There's No Place Like Home:
Local Asset Concentrations, Information Asymmetries, & Portfolio Returns

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Background & Motivation

- Capital allocation plays a central role in the efficiency, growth & performance of markets

- Some key questions include:
  - What drives portfolio allocation decisions?
  - What are the consequences of those decisions on return performance?

- An asset allocation "puzzle" we address is propensity for market participants to overweight their portfolios locally
  - This "home bias" seems inconsistent with benefits derived from a more diversified portfolio
  - But…Nathan Collier does not care!

Background & Motivation

- Empirical evidence of home bias has been documented among
    - individual equity investors (e.g., Ivkovic and Weisbenner, 2005)
    - bond underwriters (Butler, 2008)
    - managers of mutual funds (e.g., Coval and Moskowitz, 1999, 2001; Hau, 2001; Pool, Stoffman, and Yonker, 2012)
    - hedge fund managers (Teo, 2009)
    - investors in private CRE markets (Garmaise and Moskowitz, 2004)
    - the origination decisions of lenders (Giannetti and Laeven, 2012)

Background & Motivation

- Literature provides two main explanations for this local bias
- Both based on idea that geographic proximity generates either:
  - an information advantage (asymmetry)
    - e.g., Van Niewerburgh & Veldkamp, 2009—provide explanation of why the asymmetry can persist in equilibrium
  - a familiarity bias
    - e.g., Huberman, 2001; Seasholes & Zhu, 2010; Pool, Stoffman, Yonkers, 2012
    - Decisions based on cognitive biases should not enhance return performance

Primary Question We Address?

- Does an investment **manager's** local information advantage produces **higher** (risk-adjusted) **returns** for stock investors?

- Empirical challenge?
  – Isolating information-based return effects from effects of concentrated portfolio risk

- Our focus on the home bias & return performance of listed U.S. equity REITs allows us to isolate these two effects

So…Why Equity REITs?

1. REITs purchase properties in illiquid, highly segmented, & informationally opaque **private** CRE markets
   - Information asymmetries likely to be important in private CRE transactions (Garmaise & Moskowitz, 2004)
   - Compare to liquid market in which stock mutual fund managers buy stocks
2. Can directly measure each REIT's home bias by computing % of **each REIT's portfolio** in **each MSA** (*Metropolitan Statistical Area*) at beginning of **each year**
   - Garcia & Norli (2012) & Bernile, et al. (2015) measure a firm's geographic concentration/footprint by counting # of states mentioned in a firm's 10K
3. Equity REITs MUST own physical real estate (and little else)
   - Tangible, immobile assets vs. intangible assets
4. Can accurately observe total returns
5. Results are generalizable to the $8-$10 trillion private CRE mrket

Empirical Strategy

1. Measure extent to which REIT managers exhibit home bias
   - Defined as disproportionate investment in headquarter MSA
2. Measure extent to which home bias **predicts** REIT returns

It does!

But…"correlation is not causation"!!

Empirical Strategy

3. Examine whether **positive relation** between home bias & returns is driven by…
   - a **managerial information advantage** (e.g., Van Niewerburgh & Veldkamp, 2009);
     - i.e., better able to…..

Several possible information channels
   - - "buy low-sell high" in their local market (better at valuation/selection)
     - manage local properties after purchase (know when they can raise rents)
     - execute local acquisitions/dispostions because of their connections to other local investors and third-party service providers
       » Better "deal flow" from local brokers
   - **ex ante compensation** required by stock investors **for risk** of investing in a geographically concentrated portfolio (e.g., Garcia & Norli, 2012)

Our Contributions?

- Measurement of "local" portfolio allocations
  - Employ a more accurate measure of local asset concentrations using time-varying property-level asset holdings
- Document that geographic proximity influences
  - local investment concentrations (evidence of home bias in CRE markets)
  - return performance…but **primarily in markets with high information asymmetry**
- Provide evidence that the channel is asymmetric information about private CRE markets, not ex ante risk compensation to stock investors
- Examine information asymmetry in bank loan decisions
  - Provide evidence in a CRE context that banks with a local presence offer better loan pricing to local investors with large local portfolios

Data?

- Use property level data from SNL's Real Estate Database
- Compute % of each equity REIT's portfolio held in each MSA
  - at beginning of each year
  - from 1996-2013
  - based on "adjusted cost" of each property
- Return data & firm characteristics from CRSP-Ziman & Computstat

Distribution of REIT Headquarter MSAs

Figure 1--Panel A

Distribution of Headquarters by MSA
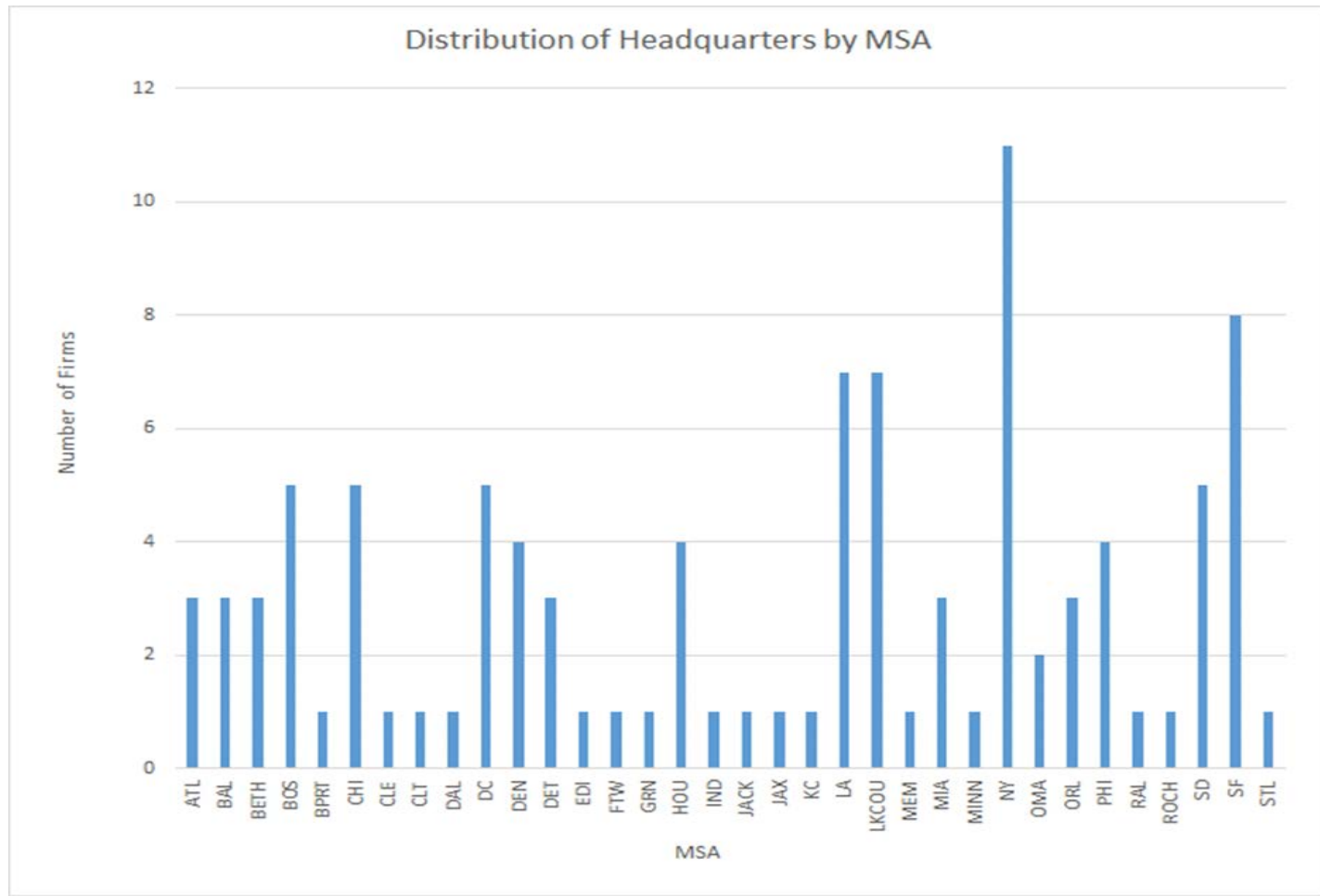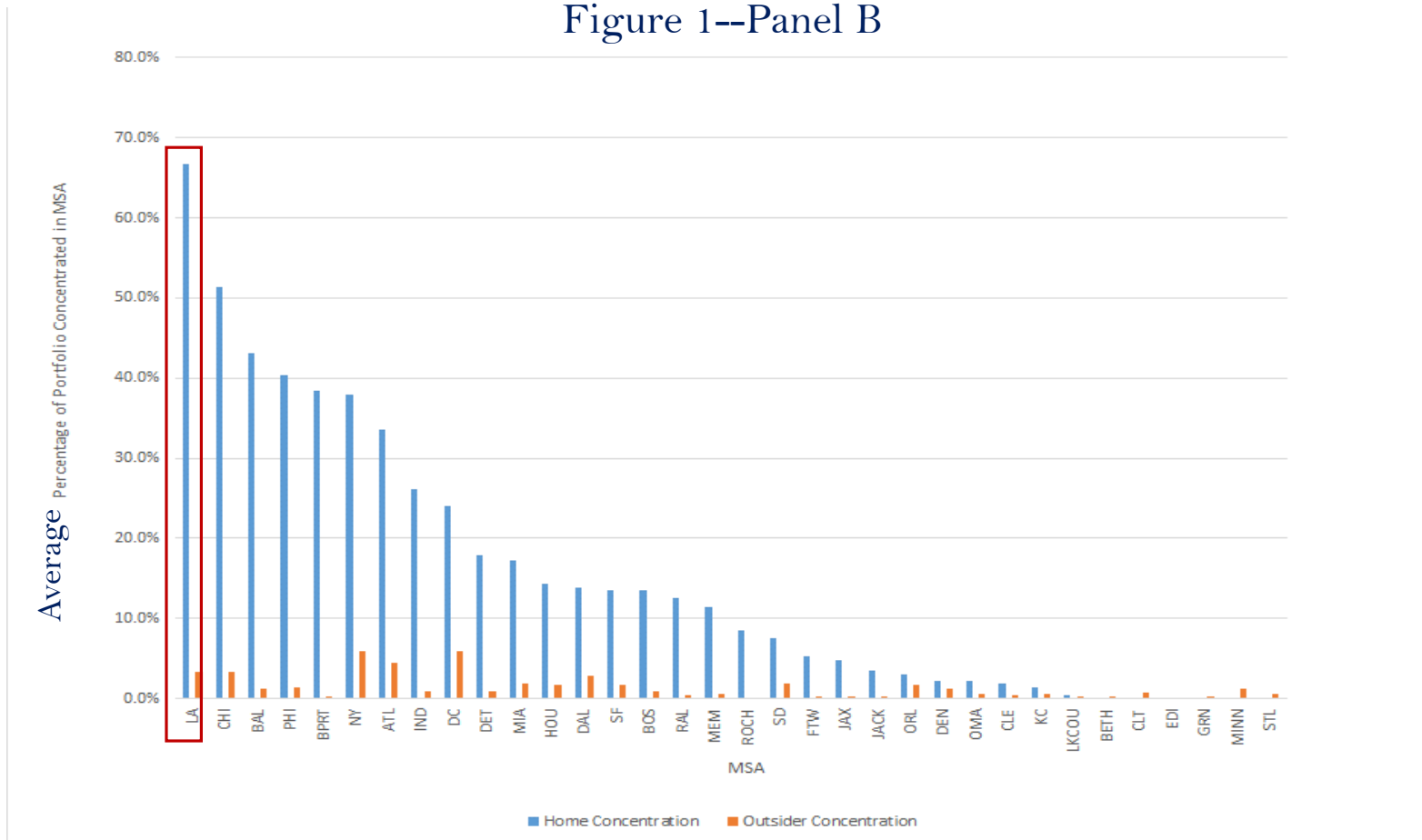
- 34 unique MSAs
- A large number of REITs headquartered in smaller markets

Evidence of Home Bias in U.S. REIT Portfolios?

Figure 1--Panel B

- 7 REITs headquartered in LA
- These firms held 66% of their portfolios in LA (on average)
- REITs not headquartered in LA held just 2% of their portfolios in LA

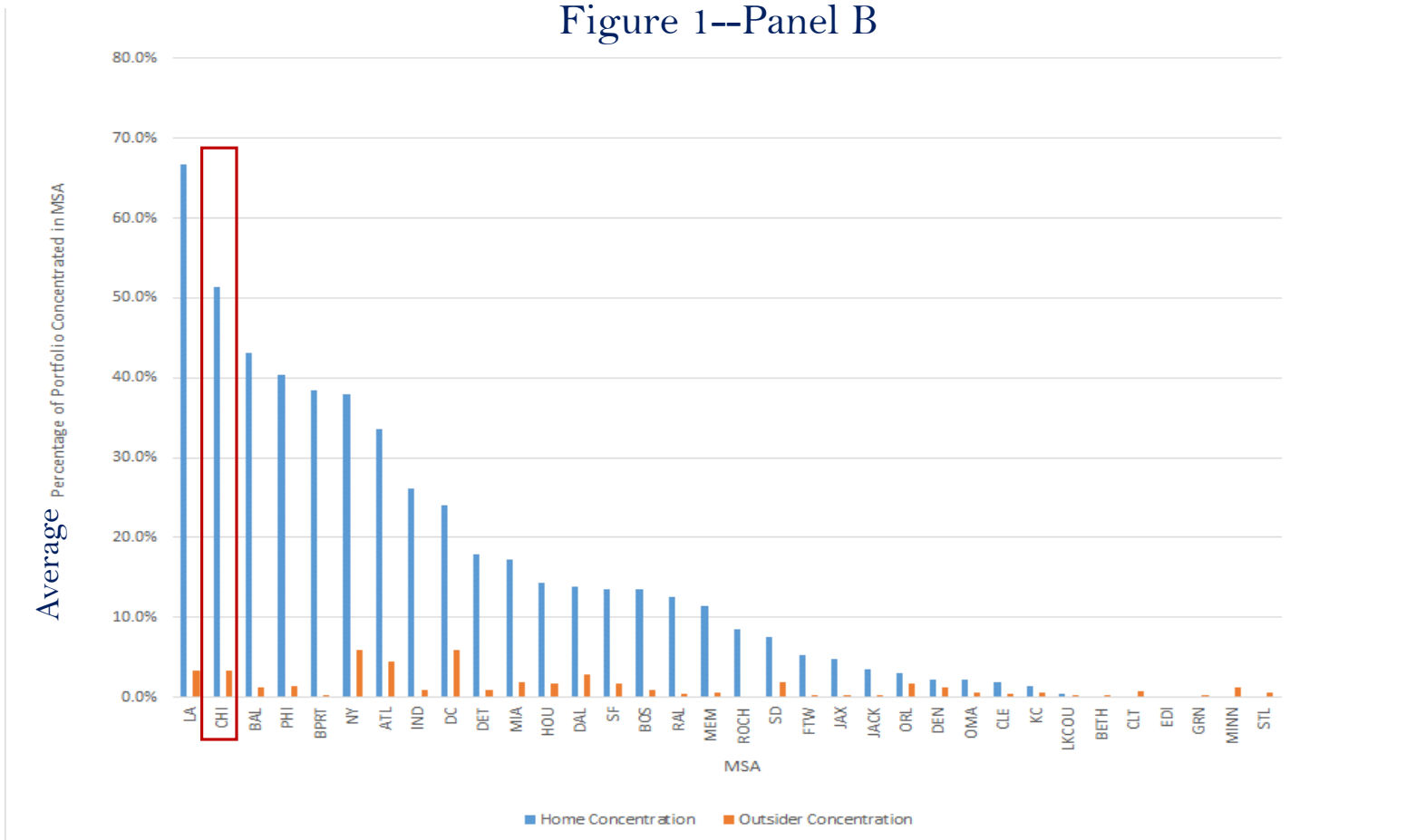# Evidence of Home Bias in U.S. REIT Portfolios?

Figure 1--Panel B

- 5 REITs headquartered in Chicago
- These firms held 51% of their portfolios in Chicago (on average)
- REITs not headquartered in Chicago held just 2% of their portfolios in Chicago

Average Local MSA Concentrations by Year

Figure 2
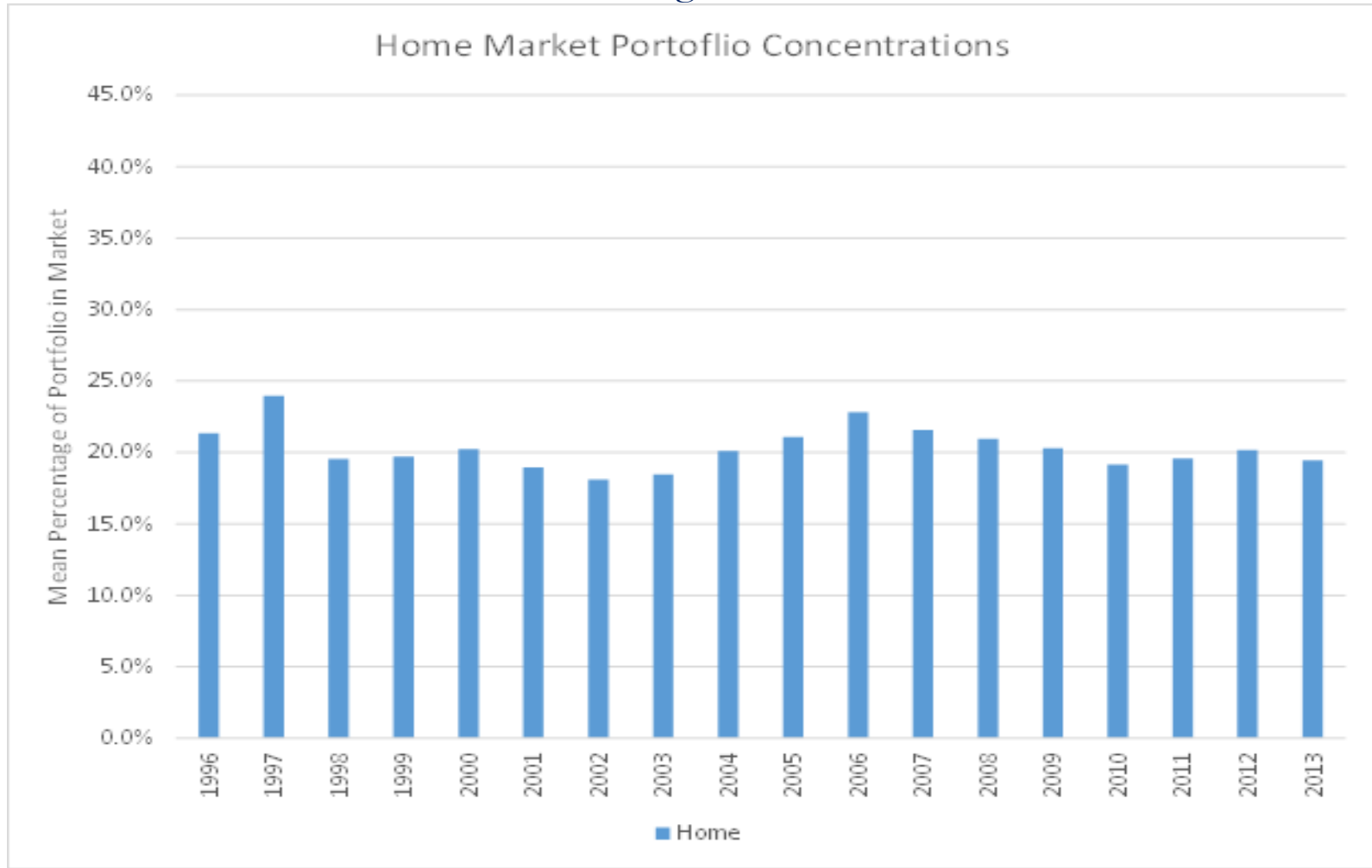
On average, REITs held 20% of their portfolios in their home MSA; range is 0% - 100%

Home Bias & Returns: Unconditional Portfolio Sorts

- Sort REITs into 3 home concentration "buckets" (low, medium, high) as of beginning of each year (by property type)
- Calculate **average monthly return over next year** for each bucket
- Rebalance portfolio constituents at beginning of next year
- Calculate average monthly return for each bucket over 18-year sample

Home Bias & Returns: Unconditional Portfolio Sorts

Table 1-Panel B	Low	Mid	High	High-Low
Home Market Concentration	0.919	1.091	1.353	0.434***

- REITs with high home concentrations outperform low concentration REITs
  - **43 basis point monthly return difference** (5.2% annually) is
    - statistically significant & economically large
    - consistent with a home market information advantage

Home Bias & Returns: Unconditional Portfolio Sorts

Table 1	Low	Mid	High	High-Low
Single Market Concentration (With Home)	1.084	1.111	1.134	0.050
Single Market Concentration (Non-Home)	1.143	1.238	0.941	-0.202
Portfolio Concentration (With Home) (HHIs)	1.169	1.126	1.039	-0.130
Portfolio Concentration (Non-Home) (HHIs)	1.171	1.185	0.972	-0.199

- Performed same unconditional analysis for **other measures** of portfolio concentration

Home Bias & Returns: Unconditional Portfolio Sorts

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Portfolio Concentration (Non-Home)	1.171	1.185	0.972	-0.199

- Performed same unconditional analysis for **other measures** of portfolio concentration

- **No positive return difference** across high & low concentration portfolios

- Suggests high returns for REITs with a greater home bias are **not being driven by compensation for concentrated risk**

Home Bias & Risk-Adjusted Returns: Calendar Time Portfolio Regression Models

- Estimate monthly regressions for each home concentration bucket/tercile to determine **"alpha"**

$$r_{p,t} - r_{f,t} = \boxed{\alpha_P} + \beta_1\, MKT_t + \beta_2\, SMB_t + \beta_3\, HML_t + \beta_4\, MOM_t + \beta_5\, PS\_LIQ_t + \beta_6\, RE_t + \varepsilon_t \,.$$

  - Regressions control for exposure to common risk factors
  - Orthoganalized RE factor also included

- Positive & significant "**alpha**" for high home concentration REITs
  - abnormal (risk-adjusted) returns of 0.4% monthly (4.8% annually; Table 2)

- **Insignificant alpha** for low home concentration REITs

- So…even after controlling for exposure to standard macro/risk factors, home bias in a portfolio "pays"…

Annual (Fama-MacBeth) Cross-Sectional Regressions

- Estimate 18 annual cross-sectional regressions using **firm-level data**:

$$RET_{i,t} = c_0 + \sum_{m=1}^{M} c_{i,m} Z_{m,i,t} + \varepsilon_{i,t}$$

where

- $RET_{i,t}$ is firm's annual excess return

- $Z_{m,i,t}$ is a vector of M firm characteristics that includes **a home concentration variable**…as well as large set of controls:

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- $Z_{m,i,t}$ is a vector of M firm characteristics that includes **a home concentration variable**…as well as large set of controls:
  - firm's market cap, market-to-book, firm's cumulative return over the prior calendar year, SD of firm's daily returns over prior calendar year, Amihud (2002) illiquidity measure, firm leverage

"SOS"

Annual Cross-Sectional Regressions

- Estimate 18 annual cross-sectional regressions using **firm-level data**:

$$RET_{i,t} = c_0 + \sum_{m=1}^{M} c_{i,m} Z_{m,i,t} + \varepsilon_{i,t}$$

where

  - $RET_{i,t}$ is firm's annual excess total return
  - $Z_{m,i,t}$ is a vector of M firm characteristics that includes **a home concentration variable**…as well as standard controls:
    - firm's market cap, market-to-book, firm's cumulative return over the prior calendar year, SD of firm's daily returns over prior calendar year, Amihud (2002) illiquidity measure, firm leverage
  - All controls measured at end of year prior to which returns are measured
  - Include property-type fixed effects

Cross-Sectional Regressions of Annual Firm-Level Returns

% home concentration is positive & highly significant

Economic significance: The predicted returns on high home concentration firms are 3.4 percentage points higher than low concentration firms

Table 3	RET	RET	RET	RET	RET
HOME_CONC	0.067***	-	-	-	-
	(0.001)	-	-	-	-
SINGLE_CONC	-	0.014	-	-	-
	-	(0.599)	-	-	-
SINGLE_CONC_NON_HOME	-	-	-0.081***	-	-
	-	-	(0.003)	-	-
NON_HOME_HERF	-	-	-	0.021	-
	-	-	-	(0.642)	-
PORTFOLIO_HERF	-	-	-	-	0.053
	-	-	-	-	(0.311)

Control variables: *SIZE, M/B, MOMENTUM, VOLATILITY, ILLIQ, LEV*

Cross-Sectional (Fama-MacBeth) Regressions of Annual Firm-Level Returns

Table 3	RET	RET	RET	RET	RET
HOME_CONC	0.067***	-	-	-	-
	(0.001)	-	-	-	-
SINGLE_CONC	-	0.014	-	-	-
	-	(0.599)	-	-	-
SINGLE_CONC_NON_HOME	-	-	-0.081***	-	-
	-	-	(0.003)	-	-
NON_HOME_HERF	-	-	-	0.021	-
	-	-	-	(0.642)	-
PORTFOLIO_HERF	-	-	-	-	0.053
	-	-	-	-	(0.311)

Lack of +/significant coefficient on these other geographic concentration variables supports an information-based story, **not a concentrated risk story**

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- Expect home market information advantage to be greatest in markets where **information asymmetries** are most pronounced
- So…we identify MSAs in which information asymmetries (between local & non-local CRE investors) are most severe
- Examples:
  - MSAs with high "land shares"
    - e.g., Kurlat (2016) & Kurlat & Stroebel (2014)
    - Land more difficult to value than structural characteristics
  - MSAs with little investment by foreign/non-local institutional capital
    - e.g., Bae, Stulz, & Tan, (2008)
    - Easier to find a "deal" in Indianapolis than Manhattan

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- *Univariate portfolio sorts*: Differences in returns (high - low home concentrations) are positive & significant only **in MSAs with high information asymmetry**
  - i.e., high land share/low foreign investment

Further Identification: High Info Asym

- Re-estimated our portfolio regressions conditioning on headquarter information environment:
  - Six "buckets" instead of three

Table 5: Panel A

	α
HIGH-LOW	0.006***
(High Land Share)	(0.005)
HIGH-LOW	0.002
(Low Land Share)	(0.381)

Table 5: Panel B

	α
HIGH-LOW	0.005*
(Low Foreign)	(0.068)
HIGH-LOW	0.001
(High Foreign)	(0.646)

- Positive & significant **alphas (and difference in alphas)** only for
  1. REITs with high home concentrations
  2. in MSAs with high information asymmetry

Further Identification: High Info Asym

- Re-estimated our FMB regressions conditioning on headquarter MSA information environment:

	Land Share		Foreign Investment	
	RET	RET	RET	RET
HOME_CONC	0.065***	-0.032	0.073***	-0.004
	(0.000)	(0.403)	(0.000)	(0.934)
HILAND	0.010	-0.014	-	-
	(0.318)	(0.288)	-	-
HOME_CONC*HILAND	-	0.138***	-	-
	-	(0.008)	-	-
LOFOREIGN	-	-	0.011	-0.005
	-	-	(0.486)	(0.771)
HOME_CONC*LOFOREIGN	-	-	-	0.101**
	-	-	-	(0.047)
LOBROKER	-	-	-	-
	-	-	-	-
HOME_CONC*LOBROKER	-	-	-	-
	-	-	-	-
Property Type Fixed Effects	Yes	Yes	Yes	Yes
N	1044	1044	733	733
R²	0.43	0.45	0.45	0.47

Control Variables: *SIZE, M/B, MOMENTUM, VOLATILITY, ILLIQ, LEV*

- High information asymmetry markets are NOT associated with higher returns

Further Identification: High Info Asym

- Re-estimating our FMB analysis conditioning on headquarter information environment:

	Land Share		Foreign Investment	
	RET	RET	RET	RET
HOME_CONC	0.065***	-0.032	0.073***	-0.004
	(0.000)	(0.403)	(0.000)	(0.934)
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R²	0.43	0.45	0.45	0.47

Control Variables: *SIZE, M/B, MOMENTUM, VOLATILITY, ILLIQ, LEV*

- \+ relation between local concentrations & returns concentrated **in headquarter MSAs with high information asymmetry**

Identification Tests Using Loan Spreads

- High local asset concentrations should lead to higher quoted loan spreads, all else equal

- Why?
  - Greater perceived risk associated with concentrated portfolios

- But…what if **local** lenders can discern whether **local asset concentrations** create an information/execution advantage for local REITs?
  - Could put downward pressure on quoted loan spreads from local lenders

Difference-in-Difference Analysis of Loan Spreads

- Use loan-level data from Thomson-Reuters LPC Dealscan database
  - Loan spread, maturity, lender name, lender headquarter location
- Also collected branch location data from the FDIC
- Loan is classified as involving a **local lender** if bank had a branch office in the MSA where REIT is headquartered
- Again…sort REITs into high & low home market concentrations as of beginning of each year
- Conduct a diff-in-diff analysis of average loan spreads

Diff-in-Diff Analysis of Loan Spreads (in BPs)

Univariate Loan Spread Comparisons by Home Concentration & Local Lender

Table 8-Panel A	Low Home Concentration	High Home Concentration	Difference (High – Low)
	Mean	Mean	Mean
Local Lender	153.219	133.791	-19.428**
Non-Local Lender	145.317	191.951	46.634***
Difference (L-NL)	7.902	-58.160***	-66.062***

Difference-in-Difference Analysis of Loan Spreads

Diff-in-Diff of Loan Spreads by Local / Non-Local Lenders

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- When borrowing from a local lender…
- **Lower spreads** for firms with high local asset concentrations

Difference-in-Difference Analysis of Loan Spreads

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- When borrowing from a non-local lender….
- **higher spreads** for firms with high home concentrations
- Consistent with greater perceived risk of concentrated portfolios *in the absence of a perceived information advantage*

Difference-in-Difference Analysis of Loan Spreads

Diff-in-Diff of Loan Spreads by Local / Non-Local Lenders

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- For firms with high home concentrations….

- Significantly **lower spreads** for firms utilizing a local lender (58 basis points)

- Overall, dif-in-dif analysis suggests local lenders price the REIT's information advantage by offering lower spreads to local firms with high home concentrations

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Home Bias: Measurement

Comparison of Home Concentration and State Count Measures

Correlation = -0.41 (based on actual holdings, not 10K mentions)

Garcia & Norli (2012):
- < = 3 states mentioned in 10K implies firm is "local"
- > 11 states mentioned implies firm is geographically dispersed
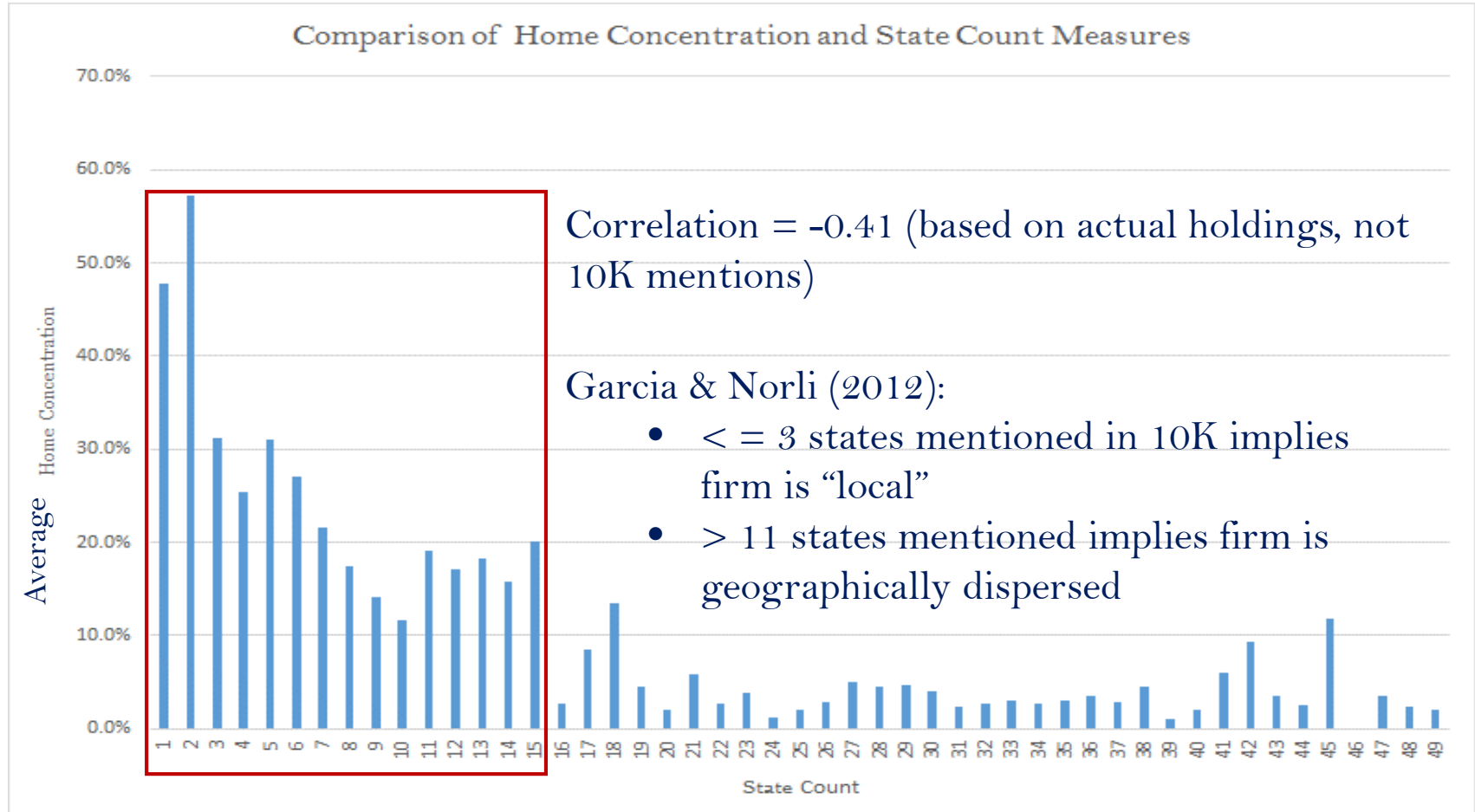
Garcia and Norli's text based measure may introduce noise into measurement of local asset concentrations, masking significant cross-sectional & within-state count variation

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- Results?
  - *Univariate portfolio sorts*: Differences in returns (high - low home concentrations) are positive & significant only **in MSAs with high information asymmetry**
  - *Calendar time portfolio regression models*: Positive & significant **alpha** only for REITs with high home concentrations **in MSAs with high information asymmetry**
  - *Fama-MacBeth (annual) cross-sectional regressions*: positive relation between local asset concentrations & returns only **in MSAs with high information asymmetry**
  - No evidence returns are related to concentrations in MSAs with high information asymmetry (additional tests in Table 8)
    - Implies this MSA risk is not being priced ex ante

Left to Do…?

- Working on further tests to demonstrate our home concentration result is primarily driven by a local market information advantage…and not by compensation for risk of a concentrated portfolio

- Other suggestions…?

Information Asymmetries & Home Bias

- A perceived information advantage leads investors to learn even more about their home market

  – i.e., *"specializing in what they already know"*…*"because information has increasing returns in the value of the asset it pertains to"* (Van Nieuwerburgh & Veldkamp, 2009)

  – Information asymmetries can persist because investors choose not to learn what others already know about distant markets

- Implication?

  – Investors with a "home market" information advantage will hold **more** local assets than the marginal/typical investor

Other Information Channels

- In addition to being better at *valuation*, experienced local buyers
  - may have an advantage in performing *due diligence* &
  - may have a reputation for *performance* (closing quickly)
- Result?
  - Reputable, experienced buyers may pay lower prices (Chinloy, Hardin, Wu, 2013)
- Implication?
  - Again…investors with a "home market" information advantage will hold **more** local assets than the marginal/typical investor

The Return Implications of Home Bias?

- Market prices/values only reflect what the marginal/average investor knows
  - Van Nieuwerburgh & Veldkamp, 2009; Kurlat & Strobel, 2015; Ling et al., 2017)
- If a local investor has information about the **direction** of future CFs—that is not yet fully reflected in market prices--she can:
  - buy at market prices before **positive** news is fully capitalized and/or
  - sell at market prices before **negative** news is fully capitalized
- Thereby generating expected (& realized?) excess returns
- Said differently: local investor can profit from trading on "*partially unpriced neighborhood characteristics*" (Kurlat & Strobel, 2015)

The Return Implications of Home Bias? (cont.)

- Superior information also produces a discount rate effect
  - Local investor is **more certain** about payoffs on local assets
    - e.g., Van Nieuwerburgh & Veldkamp, 2009
  - Thus…has a lower required rate of return—*even if her CF forecasts are identical to the marginal investor*

- Implication?
  - Again…local investor can earn excess (risk-adjusted) returns even when purchasing at market prices

- *Note:* Both a lower discount rates & more accurate CF forecasts in rising markets allow local investor to outbid marginal investor

Why REITs?

- Large & growing international market for listed RE companies
- According to FTSE EPRA/NAREIT Global RE Index:
  - Global market capitalization = $1.6 trillion (USD) in May 2017
    - 483 companies in 36 countries
  - U.S. REITs: equity market cap > $1 trillion (USD)
- In 2016, public RE securities become the 11th Global Industry Classification Standard (GICS) sector

Further Tests of Information Effect: "Land Share"

- Kurlat (2016) & Kurlat & Stroebel (2014) find that information advantages are greatest in markets in which property values are **more dependent on land** relative to structure

- Why?
  - Structural attributes (sq. footage, amount of parking, age, etc.) are typically observable & amenable to valuation
  - But…info about a property's location attributes is more difficult to observe & value because **numerous external effects** (positive & negative) act upon land at a given location
    - Each parcel of land has a unique **location value signature--LVS** (Fik, Ling, & Mulligan, 2003) & **LVS** differences are difficult to value

- So…for each MSA, we use *SNL data* to calculate average "**land share**" at beginning of each year (for each property type)

Further Tests of Information Effect:
% "Foreign" Investment in Each MSA

- Information advantages are greater in markets that draw **less attention** from foreign and/or other non-local investors
  - e.g., Bae, Stulz, and Tan (2008)
  - Easier to find a "deal" on an office property in Indianapolis than in Manhattan….

- Use data from *Real Capital Analytics* to calculate % of the $ transaction volume in each MSA that involved a foreign or non-local private buyer

High Information Asymmetry MSAs: Sum Stats

Table 5–Panel A	Mean	Median	SD	Min	Max	N
Land Share (1996-2013)	0.255	0.257	0.045	0.097	0.477	1044
Foreign Investment (2001-2013)	0.257	0.232	0.168	0.000	1.000	733

- 25.5% of CRE transactions attributable to land

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- 25.5% of CRE transactions attributable to land
- But…significant variation over time & MSAs

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Foreign Investment (2001-2013)	0.257	0.232	0.168	0.000	1.000	733

and non-local private

- "Foreign" investors constitute 25.7%, on average, of buyers (in RCA data)

- But…also significant variation

Returns Sorted by MSA Concentration & Information Environment

Table 5-Panel C	Low	Mid	High	High-Low
Low Land Share (1996-2013)	0.953	1.162	1.248	0.295
High Land Share (1996-2013)	0.739	1.096	1.464	0.725***
Low Foreign (2001-2013)	0.821	1.222	1.326	0.505**
High Foreign (2001-2013)	1.156	1.039	1.441	0.285

- **For each information environment**, sort REITs into 3 home concentration "buckets" (low, medium, high) as of beginning of each year
- Calculate **average monthly return over next year** for each bucket
  - rebalancing portfolio constituents at beginning of each year

Returns Sorted by MSA Concentration & Information Environment

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- Results?
  - Differences in returns (high – low home concentrations) are positive & significant only in MSAs where information asymmetries are more severe

Conditioning on Information Environment: Time-Series Regression Models

- Sort first by information environment

- Then estimate monthly regressions for each home concentration tercile to determine *alpha*

  - alphas now conditional on information environment

- Results (Table 6):

  - Positive & significant **alpha** only for REITs with high home concentrations **in MSAs with high information asymmetry**

  - α not significant for REITs with high home concentrations in MSAs with low information asymmetry

Conditioning on the Economic Environment: Cross-Sectional (Fama-MacBeth) Regressions

- Re-run Fama-MacBeth regressions, conditioning on the information environment

- Expect home bias results to be stronger in markets where local information advantages are most pronounced

Conditioning on the Economic Environment: Cross-Sectional (Fama-MacBeth) Regressions

Table 7	Land Share		Foreign Investment	
	RET	*RET*	*RET*	*RET*
HOME_CONC	0.065***	-0.032	0.073***	-0.004
	(0.000)	(0.403)	(0.000)	(0.934)
HILAND	0.010	-0.014	-	-
	(0.318)	(0.288)	-	-
HOME_CONC*HILAND	-	0.138***	-	-
	-	(0.008)	-	-
LOFOREIGN	-	-	0.011	-0.005
	-	-	(0.486)	(0.771)
HOME_CONC*LOFOREIGN	-	-	-	0.101**
	-	-	-	(0.047)

Regressions included control variables and property type fixed effects

- *HILAND* = 1 if REIT is headquartered in high land share MSA

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	-	-	-	(0.047)

Regressions included control variables and property type fixed effects

- *HILAND* = 1 if REIT is headquartered in high land share MSA
- *LOFOREIGN* = 1 if REIT located in low foreign investment MSA

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	-	-	(0.486)	(0.771)
HOME_CONC*LOFOREIGN	-	-	-	0.101**
	-	-	-	(0.047)

Regressions included control variables and property type fixed effects

- Expect coefficient on *HOME_CONC* to be larger in MSAs with high information asymmetry…and that is what we find

- Thus…relation between local asset concentrations & returns is concentrated in MSAs with high information asymmetry

Conditioning on the Economic Environment: Cross-Sectional (Fama-MacBeth) Regressions

Table 7	Land Share		Foreign Investment	
	RET	RET	RET	RET
HOME_CONC	0.065***	-0.032	0.073***	-0.004
	(0.000)	(0.403)	(0.000)	(0.934)
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	-	-	(0.486)	(0.771)
HOME_CONC*LOFOREIGN	-	-	-	0.101**
	-	-	-	(0.047)

Regressions included control variables and property type fixed effects

- No evidence returns are related to concentrations in MSAs with high information asymmetry (additional testd in Table 8)
  - Implies this MSA risk is not being priced ex ante

Cross-Sectional Regressions of Annual Firm-Level Returns

% home concentration is positive & highly significant

A 1 SD increase in *HOME_CONC* is associated with a 6.7% increase in subsequent annualized returns

Table 4	*RET*	*RET*	*RET*	*RET*	*RET*
HOME_CONC	0.067***	-	-	-	-
	(0.001)	-	-	-	-
SINGLE_CONC	-	0.014	-	-	-
	-	(0.599)	-	-	-
SINGLE_CONC_NON_HOME	-	-	-0.081***	-	-
	-	-	(0.003)	-	-
NON_HOME_HERF	-	-	-	0.021	-
	-	-	-	(0.642)	-
PORTFOLIO_HERF	-	-	-	-	0.053
	-	-	-	-	(0.311)
SIZE	-0.065***	-0.067***	-0.060***	-0.069***	-0.066***
	(0.004)	(0.000)	(0.001)	(0.001)	(0.000)
M/B	0.002	0.011	0.021	0.006	-0.001
	(0.939)	(0.643)	(0.407)	(0.802)	(0.971)
MOMENTUM	0.097*	0.113***	0.093*	0.108**	0.102**
	(0.055)	(0.009)	(0.054)	(0.016)	(0.035)
VOLATILITY	-2.090	-2.263	-2.992	-2.031	-2.800
	(0.480)	(0.417)	(0.301)	(0.455)	(0.309)
ILLIQ	-0.045***	-0.045***	-0.036***	-0.047***	-0.047***
	(0.003)	(0.001)	(0.005)	(0.001)	(0.001)
LEV	0.107*	0.112*	0.093	0.106*	0.119*
	(0.083)	(0.072)	(0.118)	(0.077)	(0.058)
Constant	0.757***	0.773***	0.738***	0.788***	0.760***
	(0.007)	(0.001)	(0.002)	(0.001)	(0.001)
Property Type Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1044	1044	1044	1044	1044
R^2	0.43	0.42	0.43	0.43	0.43

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- But…what if MSAs with high information asymmetry are perceived to be more risky *ex-ante*?

- If so…higher *ex post* returns would be expected, all else equal

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- *HILAND_CONC* = % of REIT's portfolio located in high *Land Share* MSAs

Table 8	Land Share		Foreign Investment	
	RET	*RET*	*RET*	*RET*
HOME_CONC	-	0.076***	-	0.078***
	-	(0.000)	-	(0.000)
HILAND_CONC	0.015	0.046	-	-
	(0.617)	(0.111)	-	-
LOFOREIGN_CONC	-	-	-0.022	-0.008
	-	-	(0.334)	(0.754)

Regressions included control variables and property type fixed effects

Further Tests to Identify Channel Through Which Home Concentrations Impact Returns

- *HILAND_CONC* = % of REIT's portfolio located in high *Land Share* MSAs

- *LOFOREIGN* = % of REIT's portfolio located in low *Foreign Investment* MSAs

Table 8	*Land Share*		*Foreign Investment*	
	RET	*RET*	*RET*	*RET*
HOME_CONC	-	0.076***	-	0.078***
	-	(0.000)	-	(0.000)
HILAND_CONC	0.015	0.046	-	-
	(0.617)	(0.111)	-	-
LOFOREIGN_CONC	-	-	-0.022	-0.008
	-	-	(0.334)	(0.754)

Regressions included control variables and property type fixed effects

Home Concentration & MSA Risk

Table 8	Land Share		Foreign Investment	
	RET	*RET*	*RET*	*RET*
HOME_CONC	-	0.076***	-	0.078***
	-	(0.000)	-	(0.000)
HILAND_CONC	0.015	0.046	-	-
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LOFOREIGN_CONC	-	-	-0.022	-0.008
	-	-	(0.334)	(0.754)

- No evidence returns are related to concentrations in MSAs with high information asymmetry (Table 8)
  - Implies this MSA risk is not being priced ex ante

Home Concentration & MSA Risk

Table 8	Land Share		Foreign Investment	
	RET	*RET*	*RET*	*RET*
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	-	(0.000)	-	(0.000)
HILAND_CONC	0.015	0.046	-	-
	(0.617)	(0.111)	-	-
LOFOREIGN_CONC	-	-	-0.022	-0.008
	-	-	(0.334)	(0.754)

- And…the home bias effect **is stronger** in MSAs with high information asymmetry (Table 9)

Cross-Sectional Regressions of Annual Firm-Level Returns: Including Gateway FEs

% home concentration is still positive & highly significant

	RET	RET	RET	RET	RET
HOME_CONC	0.065***	-	-	-	-
	(0.008)	-	-	-	-
SINGLE_CONC	-	0.007	-	-	-
	-	(0.830)	-	-	-
SINGLE_CONC_NON_HOME	-	-	-0.063**	-	-
	-	-	(0.044)	-	-
NON_HOME_HERF	-	-	-	0.022	-
	-	-	-	(0.607)	-
PORTFOLIO_HERF	-	-	-	-	0.052
	-	-	-	-	(0.320)
	-	-	-	-	-
SIZE	0.074***	0.074***	0.067***	0.080***	0.073***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
M/B	0.007	0.016	0.023	0.009	0.003
	(0.771)	(0.529)	(0.320)	(0.677)	(0.893)
MOMENTUM	0.128***	0.138***	0.119***	0.125***	0.116***
	(0.004)	(0.000)	(0.002)	(0.001)	(0.007)
VOLATILITY	-1.768	-2.052	-2.819	-1.893	-2.695
	(0.518)	(0.451)	(0.315)	(0.480)	(0.311)
	-	-	-	-	-
ILLIQ	0.050***	0.050***	0.042***	0.055***	0.052***
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)
LEV	0.117*	0.133**	0.112*	0.126*	0.138**
	(0.068)	(0.048)	(0.097)	(0.055)	(0.045)
Constant	0.817***	0.812***	0.778***	0.865***	0.804***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Property Type Fixed Effects	Yes	Yes	Yes	Yes	Yes
Gateway MSA Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1044	1044	1044	1044	1044
R^2	0.50	0.50	0.50	0.50	0.51

Cross-Sectional Regressions of Annual Firm-Level Returns: Including HQ MSA FEs

% home concentration is still positive & highly significant

	RET	RET	RET	RET	RET
HOME_CONC	0.112***	-	-	-	-
	(0.007)	-	-	-	-
SINGLE_CONC	-	0.040	-	-	-
	-	(0.493)	-	-	-
SINGLE_CONC_NON_HOME	-	-	-0.144**	-	-
	-	-	(0.030)	-	-
NON_HOME_HERF	-	-	-	0.052	-
	-	-	-	(0.222)	-
PORTFOLIO_HERF	-	-	-	-	0.082*
	-	-	-	-	(0.086)
SIZE	-0.044***	-0.051***	-0.036*	-0.060***	-0.055***
	(0.004)	(0.002)	(0.086)	(0.002)	(0.001)
M/B	-0.009	0.011	0.002	0.008	0.007
	(0.768)	(0.684)	(0.953)	(0.744)	(0.775)
MOMENTUM	0.148***	0.198***	0.103	0.180***	0.182***
	(0.004)	(0.000)	(0.153)	(0.000)	(0.000)
VOLATILITY	-2.368	-2.560	-3.561	-2.372	-3.317
	(0.430)	(0.374)	(0.231)	(0.402)	(0.250)
ILLIQ	-0.030***	-0.037***	-0.021	-0.045***	-0.041***
	(0.002)	(0.000)	(0.132)	(0.002)	(0.000)
LEV	0.123	0.146*	0.119	0.184**	0.172*
	(0.149)	(0.094)	(0.149)	(0.041)	(0.074)
Constant	0.510**	0.561**	0.519**	0.615***	0.596***
	(0.018)	(0.012)	(0.022)	(0.005)	(0.006)
Property Type Fixed Effects	Yes	Yes	Yes	Yes	Yes
HQ MSA Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1044	1044	1044	1044	1044
R^2	0.76	0.75	0.75	0.75	0.75

Home Market Concentrations in High Information Asymmetry MSAs

Table 5–Panel B	Mean	Median	SD	Min	Max	N
Low Land Share (1996-2013)	0.149	0.066	0.195	0.000	1.000	533
High Land Share (1996-2013)	0.259	0.116	0.316	0.000	1.000	511
Low Foreign (2001-2013)	0.239	0.126	0.285	0.000	1.000	398
High Foreign (2001-2013)	0.155	0.045	0.229	0.000	1.000	335

- Greater REIT home concentrations in MSAs with high information asymmetry