



# **The Art of the Deal: Value Added of Commercial Real Estate Brokerage**

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# Commercial Real Estate Market

Big market, little research



## **United States:**

- USD 16 trillion in commercial real estate assets in 2018
- USD 569 billion in commercial real estate transaction volume in 2018
- Compared to USD 1.9 trillion in M&A activity in 2018

## **Transaction advisory in commercial real estate differs substantially from the residential real estate market:**

- No multiple listing service to share market information
- Information and representation function often unbundled
- Clients are professional organizations

## **Few studies on transaction advisory in commercial real estate**

# Performance and Value-Added of Brokerage

Dominant role in the market



## **Impact of information asymmetry can go different ways:**

- Listings are shared informally, may amplify information asymmetry
- Clients are professional organizations, better access to information

## **Shift towards institutional real estate ownership:**

- Portfolios are becoming increasingly international
- What does this mean for the successful management of such portfolios?

## **Performance of commercial real estate brokerage:**

- Added value largest in complicated deals, involving larger assets with specific sale conditions, and for investors located far away'
- Transaction advisors provide clients with a faster transaction process, not better deal pricing

# Transaction Advisory

## Agency issues and deal performance in M&A's



### **Advisors support professional clients in making large corporate asset deals**

- Main conclusion from early studies is that (top-tier) banks add value by helping clients steer through complicated deals rather than in deal pricing
- Wealth creation in takeovers is contingent on advisor reputation
- Advisor-fixed effects model shows consistent relationship between top and bottom-quartile transaction advisors
- Higher bidder gains when a top-tier advisor is involved in public deals, related to reputational exposure of investment banks
- Lack of advisor added value found in early literature may be attributable to a weak proxy for investment bank quality

**Top-tier banks do most complicated transactions, impact on deal pricing not consistent. Performance of advisors measured indirectly through bidder**

# Transaction Advisory

## Broker performance in the housing market



### **Performance of brokers in the residential market well studied:**

- Larger firms sell faster than smaller rivals, no impact on commission rates
- Commission rate and listing broker size do not affect time on the market, number of listings increases time on the market
- Modest price effects related to local market knowledge of brokers
- Discount brokers less likely to sell and take longer, no impact on pricing
- Compensation structure in real estate brokerage creates agency issues, less informed homeowners may be disadvantaged by real estate agents
- Brokers sell own homes at a premium, liquidity results mixed

**CRE transactions allow us to assess advisors' added value directly, a building-fixed effects model alleviates some endogeneity concerns**

# Data on U.S. Office Transactions

Large set of commercial real estate transactions



**Investigate the relationship between deal performance and liquidity, and commercial real estate brokerage and distant investors**

**Impact of real estate brokers on the transaction value of offices:**

- Data from CoStar Realty Information, Inc. from Q1 2000-Q3 2016
- Detailed information on the asset level, broker involvement

**Information on real estate transaction advisors and investors:**

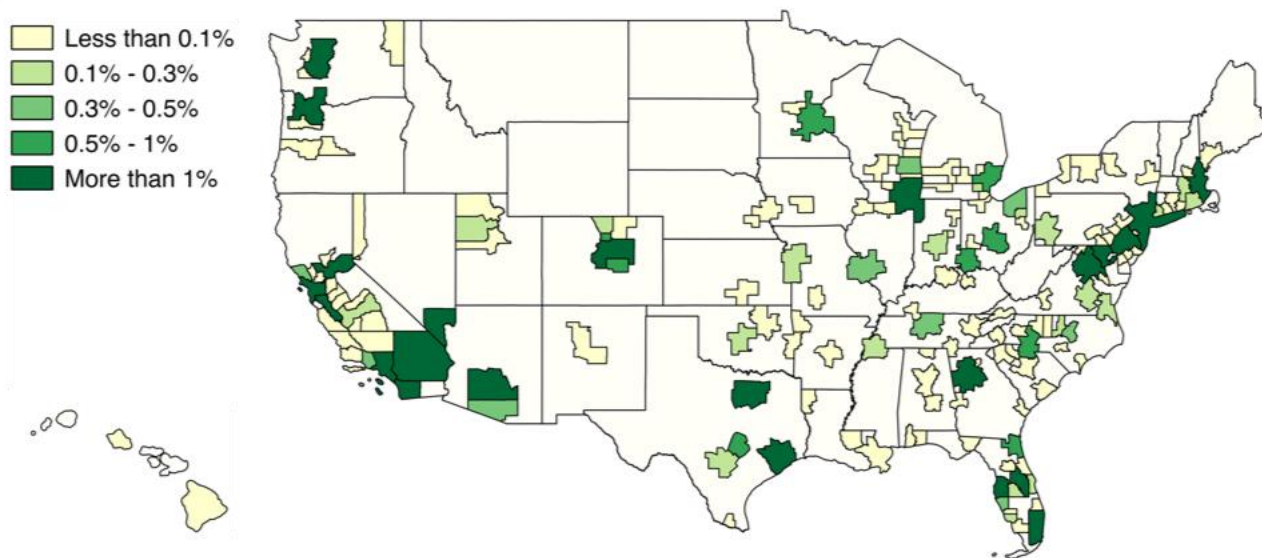
- Transaction advisory company, agent, location
- True buyer and seller name and location (geocoded to calculate distance)

**Office transactions:**

- *Deal price analysis*: 35,524 transactions for 15,210 office buildings
- *Liquidity analysis*: 46,055 transactions for 39,623 office buildings

# Geographical Distribution of Assets

All important office markets represented



- 173 CBSA's included in the sample of 35,524 office transactions
- Most transactions occur in property markets on the East and West coast
- Many transactions in Chicago, Atlanta, Denver and Phoenix



# Data on U.S. Office Transactions – Deal Price

Differences in asset quality and sale conditions across deal types



	Full Sample	For Sale by Owner	Direct Deal	Both Broker	Listing Broker	Buying Broker
Transaction price (million dollars)	14.42 (52.61)	10.45 (51.95)	10.42 (41.95)	8.91 (35.5)	23.65 (70.59)	12.67 (49.04)
Transaction price (dollar per sq. ft.)	199.41 (163.32)	197.08 (175.66)	204.53 (176.47)	193.26 (151.11)	203.80 (164.73)	180.36 (140.66)
Size (thousand sq. ft.)	72.58 (144.66)	52.07 (121.42)	59.22 (130.97)	51.53 (111.83)	106.37 (176.98)	69.67 (137.41)
Land area (acres)	2.92 (6.54)	1.99 (3.62)	2.57 (5.56)	2.39 (6.7)	3.78 (7.14)	3.29 (7.22)
Building class (percent)						
Class A	17.59	11.86	12.48	11.52	28.30	17.06
Class B	53.64	45.52	50.04	57.90	52.68	57.57
Class C	28.76	42.62	37.47	30.58	19.01	25.37
Stories (number)	4.07 (5.88)	3.62 (5.34)	3.61 (5.35)	3.31 (4.54)	5.26 (7.22)	3.73 (5.41)
Any sale condition (percent)	40.65	30.50	31.66	40.63	48.14	47.06
Observations	34,524	1,105	9,276	11,292	11,491	1,360



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# Data on U.S. Office Transactions – Time on the Market

Substantial differences in time on the market across deal types



	<b>Full Sample</b>	<b>For Sale by Owner</b>	<b>Both Broker</b>	<b>Listing Broker</b>	<b>Buying Broker</b>
Time on the market (days)	293.73 (325.78)	339.17 (383.73)	289.67 (314.55)	290.82 (324.76)	271.40 (336.44)
Size (thousand sq. ft.)	51.16 (115.94)	40.11 (106.75)	35.21 (82.49)	71.64 (144.79)	43.87 (80.27)
Land area (acres)	2.59 (8.09)	1.94 (4.54)	2.17 (8.26)	3.18 (8.52)	2.79 (4.94)
Building class (percent)					
Class A	11.39	7.60	6.79	17.32	10.66
Class B	53.65	48.30	55.05	53.15	52.82
Class C	34.97	44.10	38.16	29.53	36.52
Stories (number)	3.24 (4.79)	3.02 (4.53)	2.65 (3.44)	3.95 (5.97)	2.9 (3.74)
Any sale condition (percent)	38.62	29.92	36.93	42.00	41.89
Observations	46,055	3,737	21,813	19,407	1,098

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# Building Fixed Effects Model

Analyzing the value effects of brokerage choice



**Valuation framework relating the presence of transaction advisors to deal pricing, deal complexity, and investor distance:**

$$\log V_i = \alpha + \delta A_i * D_i + \beta X + \gamma T + \varepsilon_i$$

Where:

- $V_i$  transaction price per square foot, or time on the market in days
- $A_i$  indicates the presence of a transaction advisor
- $D_i$  interaction terms reflecting buyer and seller distance (out-of-state)
- $X$  building fixed effects to control for differences in building quality,  $T$  year fixed effects to control for macroeconomic conditions
- $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  are estimated coefficients
- $\varepsilon$  is an error term

**Control for endogeneity between broker quality and asset quality**

# Hazard Model

## Time on the market and transaction advisors



**Empirically assessing the relationship between transaction advisors and time on the market:**

$$h_i(T; Z_i(t)) = h_0(T) \exp(Z_i(t)' \beta), \quad i = 1, \dots, n.$$

Where:

- $H_0(T)$  is the baseline hazard function, which only depends on the time on the market of the building (arbitrary function which allows for a flexible transaction pattern)
- $Z(t)$  vector of covariates for an individual building, including observable building characteristics, macroeconomic conditions, transaction advisors

**Similar approach to Kluger and Miller (1990) and Anglin et al. (2003)**

# Commercial Real Estate Brokerage

No impact on deal pricing, advisors more likely to complete deal



	Transaction Price	Time on the Market
Both buying and listing broker (1=yes)	-0.015 [0.017]	1.028 [0.037]
Buying broker (1=yes)	-0.028 [0.022]	1.114* [0.073]
Listing broker (1=yes)	-0.006 [0.017]	1.124*** [0.040]
Direct deal (1=yes)	0.004 [0.017]	
Sale conditions	yes	yes
Building fixed effects	yes	no
Submarket fixed effects	no	yes
Quarter-year fixed effects	yes	yes
Constant	4.775*** [0.040]	
Observations	34,524	46,055
Number of buildings	15,210	39,623

## Compared to FSBO transactions:

- No impact on deal pricing
- Advisors more likely to close deal

## Disentangling transactions:

- Deal complications, as suggested by the M&A literature
- Pricing and liquidity performance of distant investors, information asymmetry may play a bigger role

## Sale complications include:

- 1031 Exchange (upleg)
- Distress and REO sale

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# Brokerage and Asset Quality

Brokers add value when involved in larger assets



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Buying broker (1=yes)	0.014 [0.040]	-0.017 [0.023]	0.867 [0.132]	1.103 [0.074]
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Full controls	yes	yes	yes	yes

## Listing brokers:

- Sell average sized building at discount
- Increase building size with one st. dev. leads to 1.5% premium

**Buying and listing brokers more likely to conclude the deal if the asset is large**

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Buying broker (1=yes)	0.014 [0.040]	-0.017 [0.023]	0.867 [0.132]	1.103 [0.074]
Listing broker (1=yes)	-0.069*** [0.023]	-0.014 [0.017]	0.869* [0.070]	1.107*** [0.041]
Direct deal (1=yes)	0.004 [0.017]	0.003 [0.017]		
Both listing and buying broker *	-0.001		0.972	
Building size	[0.006]		[0.026]	
Buying broker * Building size	-0.012 [0.010]		1.099* [0.057]	
Listing broker * Building size	0.018*** [0.005]		1.092*** [0.028]	
Both listing and buying broker * Class A		-0.009 [0.026]		0.962 [0.109]
Buying broker * Class A		-0.061 [0.041]		1.136 [0.194]
Listing broker * Class A		0.035 [0.022]		1.147 [0.124]
Full controls	yes	yes	yes	yes

## Listing brokers:

- Sell average sized building at discount
- Increase building size with one st. dev. leads to 1.5% premium

**Buying and listing brokers more likely to conclude the deal if the asset is large**

# Brokerage and Deal Complications

Deal complexity matters, brokers extract value



	Upleg 1031 Exchange		Distress Sale		REO Sale	
	Transaction Price	Time on the Market	Transaction Price	Time on the Market	Transaction Price	Time on the Market
Both buying and listing broker (1=yes)	-0.017 [0.017]	1.040 [0.038]	-0.014 [0.017]	1.027 [0.037]	-0.012 [0.017]	1.000 [0.036]
Buying broker (1=yes)	-0.035 [0.022]	1.130* [0.077]	-0.027 [0.022]	1.115 [0.074]	-0.028 [0.022]	1.081 [0.072]
Listing broker (1=yes)	-0.006 [0.017]	1.140*** [0.042]	-0.004 [0.017]	1.126*** [0.041]	-0.004 [0.017]	1.092** [0.040]
Direct deal (1=yes)	0.003 [0.017]		0.004 [0.017]		0.005 [0.017]	
Both buying and listing broker * Sale condition	0.045 [0.031]	0.650** [0.132]	-0.223** [0.111]	1.021 [0.403]	-0.084 [0.053]	2.978*** [0.769]
Buying broker * Sale condition	0.121** [0.054]	0.607 [0.189]	-0.114 [0.175]	0.861 [0.691]	-0.006 [0.078]	3.494*** [1.646]
Listing broker * Sale condition	0.006 [0.041]	0.571** [0.125]	-0.140 [0.111]	0.725 [0.297]	-0.046 [0.051]	2.966*** [0.763]
Sale conditions (1=yes)						
Upleg 1031 exchange	0.029 [0.029]	2.119*** [0.419]	0.066*** [0.013]	1.364*** [0.062]	0.066*** [0.013]	1.364*** [0.062]
Distress sale	-0.156*** [0.048]	1.100 [0.119]	-0.048 [0.093]	1.241 [0.454]	-0.156*** [0.048]	1.099 [0.119]
REO sale	-0.276*** [0.019]	1.327*** [0.066]	-0.276*** [0.019]	1.328*** [0.066]	-0.225*** [0.050]	0.464*** [0.117]



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# Distant Investors

Sell at discount, buy at premium



	Transaction Price		Time on the Market	
Both buyer and seller out of state (1=yes)	0.029*		1.754***	
	[0.016]		[0.072]	
Buyer out of state (1=yes)	0.044***		1.220***	
	[0.011]		[0.040]	
Seller out of state (1=yes)	-0.048***		1.138***	
	[0.010]		[0.034]	
Buyer distance (miles)		0.063***		1.571***
		[0.020]		[0.084]
Buyer distance <sup>2</sup> (miles)		-0.013		0.888***
		[0.008]		[0.020]
Seller distance (miles)		-0.051***		1.349***
		[0.017]		[0.073]
Seller distance <sup>2</sup> (miles)		0.015**		0.918***
		[0.008]		[0.023]
Full controls	yes	yes	yes	yes
Constant	4.764***	4.763***		
	[0.038]	[0.037]		
Observations	34,524	34,524	46,055	46,055
Number of buildings	15,210	15,210	39,623	39,623

## Out of state investors :

- 2.9% premium if both parties are out of state
- Buyers buy for 4.4% more
- Sellers sell for 4.8% less

## Distant investors more likely to complete the transaction

**Non-linear relationship between investor distance, transaction price, and time on the market**

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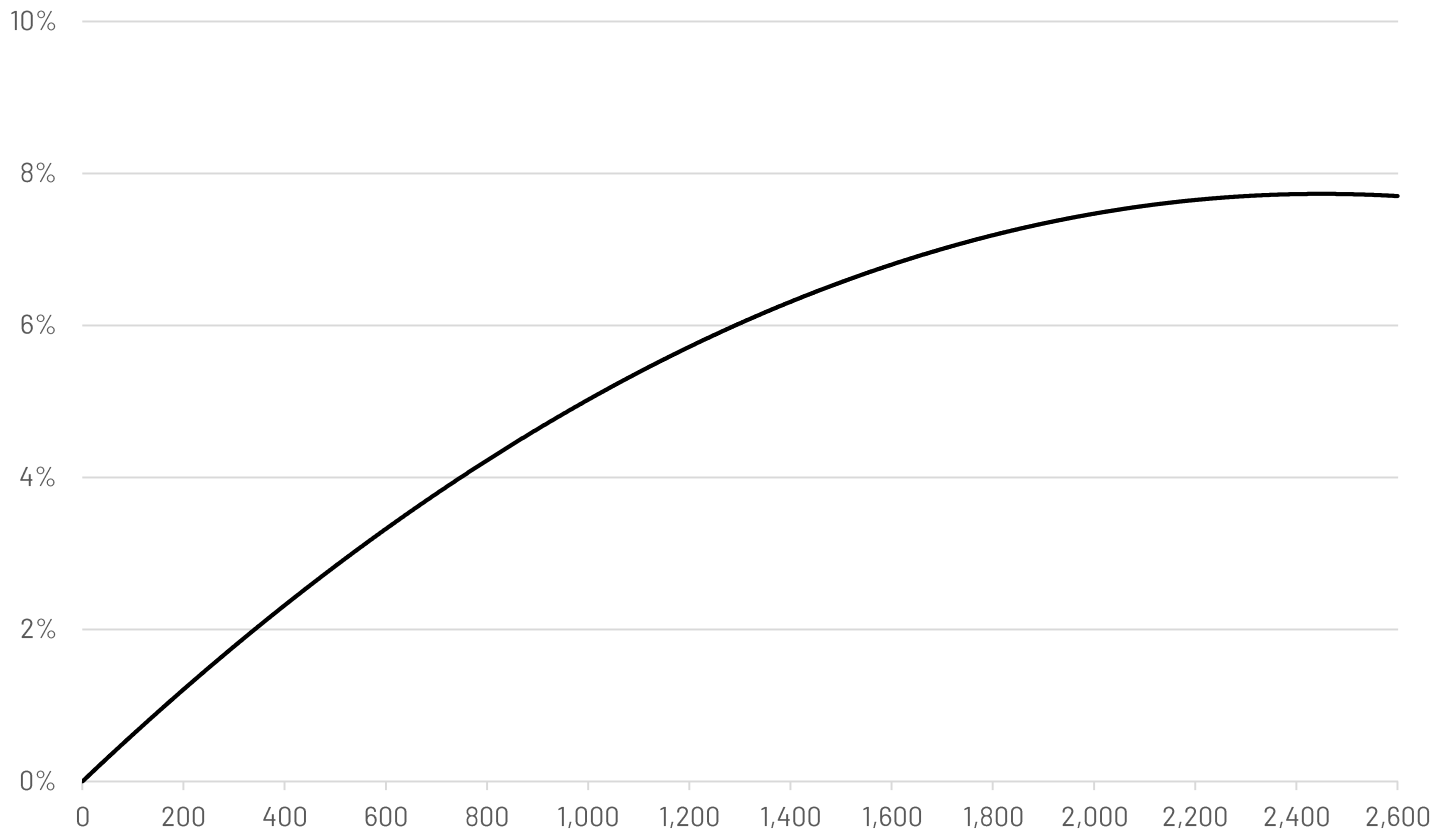
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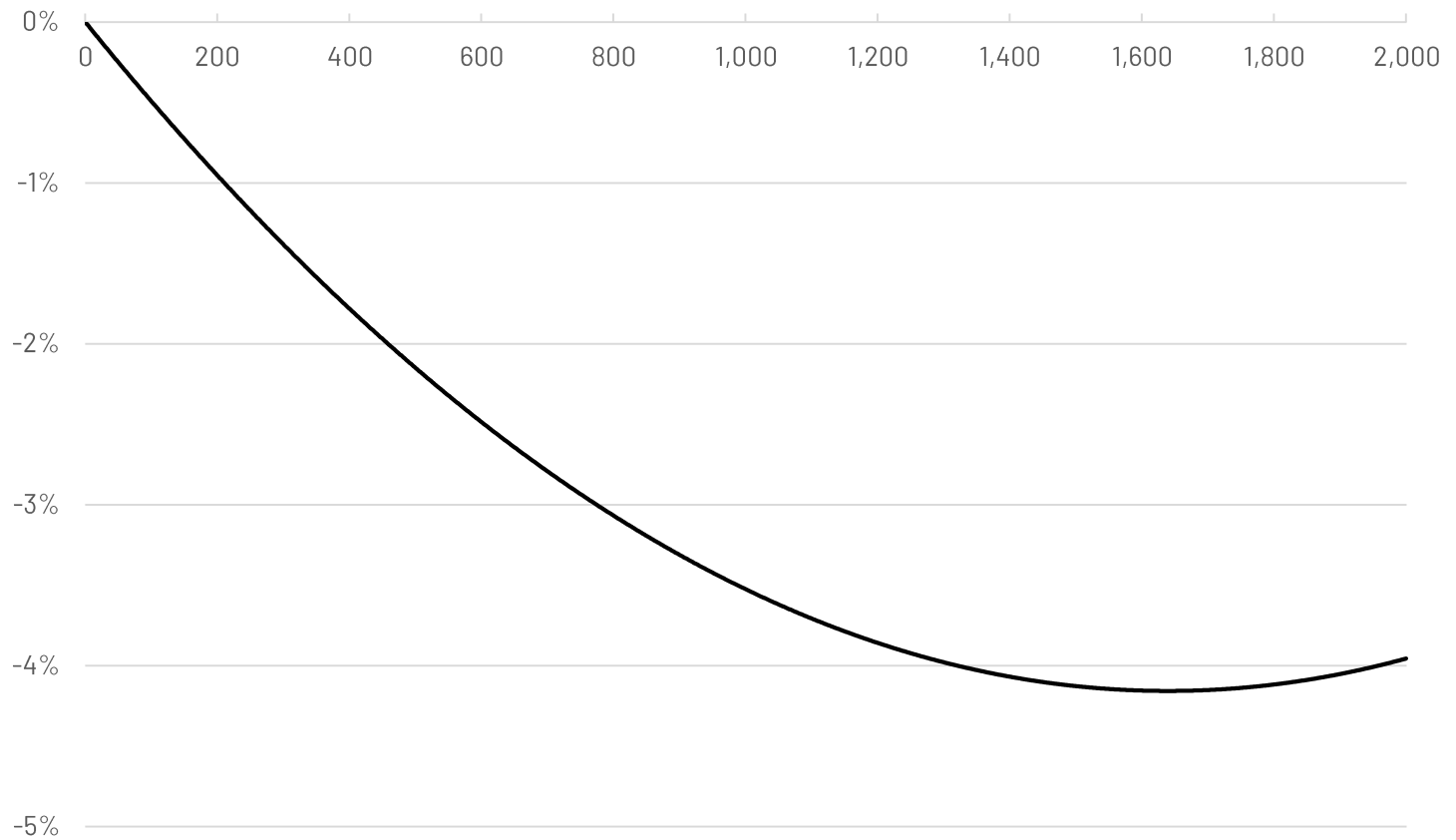
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**Non-linear relationship between investor distance, transaction price, and time on the market**



Distant buyers overpay by up to 8 percent





Distant sellers undersell by up to 4 percent



# Distant Investors and Brokerage

Real estate brokers partly mitigate adverse distance effect



	Transaction Price	Time on the Market
Both buying and listing broker * Both buyer and seller out of state (1=yes)	-0.004 [0.030]	0.721* [0.125]
Both buying and listing broker * Buyer out of state (1=yes)	-0.012 [0.021]	0.845*** [0.053]
Both buying and listing broker * Seller out of state (1=yes)	0.001 [0.022]	1.160 [0.131]
Buying broker * Both buyer and seller out of state (1=yes)	-0.115* [0.059]	1.021 [0.297]
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Listing broker * Both buyer and seller out of state (1=yes)	0.044 [0.028]	1.025 [0.171]
Listing broker * Seller out of state (1=yes)	0.002 [0.022]	1.378*** [0.157]

- Buying brokers acquire assets at a 11.5% discount if both parties are out of state, mitigating the 5% discount associated with out of state buyers
- Listing brokers dispose of assets more quickly when seller is out of state, other advisor categories seem to slow down the transaction process

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# Intermediation in Commercial Real Estate

## Conclusion



### **Commercial real estate represents USD 16 trillion in assets:**

- Investors almost always retain the services of brokers
- Despite their ubiquity, value added is hardly investigated

### **Broker choice endogenous to the asset:**

- Direct measurement of deal performance, as opposed to M&A's
- Building-fixed effects model controls for asset quality

### **Main findings:**

- Brokers mainly add value in complicated deals, involving larger assets with sale conditions. Most helpful in completing the deal, rather than pricing
- Distant investors are at a significant disadvantage, brokers mitigate the adverse effects of distance

### **Fundamental contribution by brokers from a diversification perspective**



# THANK YOU, QUESTIONS?

Rogier Holtermans

[rhoelter@uoguelph.ca](mailto:rhoelter@uoguelph.ca)