective adaptation?
Percent White, 2005	0.25	++	Racially-segmented market
Population to Housing Unit Ratio, 2000	0.51	+++	Family households drive production
Constant	-1.36		
r-squared	0.52		
Observations	88		

Better & Worse than Predicted

Table 5: Which Metro Areas Produced More and Less Housing than Predicted?

	Metro did Worse than Model Predicted	As Predicted		Metro did Better than Model Predicted
Market Rate Housing Under-Producers	Austin Fayetteville AR Las Vegas Nashville New York City Orlando Riverside-S.Bernardino San Francisco-Oakland Washington DC	Albany NY Baltimore Dallas-Fort Worth Grand Rapids Harrisburg Lexington McAllen Miami Portland OR	Provo-Orem San Antonio San Diego	Bakersfield Fresno Honolulu Modesto Philadelphia Salt Lake City
Market Rate Housing Over-Producers	Charlotte Colorado Springs Daytona Beach Jackson Madison Omaha Sarasota Spokane	Allentown Augusta GA-SC Baton Rouge Buffalo Chattanooga Columbia Kansas City Lakeland Little Rock LA-Long Beach Louisville	Pittsburgh Portland ME St. Louis Norfolk-VB	Boston Chicago Fayetteville, NC Hartford Memphis New Haven Palm Bay Providence Tucson Tulsa Worcester

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Why are these metros doing so badly?

Why are these metros doing so well?

Modeling LIHTC Utilization Rate Lags

Observations	**50 States**
Study Period	**1987-2018**
Dependent Variables	(i) LIHTC Units Produced per 1000 Population; **(ii) New LIHTC Units Produced per 1000 Population;** (iii) 9% LIHTC Units Produced per 1000 Population
Independent Variables	Housing construction cost measures: RSMeans state multiplier; 2018 BLS average carpenter wage by state.
	Regulatory stringency measures : Wharton Residential Land Use Regulation Index, Beyond Zoning Regulatory Intensity Index
	Per capita state housing & community development expenditures.
	Differences in LIHTC unit mix: Pct. 9% LIHTC units; Pct. New LIHTC units.
	Differences in state QAP provisions: Uses formal point system (Yes/no); Income targeting criteria; "Ready-to-go" criteria
	Other factors: Non-profit jobs per capita; homeownership rate median HH income; median income-to-median home value ratio

LIHTC Regression Results

Stepwise Regression Results: New LIHTC Units (1987-2018) per 1000 Population

▼Independent Variable	Coefficient Estimate	Sign. Level	
Population Growth Rate, 1987-2018	**5.02**	***	Higher LIHTC Utilization
Housing Unit-weighted Median Home Value, 2000	**1.91E-05**	**	Higher LIHTC Utilization
RS Mean Construction Cost Premium	**-0.14**	**	Lower LIHTC Utilization
WRLUR Index	**-1.08**	**	Lower LIHTC Utilization
State Population, 2000	Did not enter		
State Housing & CD Spending per capita, 2018	Did not enter		
9% Tax Credit Unit Share	Did not enter		
Average Carpenter Wage Rate, 2019	Did not enter		
Planning Intervention Index	Did not enter		
State Homeownership Rate, 2000	Did not enter		
Housing Unit-weighted Median Rent, 2000	Did not enter		
Non-profit Jobs per capita	Did not enter		
Pct. Government Employment,2000	Did not enter		
Constant	1.218		
r-squared	0.50		
Observations (States)	50		

*** indicates significant at the .01 level

** indicates significant at the .05 level

Better & Worse than Predicted

Which States Produced More or Less New LIHTC Units (per capita) Than Predicted?

	Performance is Worse than Model Predicts	Model & Actual Performance are Similar	Performance is Better than Model Predicts
New LIHTC Unit "Under-Producers"	Indiana Kentucky Connecticut Oklahoma Illinois	Wisconsin West Virginia New Hampshire Maryland Pennsylvania Massachusetts Rhode Island Michigan Alaska North Dakota Maine	
New LIHTC Unit "Over-Producers":	Delaware Nevada Kansas Florida Wyoming Nebraska Alabama Georgia Washington South Dakota Mississippi	Utah Virginia Oregon Tennessee Arkansas North Carolina	Idaho

Why are these states doing so badly?

Why are these states doing so well?

5.
Survey Design & Administration

Side by Side by Side Surveys

Survey	Impediments to New Market-rate Housing Construction	Impediments to LIHTC Production
Analysis Unit	Large metro areas	States
Respondents	Homebuilder Association EDs; COG and County Housing Planners (1 each per metro – 180 total)	Leading LIHTC Developers & State Housing Finance Agency (1each per state – 100 total)
Question Areas	Suburban & Infill site availability	Site acquisition difficulties
	Zoning & permitting impediments	Zoning, permitting & community constraints
	Community relations	Local & state government support
	Land & construction financing constraints	LIHTC program design issues
	Strong & weak market segments	Investor financing issues
	Supply shortages by market segment	State allocation & QAP issues
	Reform priorities	Reform priorities
	45 respondents as of March 15	**50 respondents as of March 15**

6a.
Selected Market-rate Survey Results

Market Rate Production:
Top 3 Regulatory Impediments to New Home Production

	Top 3 Local Regulatory Impediments	All Respondents (N=45)	Home Builders Associations (N=17)	COG & County Planners (N=17)
Suburban Projects	Zoning variances for higher densities	20%	19%	22%
	Rezoning to different residential category	16%	15%	19%
	Rezoning to mixed-use category	13%	11%	19%
	Environmental impact assessment clearance	13%	14%	12%
Infill Projects	Community group sign-off	26%	26%	30%
	Variance or special exception	22%	22%	30%
	Residential rezoning	20%	20%	25%

Market Rate Production:
Preliminary Priorities for Change

Priorities for Removing Production Impediments	All Respondents (N=45)	Home Builders Associations (N=17)	COG & County Planners
Loosen zoning restrictions to allow broader housing mix	80%	88%	82%
Reform INFILL redevelopment and planning process	77%	71%	77%
Loosen zoning restrictions to allow increased density	73%	**82%**	71%
Tax abatements and financial incentives to affordable housing developers	73%	**76%**	65%
Issue additional state and local bonds to subsidize affordable housing development	69%	**76%**	60%
Require local comprehensive plans to identify adequate housing development sites	63%	65%	59%
Reform SUBURBAN zoning and planning process	61%	**94%**	25%
Prioritize housing develop. near transit stations & job centers	48%	20%	**71%**
Encourage builders to experiment with cost-reducing technologies	47%	31%	**63%**
Issue additional state and local bonds to subsidize 1st-time homebuyers	44%	**50%**	40%

6b.
Selected LIHTC Survey Results

LIHTC Program Design Issues:
Preliminary Results

Cited as a Consistent Problem	All Respondents (N=45)	LIHTC Developers (N=19)	State HF Agencies (N=24)
Too much competition for credits, leaving worthwhile projects unfunded	91%	**100%**	83%
State QAP is complicated & confusing	14%	**26%**	4%
Program doesn't sufficiently prioritize maximizing affordable unit output	10%	**18%**	8%
Program doesn't sufficiently prioritize maximizing units for poorest renters	14%	11%	9%
Program doesn't sufficiently prioritize development cost-efficiency	9%	**16%**	0%
The use of "credit-boosting criteria" is complicated & confusing	2%	5%	0%

LIHTC Production
Local Regulatory & Approval Issues

Cited as a Consistent Problem	All Respondents (N=45)	LIHTC Developers (N=24)	State HF Agencies (N=19)
Development impact fees are excessive	30%	**42%**	24%
Frequent neighborhood & community opposition to LIHTC projects	26%	26%	26%
Affordable housing construction is a low local policy priority	26%	32%	18%
Excessive environmental and other impact mitigation costs	24%	**32%**	17%
Frequent difficulties getting zoning & permit approvals	20%	21%	19%
Consistent pressure for public officials to reduce project size or density	10%	11%	10%

7.
Cautious Conclusions

Summary of Findings: Identifying Key Impediments

Market Rate Housing Construction

Model Results:

Rapid & consistent job growth coupled with an intermittent & uneven land supply pipeline, lots of competing local governments, and a highly discretionary and involved development approval process.

Survey Results:

Suburban & Infill: Difficulties rezoning land to residential use, and getting re-zonings/variances to higher-density non-single-family use; Infill: Difficulties getting community group sign-offs

9% LIHTC Utilization

Model Results:

Utilization levels were consistently lower in states with higher construction and land costs and more complicated entitlements processes. Utilization rates were higher in more expensive housing markets.

Survey Results:

Uncertainty over yearly LIHTC allocation outcomes, coupled with not enough 9% tax credit money to fund worthwhile projects.

Lack of state and local gap-filling sources, especially for larger projects.

Potential Policy Responses

To be Identified…