Financially Constrained Cities and Commercial Real Estate Returns

Mariya Letdin * Chongyu Wang † Sean Wilkoff ‡

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Abstract

The capitalization of municipal fiscal health into house prices has been widely studied, but commercial real estate (CRE) offers a unique opportunity to examine this relationship without household mobility frictions. We investigate how municipal financial health influences CRE investment performance using data from the Stanford Municipal Finance Dashboard and NCREIF property returns across the 100 largest U.S. metropolitan areas from 2016 to 2023. We employ panel regressions with extensive controls and a stacked difference-in-differences design exploiting staggered state adoption of fiscal monitoring policies. We find that municipal fiscal health positively predicts CRE returns, with effects operating primarily through appreciation rather than income returns. A one standard deviation improvement in fiscal health is associated with approximately 0.28 percentage points higher quarterly returns (1.1% annually). This pattern suggests investors price fiscal conditions through risk premia and expectations rather than immediate cash flow effects. Effects are strongest for office and self-storage properties and amplified in gateway markets and during the post-COVID period. Event-study evidence shows that enhanced fiscal oversight increases returns, consistent with governance improvements reducing local risk premia. These findings demonstrate that municipal balance-sheet conditions represent a priced risk factor in commercial real estate markets, with implications for both investors assessing local market exposure and policymakers considering fiscal discipline's spillover effects on private capital formation.

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*Florida State University, 821 Academic Way, Tallahassee, FL 32306, mletdin@business.fsu.edu
†Florida State University, 821 Academic Way, Tallahassee, FL 32306, cwang@business.fsu.edu
‡University of Nevada, Reno, College of Business, 1664 N Virginia Street, Reno, NV 89557, swilkoff@unr.edu

1 Introduction

The adage *Location, Location, Location* underscores a fundamental principle of real estate investment—geography shapes value. However, beyond physical location, the financial health of a municipality may play a crucial yet underexplored role in determining commercial real estate (CRE) performance. While the effects of municipal fiscal distress on employment (Adelino et al., 2017), residents' quality of life (Vallee and Sauvagnat, 2023), and housing values ((Aiello et al., 2021), (MacKay, 2014)) are well-documented, its influence on real estate investment outcomes remains less understood.

This study empirically investigates the relationship between municipal fiscal conditions and private CRE investment performance. We develop a conceptual framework identifying four channels: (1) public amenity provision affecting property operating environments; (2) future tax burden expectations as municipalities adjust to fiscal stress; (3) local risk premia reflecting governance quality and policy uncertainty; and (4) agglomeration dynamics linking fiscal stress to urban economic trajectories. These channels generate testable implications about return decomposition, property type heterogeneity, and information incorporation. While our reduced-form empirical strategy cannot definitively isolate individual channels, the collective evidence provides suggestive insights about which mechanisms are operative.

To analyze how fiscal health influences CRE returns across the 100 largest U.S. metropolitan areas, we rely on the Stanford Municipal Finance Dashboard (SMFD) dataset as described by (Giesecke and Duffy, 2023). The SMFD dataset provides standardized financial fundamentals for all state governments and local governments with populations exceeding 65,000 from 2016 to 2023, making it an ideal source for assessing municipal fiscal conditions at scale.

Our main findings indicate that municipal fiscal health is systematically priced in commercial real estate markets. Stronger fiscal conditions predict higher CRE returns, with effects operating primarily through appreciation rather than income components. A one standard deviation improvement in fiscal health is associated with approximately 0.28 percentage points higher quarterly returns (1.1% annually), suggesting that investors incorporate fiscal strength through discount rates and forward-looking valuation rather than contemporaneous cash flows.

The relationship exhibits predictive content over multiple quarters, consistent with gradual information incorporation or persistent local risk premia. Effects are strongest for office and self-storage properties and are amplified during the post-COVID period. Measures

capturing balance-sheet strength and long-run fiscal sustainability display the most robust associations, indicating that markets respond particularly to fiscal flexibility and structural solvency. Event-study evidence exploiting staggered adoption of fiscal monitoring policies shows discrete increases in CRE returns following governance reforms, consistent with improved oversight reducing perceived local risk premia.

Taken together, the evidence helps rule out several alternative explanations. The fiscal effect remains stable across extensive housing, labor market, and local controls, indicating it does not merely proxy for contemporaneous economic conditions. The response is concentrated in appreciation rather than income returns, suggesting valuation rather than immediate operating channels. Moreover, the event-based design provides quasi-experimental support beyond simple correlation. While we cannot isolate a single theoretical mechanism, the patterns are most consistent with municipal fiscal health representing a distinct dimension of local risk capitalized into property values.

These findings have important implications for both investors and policymakers. For investors, municipal fiscal metrics provide incremental information beyond standard market and property-level fundamentals, offering economically meaningful differences in long-horizon returns. For policymakers, the results suggest that fiscal stability and governance quality influence private capital formation through asset valuation channels. Municipal officials seeking to attract post-pandemic investment,[1] may therefore need to credibly signal fiscal discipline, not merely offer short-run incentives. Given that unlike the housing market[2], the CRE investment market is highly sensitive and responsive to financial conditions,[3] understanding how financial health and political climate shape CRE outcomes can provide valuable insights for both policymakers and investors navigating an evolving urban landscape.

Our paper makes several contributions. First, we extend the capitalization literature from residential to commercial real estate markets, demonstrating that municipal balance-sheet conditions have first-order implications for institutional-grade property valuations. The CRE setting offers advantages over residential markets by avoiding household mobility frictions and preference heterogeneity. Second, we provide new evidence on the spillover effects of municipal fiscal policy. While prior work emphasizes effects on municipal borrowing costs, employment, and

[1] https://www.institutionalinvestor.com/article/2di0uxal2s8cey08mal8g/innovation/gateway-markets-and-core-property-types-are-not-what-they-used-to-be

[2] (Tiebout, 1956a)

[3] (Ghent, 2021)

housing values, we show that private commercial real estate investment is also materially affected. Third, from an asset pricing perspective, we document that municipal fiscal health functions as a priced local risk factor with economically meaningful magnitudes. Fourth, we highlight that fiscal discipline has broader implications for urban capital allocation than previously recognized.

Our analysis contributes to several strands of literature at the intersection of urban public finance and commercial real estate asset pricing. Municipal fiscal conditions have long been central to theories of local public finance and land valuation. In the canonical Tiebout (1956) framework, households sort across jurisdictions based on tax and service bundles, implying that differences in fiscal capacity and public goods provision are capitalized into land prices (Tiebout, 1956b). Early empirical work by Oates (1969) and Brueckner (1982) confirms that property taxes and local spending are reflected in housing values. More recent evidence shows that public balance sheet conditions are similarly capitalized. MacKay (2014) and Aiello et al. (2021, 2025) demonstrate that unfunded pension liabilities and public pension windfalls affect residential property prices, while Vallee and Sauvagnat (2023) and Adelino et al. (2017) document real economic effects of local government indebtedness and financing capacity. Although this literature establishes that municipal fiscal fundamentals matter for asset values, it focuses primarily on residential markets, where capitalization reflects household mobility and preference heterogeneity. Commercial real estate, by contrast, is held and priced primarily by institutional investors, and is sensitive to liquidity and delegated investment frictions (Ghent, 2021). Extending the capitalization framework to commercial real estate therefore provides a complementary setting in which to evaluate how municipal fiscal health affects asset pricing.

Our paper also relates to the spatial equilibrium and amenities literature. Albouy (2016), Saiz (2010), and Glaeser et al. (2001) show that local amenities, geographic constraints, and quality of life are capitalized into land values through wage and housing cost differentials, and Carlino and Saiz (2019) documents persistent links between leisure amenities and urban growth. A large complementary literature demonstrates that crime, disorder, and neighborhood instability affect real estate values. Linden and Rockoff (2008) and Ellen et al. (2007) show that localized crime risk is capitalized into housing prices, while Ellen et al. (2013) and Cui and Walsh (2015) link foreclosure, vacancy, and neighborhood distress to increases in crime and declines in nearby property values. In commercial settings, Lens and Meltzer (2016) finds that crime reduces commercial property values, and Calamunci et al. (2022) documents that reductions in organized crime increase commercial property values. Donovan et al. (2024) shows

that crime erodes agglomeration benefits and amenity values, and Spader et al. (2016) and Harcourt (2005) highlight how neighborhood revitalization, policing, and institutional responses shape redevelopment outcomes. Municipal fiscal capacity may influence these mechanisms by affecting public safety, infrastructure maintenance, and service continuity. By linking municipal balance sheet strength to commercial real estate performance, we extend the amenities and neighborhood risk literatures into institutional commercial property markets. Relatedly, recent evidence indicates that violent crime can worsen municipal borrowing costs and fiscal constraints (Kasten and Osborne, 2025), which in turn may affect local service provision and the pricing of commercial real estate.

Our study further contributes to the literature on governance and institutional quality in local economies. Glaeser and Saks (2006) and Butler et al. (2009) document that corruption and political connections distort fiscal and economic outcomes, and Cashman et al. (2025) shows that corruption exposure reduces commercial property portfolio performance. Political dynamics also shape real estate outcomes. Ferreira and Gyourko (2023) examine partisan effects on housing supply, de Benedictis-Kessner et al. (2025) link partisanship to housing policy and zoning, Basile and Filoso (2018) document capitalization effects of political partisanship, and Nguyen and Vergara-Alert (2023) show that electoral uncertainty affects housing price growth and transaction activity. Although this literature emphasizes political alignment and institutional quality, less is known about how fiscal credibility itself influences commercial asset valuation. By exploiting staggered adoption of fiscal monitoring policies (Nakhmurina, 2024), we provide evidence consistent with enhanced oversight improving governance and lowering local risk premia.

Finally, our study builds on recent work examining commercial real estate responses to macroeconomic and fiscal shocks. Alter et al. (2023) documents how crises propagate through commercial real estate markets using transaction-level data, while Holtermans et al. (2024) shows that climate shocks are capitalized into commercial property prices. Asia and Dept (2024) highlights the deterioration of local government finances following the pandemic and real estate downturn, and Gong et al. (2025) models interactions between real estate regulation, liquidity constraints, and local government debt risks. Chambers et al. (2009) and Gyourko et al. (2006) document linkages between housing and commercial real estate cycles. DiPasquale and Wheaton (1992) provides a framework linking space and asset markets, and Rosen (1981); Roback (1982); Moretti (2012) formalize how local conditions affect both cash flows and discount rates in spatial equilibrium. By decomposing total returns into income and appreciation components, we show

that municipal fiscal health primarily affects appreciation rather than income returns, consistent with fiscal conditions operating through forward-looking valuation and discount rate channels.

Taken together, our paper bridges urban public finance, spatial equilibrium, political economy, and commercial real estate asset pricing. We provide systematic evidence that municipal balance sheet strength is a priced determinant of institutional commercial real estate returns, extending the capitalization and local risk literatures beyond residential markets and demonstrating that fiscal discipline influences private capital allocation through asset valuation channels.

2 Conceptual Framework and Candidate Mechanisms

2.1 A Simple Asset Pricing Framework

Consider a commercial property in municipality i at time t. The property generates a stream of net operating income $\{N_{i,t+s}\}_{s=1}^{\infty}$ and is valued according to:

$$P_{i,t} = \sum_{s=1}^{\infty} \frac{\mathbb{E}_t[N_{i,t+s}]}{(1 + r_t + \pi_{i,t})^s} \tag{1}$$

where r_t is the risk-free rate (common across locations) and $\pi_{i,t}$ is the local risk premium specific to municipality i.

Municipal fiscal health $F_{i,t}$ affects property values through three key components: expected cash flows, expected growth, and the local risk premium.

First, fiscal conditions may influence expected future net operating income. Municipalities with stronger fiscal positions are better able to maintain public services, infrastructure, and safety, supporting tenant demand and operating performance. Fiscal stress, by contrast, may increase expectations of service deterioration or future tax increases that reduce after-tax operating income. Formally, this channel operates through

$$\frac{\partial \mathbb{E}_t[N_{i,t+s}]}{\partial F_{i,t}},$$

which captures how fiscal conditions shift expected future NOI. Even if current leases are sticky

and contemporaneous income responds slowly, forward-looking investors may revise expectations about future cash flows, affecting present valuations.

Second, fiscal health may affect expected growth in operating income. Stronger balance sheets allow municipalities to sustain public investment and respond to shocks, supporting long-run economic activity and agglomeration forces. Fiscal deterioration may weaken growth prospects through declining services, reduced business formation, or population outflows. This channel operates through

$$\frac{\partial g_{i,t}}{\partial F_{i,t}},$$

where $g_{i,t}$ denotes expected growth in net operating income. Changes in growth expectations directly influence valuation through the denominator of the discounting framework.

Third, fiscal conditions may affect the local risk premium required by investors. Fiscal stress can signal governance weakness, policy uncertainty, or increased probability of disruptive fiscal adjustment. Investors may therefore demand higher expected returns to compensate for location-specific risk. Improvements in fiscal credibility or monitoring, by contrast, may reduce governance-related risk premia. Formally, this mechanism operates through

$$\frac{\partial \pi_{i,t}}{\partial F_{i,t}},$$

which captures how fiscal conditions affect required returns.

Assuming constant growth, equation (1) simplifies to the familiar Gordon growth form:

$$P_{i,t} = \frac{N_{i,t}(1 + g_{i,t})}{r_t + \pi_{i,t} - g_{i,t}} \tag{2}$$

Taking logs and differentiating with respect to fiscal health yields:

$$\frac{\partial \ln P_{i,t}}{\partial F_{i,t}} = \underbrace{\frac{\partial \ln N_{i,t}}{\partial F_{i,t}}}_{\text{Current cash flow}} + \underbrace{\frac{1}{r_t + \pi_{i,t} - g_{i,t}} \left(\frac{\partial g_{i,t}}{\partial F_{i,t}} - \frac{\partial \pi_{i,t}}{\partial F_{i,t}} \right)}_{\text{Valuation effect}} \tag{3}$$

The first term captures how fiscal conditions affect *current* NOI. The second term captures how fiscal conditions affect *valuations* through growth expectations and discount rates. This

decomposition motivates our analysis of four candidate channels.

2.2 Two Economic Forces: Cash-Flow and Discount-Rate Channels

The framework in Section 2.1 implies that municipal fiscal health affects commercial real estate values through two broad economic forces: expected cash flows and required returns. The four candidate mechanisms operate within these two forces and generate distinct predictions across property types.

I. Cash-Flow Channel

The first economic force operates through expected net operating income and its growth. Fiscal health may affect both the level and trajectory of operating cash flows through amenity provision, anticipated tax adjustments, and agglomeration dynamics.

Amenity Provision. Let $A_{i,t}$ denote local amenity provision. Fiscal health affects amenities, which in turn affect property performance:

$$\frac{\partial A_{i,t}}{\partial F_{i,t}} > 0 \quad \text{and} \quad \frac{\partial N_{i,t+s}}{\partial A_{i,t}} > 0.$$

Municipalities with stronger fiscal positions are better able to maintain infrastructure, public safety, and service quality. Fiscal stress may result in deferred maintenance, reduced policing, and deterioration in the local business environment. Although existing leases may limit immediate adjustments in current income so that $\frac{\partial N_{i,t}}{\partial A_{i,t}} \approx 0$, forward-looking investors revise expectations about future operating conditions.

Property types that depend heavily on local amenities and pedestrian activity, such as retail and office, should be most sensitive to this channel. Industrial and self-storage properties, which depend more on logistics or cost considerations than on urban vibrancy, are likely to exhibit weaker amenity-driven cash-flow responses.

Future Tax Burden. Fiscally distressed municipalities face intertemporal budget constraints. Let $\tau_{i,t+s}$ denote the property tax rate in period $t+s$. After-tax net operating income is given by $N^{net}_{i,t+s} = N_{i,t+s}(1-\tau_{i,t+s})$. Fiscal deterioration raises expected future tax

rates:

$$\frac{\partial \mathbb{E}_t[\tau_{i,t+s}]}{\partial F_{i,t}} < 0 \quad \text{for} \quad s > 0.$$

Because commercial real estate is immobile and constitutes a visible tax base, investors may anticipate that fiscal adjustment disproportionately burdens property owners. This channel therefore reduces the present value of expected after-tax cash flows even before tax increases occur.

Office and retail properties with high assessed values relative to margins may be particularly exposed to this mechanism. Industrial facilities and self-storage assets operating in lower-cost locations may be less sensitive to anticipated fiscal extraction.

Agglomeration and Urban Dynamics. Let $E_{i,t}$ denote local economic activity. The evolution of economic activity can be expressed as

$$\frac{dE_{i,t}}{dt} = f(E_{i,t}, A_{i,t}, F_{i,t}),$$

with $\frac{\partial f}{\partial E_{i,t}} > 0$ capturing agglomeration externalities, $\frac{\partial f}{\partial A_{i,t}} > 0$ reflecting the role of amenities in attracting firms and households, and $\frac{\partial f}{\partial F_{i,t}} > 0$ reflecting the support that fiscal capacity provides to local growth.

Fiscal deterioration may therefore initiate a feedback process in which reduced services lower local economic activity, shrinking the tax base and further weakening fiscal capacity in subsequent periods. This dynamic is particularly relevant for property types that rely on dense economic interaction, such as office and urban retail. Industrial and self-storage properties, which can operate in lower-density or peripheral locations, may be less exposed to agglomeration-driven amplification.

II. Discount-Rate Channel

The second economic force operates through required returns. The local risk premium can be decomposed as

$$\pi_{i,t} = \pi_t^{market} + \pi_{i,t}^{liquidity} + \pi_{i,t}^{governance},$$

where $\pi_{i,t}^{governance} = h(F_{i,t}, Q_{i,t})$ depends on fiscal health $F_{i,t}$ and institutional quality $Q_{i,t}$. We expect

$$\frac{\partial \pi_{i,t}^{governance}}{\partial F_{i,t}} < 0 \quad \text{and} \quad \frac{\partial^2 \pi_{i,t}^{governance}}{\partial F_{i,t} \partial Q_{i,t}} < 0.$$

Fiscal stress may signal governance weakness, policy uncertainty, or heightened probability of disruptive fiscal adjustment. Investors may therefore demand higher required returns to hold commercial real estate in fiscally distressed jurisdictions. Improvements in fiscal credibility or monitoring may reduce governance-related risk premia and increase asset values even in the absence of immediate cash-flow changes.

Long-duration property types such as office are particularly sensitive to changes in required returns because valuation effects compound over distant cash flows. Self-storage and certain industrial properties, which may adjust pricing more frequently or operate with shorter effective lease durations, may exhibit smaller valuation responses to persistent shifts in local risk premia.

Taken together, these mechanisms imply that fiscal health may affect commercial real estate through both expected cash-flow adjustments and discount-rate revaluation. If fiscal conditions primarily influence expectations about risk and governance rather than contemporaneous operating income, effects should be concentrated in appreciation returns rather than income returns.

2.3 Return Decomposition and Time Horizons

Total returns can be decomposed into income and appreciation components:

$$R_{i,t}^{total} = R_{i,t}^{income} + R_{i,t}^{appreciation} \tag{4}$$

where approximately:

$$R_{i,t}^{income} \approx \frac{N_{i,t}}{P_{i,t}}(r_t + \pi_{i,t} - g_{i,t}) \tag{5}$$

$$R_{i,t}^{appreciation} \approx \frac{\Delta N_{i,t}}{N_{i,t}} + \Delta g_{i,t} - \Delta \pi_{i,t} \tag{6}$$

From equation (11), income returns depend on the current NOI-to-price ratio, which adjusts slowly because leases are sticky and tenants do not immediately relocate in response to fiscal conditions. Existing lease contracts fix rental payments in the short run, and operating income is therefore relatively stable. As a result, fiscal deterioration is unlikely to produce large immediate changes in income returns. Formally,

$$\frac{\partial R_{i,t}^{income}}{\partial F_{i,t}} \approx 0.$$

In contrast, equation (12) shows that appreciation returns respond to changes in growth expectations and risk premia. These components can adjust rapidly as fiscal information arrives and investors reassess local conditions. Risk premia may increase before cash flows deteriorate, and growth expectations may incorporate anticipated fiscal trajectories. Valuation adjustments therefore occur even in the absence of contemporaneous operating income changes. Accordingly,

$$\left| \frac{\partial R_{i,t}^{appreciation}}{\partial F_{i,t}} \right| \gg 0.$$

This decomposition clarifies the distinction between short-run operating effects and medium-run valuation adjustments. If fiscal health primarily influences forward-looking expectations and discount rates rather than current net operating income, empirical effects should be concentrated in appreciation returns rather than income returns.

2.4 Empirical Implications

While we cannot definitively isolate individual channels (and they may operate simultaneously) these mechanisms generate testable empirical implications that organize our analysis:

Implication 1 (Return decomposition): If channels operate through forward-looking valuation effects rather than immediate cash flows:

$$\left| \frac{\partial R_{i,t}^{appreciation}}{\partial F_{i,t}} \right| \gg \left| \frac{\partial R_{i,t}^{income}}{\partial F_{i,t}} \right| \tag{7}$$

This would help distinguish between contemporaneous amenity deterioration (affecting current NOI) versus investor repricing (affecting valuations).

Implication 2 (Property type heterogeneity): Effects should vary by property type j depending on amenity dependence, tax exposure, and local economic sensitivity. Formally, if α_j captures amenity sensitivity, β_j captures tax exposure, and γ_j captures risk premium sensitivity:

$$\frac{\partial R_{i,j,t}}{\partial F_{i,t}} = \alpha_j \cdot (\text{amenity effect}) + \beta_j \cdot (\text{tax effect}) + \gamma_j \cdot (\text{risk premium effect}) \tag{8}$$

We expect office and retail (high amenity dependence) to show larger effects than industrial (lower amenity dependence), though the specific ranking depends on which channels dominate.

Implication 3 (Information incorporation): If investors gradually incorporate fiscal information or risk premia are persistent, fiscal health should predict future returns:

$$\mathbb{E}_t[R_{i,t+k}] = \delta_k F_{i,t} + \text{controls} \quad \text{with } \delta_k > 0 \text{ for } k > 0 \tag{9}$$

Immediate full incorporation would imply $\delta_k \approx 0$, while gradual adjustment implies declining but positive δ_k over multiple quarters.

Implication 4 (Market heterogeneity). Fiscal effects may be amplified in certain market environments.

First, gateway cities may exhibit stronger capitalization effects.[4] Because these markets are characterized by deeper capital markets, stronger agglomeration economies, and greater sensitivity to investor sentiment, ((Ling et al., 2019); (Ling et al., 2021)) changes in perceived fiscal stability may translate more quickly into valuation adjustments.

Second, supply-constrained cities may experience amplified fiscal capitalization. In

[4]We classify the NCREIF properties into one of three market tiers: gateway, secondary, and tertiary. Consistent with the NCREIF definition, we define gateway markets as the MSAs of Boston, Chicago, Los Angeles, New York, San Francisco, and Washington, DC.

markets with stringent land-use regulation or geographic constraints, limited new supply can magnify price responses to shifts in expected demand or risk premia.

Third, high social vulnerability areas may display stronger fiscal effects. Municipalities with greater socioeconomic fragility may have less fiscal capacity to absorb shocks, making fiscal strength more salient for expectations about service continuity and risk.

Fourth, periods of heightened uncertainty, such as the post-COVID environment, may increase investor sensitivity to governance quality and fiscal credibility. During such periods, fiscal conditions may play a larger role in determining required returns and valuation multiples.

Implication 5 (Policy response): If enhanced fiscal oversight reduces governance risk and improves investor confidence, exogenous improvements in fiscal monitoring should increase returns through equation (2), most plausibly by reducing $\pi_{i,t}^{governance}$ (channel 3).

2.5 Reduced Form Interpretation and Empirical Strategy

Our empirical specification estimates:

$$R_{i,t} = \alpha + \beta F_{i,t-1} + \gamma X_{i,t} + \lambda_i + \mu_t + \varepsilon_{i,t} \tag{10}$$

where $R_{i,t}$ is commercial real estate returns in municipality i at time t, $F_{i,t-1}$ is lagged fiscal health, $X_{i,t}$ are controls, λ_i are municipality fixed effects, and μ_t are time fixed effects.

The coefficient β captures the reduced-form relationship between fiscal health and returns, combining all channels in equation (3). We do not claim to recover the structural parameters of individual mechanisms, as they may operate simultaneously and interact. The municipality fixed effects λ_i absorb time-invariant local characteristics such as geography, long-run productivity, and historical amenities, while the time fixed effects μ_t absorb common macro shocks including national interest rates, business cycles, and regulatory changes.

This reduced-form approach is appropriate because the channels described above interact with one another. Tax expectations may depend on governance quality, amenity provision may influence agglomeration dynamics, and all mechanisms jointly affect required returns. Attempting to separately identify each channel structurally would require strong

assumptions and additional data on expectations that are not directly observable.

The total effect β is also the quantity of primary interest for investors and policymakers. From an asset pricing perspective, the combined capitalization effect determines valuation and allocation decisions, regardless of which specific mechanism dominates. Measuring the overall relationship between fiscal health and returns therefore provides economically meaningful evidence even without isolating individual structural parameters.

Finally, data limitations constrain structural identification. We do not observe investor expectations, granular real-time service provision adjustments, or anticipated tax schedules that would allow a fully structural estimation of the channels. The reduced-form specification therefore provides a disciplined and transparent way to estimate the aggregate effect of fiscal conditions on commercial real estate returns.

However, our heterogeneity analyses, including return decomposition, property-type variation, predictive regressions, and subsample tests, provide suggestive evidence about which mechanisms may be more important in different contexts. In addition, our event-study design exploiting staggered state adoption of fiscal monitoring policies provides more credible identification than standard panel regressions, while still capturing the reduced-form impact of enhanced oversight rather than isolating a single structural channel.

3 Data

This study combines administrative, financial, and socioeconomic data from multiple well-established sources to examine municipal fiscal health and its interaction with commercial real estate markets, amenities, and local institutional conditions. Our baseline sample covers the period 2016 through 2023 and includes the 100 largest U.S. metropolitan areas. All datasets are merged using standard geographic identifiers from the U.S. Census Bureau and aligned at the CBSA-quarter level.

3.1 Municipal Fiscal Health

Measures of municipal fiscal health are drawn from Giesecke and Duffy (2023), who construct a standardized set of Key Performance Indicators (KPIs) for U.S. local governments

using audited Comprehensive Annual Financial Reports (CAFRs).[5] We use annual fiscal data from 2016 through 2023, corresponding to the availability of consistent and standardized municipal financial measures. The KPIs capture liquidity, reserves, debt burden, revenue growth, net worth, and long-term obligations, including pension and other post-employment benefit (OPEB) liabilities. Annual fiscal measures are matched to quarterly real estate returns using the most recently available fiscal information.

3.2 Real Estate Markets

Commercial real estate performance is measured using data from the National Council of Real Estate Investment Fiduciaries (NCREIF), which provides property-level and aggregate performance measures for institutional-grade commercial real estate assets.[6] We use quarterly total, income, and appreciation returns from 2016 through 2023 and aggregate them to the CBSA-quarter level.

Residential housing market conditions are measured using the Federal Housing Finance Agency (FHFA) repeat-sales House Price Index.[7] We use quarterly house price appreciation from 2016 through 2023 to control for local housing demand and broader real estate cycle dynamics.

3.3 Demographics and Economic Controls

Demographic and socioeconomic characteristics are obtained from the U.S. Census Bureau, drawing on the American Community Survey (ACS).[8] We use annual ACS estimates from 2016 through 2023, including population, employment, median household income, and educational attainment. Annual measures are aligned with quarterly return data using standard temporal matching procedures.

[5]Giesecke, O., and J. Duffy (2023). State and Local Government Financial Fundamentals. Data are available via the Stanford Municipal Finance Dashboard, `https://municipalfinance.stanford.edu/`.

[6]National Council of Real Estate Investment Fiduciaries (NCREIF), Property Index data, `https://www.ncreif.org`.

[7]Federal Housing Finance Agency (FHFA), House Price Index (HPI), `https://www.fhfa.gov/data/hpi`.

[8]U.S. Census Bureau, American Community Survey, `https://www.census.gov`.

3.4 Crime and Public Safety

Local crime conditions are measured using data from the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) Program.[9] We construct violent and property crime rates for 2016 through 2023 and normalize offenses by population. Crime measures are aggregated to the CBSA level and serve as controls for local disamenities that may affect commercial property valuations.

3.5 Health, Vulnerability, and Disaster Exposure

Measures of social vulnerability are obtained from the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI).[10] We use annual SVI measures spanning 2016 through 2023.

Exposure to natural hazards is measured using the Spatial Hazard Events and Losses Database for the United States (SHELDUS).[11] We use county-level disaster and property damage data from 2016 through 2023 and aggregate these measures to the CBSA level.

3.6 Land Use Regulation, Amenities, and Political Context

Land-use regulation is measured using the Wharton Residential Land Use Regulation Index.[12] This index is time-invariant over our sample period and captures cross-sectional differences in regulatory stringency.

Local amenity values are measured using the framework developed by Albouy (2016),[13] which provides time-invariant spatial equilibrium–based estimates of the implicit value of local amenities.

[9] Federal Bureau of Investigation, Uniform Crime Reporting Program, accessed via the FBI Crime Data Explorer, `https://cde.ucr.cjis.gov`.

[10] Centers for Disease Control and Prevention (CDC), Social Vulnerability Index, `https://www.atsdr.cdc.gov/place-health/php/svi/index.html`.

[11] Spatial Hazard Events and Losses Database for the United States (SHELDUS), Arizona State University, `https://sheldus.asu.edu`.

[12] Gyourko, J., A. Saiz, and A. Summers (2008). A New Measure of the Local Regulatory Environment for Housing Markets: The Wharton Residential Land Use Regulation Index. Wharton School, University of Pennsylvania.

[13] Albouy, D. (2016). "What Are Cities Worth? Land Rents, Local Productivity, and the Total Value of Amenities." *Review of Economics and Statistics*, 98(3), 477–487.

Local political orientation is measured using county-level presidential election returns from the MIT Election Data and Science Lab (MEDSL),[14] covering the 2016 and 2020 elections within our sample window. These election outcomes are assigned to CBSAs based on county composition.

Together, land-use regulation, amenities, crime, vulnerability measures, and political orientation characterize the institutional and policy environment facing local governments. These factors shape fiscal capacity, governance quality, and local economic conditions that are relevant for commercial real estate market outcomes.

All datasets are merged at the CBSA level. When variables are available at the county level (e.g., crime, disaster exposure, political outcomes), we aggregate to the CBSA using population weights based on Census county population estimates. Fiscal health measures are matched to the primary city within each CBSA, following standard practice in the municipal finance literature. Quarterly commercial real estate returns are aggregated to the CBSA level using value weights across properties. Annual variables are aligned to quarterly observations using the most recently available annual value. The resulting panel is unbalanced due to variation in property coverage and data availability across markets, although results are robust to restricting the sample to balanced panels.

After merging all datasets, our final panel consists of 100 metropolitan statistical areas observed quarterly from 2016 through 2023, yielding approximately 3,200 CBSA-quarter observations.[15] The unit of observation is the CBSA-quarter. All fiscal measures are annual and are aligned to quarterly returns using the most recently available fiscal data. Time-invariant measures, including land-use regulation and amenity values, enter the analysis through their interaction with time-varying fiscal conditions or via cross-sectional heterogeneity analyses.

4 Methodology

We leverage the variation in municipal fiscal strength across municipalities, as documented by (Giesecke and Duffy, 2023), to analyze the impact of fiscal health on CRE investment. Figure 1 from (Giesecke and Duffy, 2023) illustrates this variation. Figure 1

[14] MIT Election Data and Science Lab (MEDSL). County Presidential Election Returns, 2000–2020. Available via the Harvard Dataverse at `https://dataverse.harvard.edu/dataverse/medsl`.

[15] The exact number of observations varies slightly across specifications due to data availability for certain controls.

provides a depiction of calculated fiscal strength scores from 0 to 100, with corresponding dark to light shading. Some of the top ranked municipalities include West Bloomfield, Michigan, and Santa Clarita, CA. Notably these are mostly smaller markets. The bottom rankings include several larger municipalities, such as Chicago, IL and Portland, OR.

We focus our analysis on the following municipal fiscal health key performance indicators (KPI) defined in (Giesecke and Duffy, 2023): The *Reserve KPI* which measures the financial cushion available by calculating the ratio of the General Fund Unrestricted Fund Balance to total General Fund Expenditure net of transfers. The *Debt Burden KPI* evaluates the municipality's debt sustainability by comparing Long-Term Obligations to Revenues. To assess short-term financial stability, the *Liquidity KPI* captures the availability of cash and investments relative to General Fund Liabilities. The *Revenue Growth KPI* examines the compounded annual growth rate of General Fund Revenues over a three-year period. We also consider pension-related obligations through multiple indicators. The *Pension Obligation KPI* quantifies the Net Pension Liability relative to Revenues, while the *Pension Funding KPI* measures the ratio of Fiduciary Net Position to Total Pension Liability. The *Pension Cost KPI* reflects the proportion of Revenues allocated to Actuarially Required Pension Contributions.

Similarly, other post-employment benefits (OPEB) obligations are captured through the *OPEB Obligation KPI*, which assesses the Net OPEB Liability relative to Revenues, and the *OPEB Funding KPI*, which compares OPEB Assets to OPEB Liabilities. Finally, the *Net Worth KPI* gauges overall financial health by measuring Unrestricted Net Assets as a fraction of Revenues. Next, we estimate the following linear model, using the KPIs called municipal fiscal health characteristics as the primary explanatory variables:

$$\begin{aligned}\text{Return}_{l,j,t} = \boldsymbol{\alpha} + \boldsymbol{\beta}\,\text{Municipal Fiscal Health Characteristics}_{l,t-1} + \boldsymbol{\gamma}\,\text{Zillow Home Price Index}_{l,t} \\ + \boldsymbol{\rho}\,\text{Interest Rate}_t + \phi_t + \epsilon_{l,j,t}.\end{aligned} \tag{11}$$

Our dependent variable is the annual commercial real estate returns provided by NCREIF specified as *Return*, for municipality l, property type j, during year t. *Zillow Home Price Index* is the house price index in city l during year t. ϕ_t are year/quarter fixed effects. The Interest Rate is the Annualized yield on 10-year treasury securities.

Following the findings of (Vallee and Sauvagnat, 2023) we also consider the impact of

political party affiliation, based on U.S. Presidential elections. To examine this relationship, we estimate the following regression:

$$\begin{aligned}\text{Return}_{l,j,t} = \boldsymbol{\alpha} + \boldsymbol{\beta}\,\text{Municipal Fiscal Health Characteristics}_{l,t-1} + \boldsymbol{\gamma}\,\text{Zillow Home Price Index}_{l,t} \\ + \boldsymbol{\delta}\,\text{Political Party}_{l,t} + \boldsymbol{\rho}\,\text{Interest Rate}_{t} + \phi_t + \epsilon_{l,j,t}.\end{aligned} \tag{12}$$

Political Party is the outcome of the most recent U.S. Presidential election (three are captured in the sample period) in city l, year t. The inclusion of political affiliation allows us to assess whether fiscal health effects vary based on governing party dynamics.

5 Results

In this section, we test the empirical implications derived in Section 2. We examine whether fiscal health effects operate through appreciation versus income (Implication 1), vary by property type (Implication 2), predict future returns (Implication 3), differ across markets and time periods (Implication 4), and respond to policy changes (Implication 5). While we cannot definitively isolate individual theoretical channels, the collective evidence helps rule out alternative explanations and provides suggestive evidence consistent with multiple channels operating simultaneously.

5.1 Summary Statistics

Table 1 reports summary statistics for municipal fiscal health measures, commercial real estate outcomes, and control variables across the 100 largest metropolitan areas from 2016 through 2023. The unit of observation is the CBSA-quarter.

Commercial real estate total returns average 1.57 percent per quarter, with a standard deviation of 2.70 percent. Income returns are comparatively stable, averaging 1.23 percent per quarter with a standard deviation of 0.197, whereas appreciation returns exhibit substantially greater volatility, averaging 0.34 percent with a standard deviation of 2.69. This dispersion indicates that most short-run variation in total returns is driven by valuation changes rather than operating cash flows. Turnover averages 1.49 percent, though the median is zero, reflecting limited trading activity in many CBSA-quarter observations.

Municipal fiscal health displays meaningful cross-sectional variation. The composite

Final Score averages 61.83 with a standard deviation of 10.12, and an inter-quartile range from 54.85 (25th percentile) to 69.39 (75th percentile). Component KPIs also exhibit dispersion. For example, the Reserve KPI has a mean of 0.33, the Debt Burden KPI averages 0.72, and the Liquidity KPI averages 4.786, suggesting substantial heterogeneity in short-term fiscal flexibility and long-term obligations across municipalities. Pension and OPEB measures also vary considerably, reflecting differences in structural balance sheet strength.

Economic and city-level controls likewise display cross-market variation. Quarterly FHFA house price growth averages 2.03 percent with a standard deviation of 2.01, indicating heterogeneous housing cycle dynamics across CBSAs. Log household income averages 11.17, and the bachelor's degree share averages 21.23 percent. Crime rates, social vulnerability, and disaster exposure measures also exhibit substantial dispersion, consistent with differences in local amenity and institutional environments.

Table 2 presents pairwise Pearson correlations among the primary variables. The unconditional correlation between total CRE returns and log fiscal health (Log(Final Score)) is -0.040, statistically significant at the 5 percent level. Although economically small, this negative raw correlation suggests that unconditional relationships between fiscal strength and returns may be influenced by broader macroeconomic or real estate cycle dynamics that are not controlled for in simple correlations.

Total returns are strongly positively correlated with local housing price growth (correlation 0.520, significant at the 1 percent level), highlighting the importance of controlling for housing market conditions in subsequent regressions. Fiscal health is modestly positively correlated with several local characteristics, including log household income (0.120), log population (0.080), and bachelor's degree share (0.090), but these correlations are moderate in magnitude. The modest pairwise relationships suggest that fiscal health captures information distinct from conventional measures of local economic scale and human capital.

Taken together, the summary statistics and correlations reveal substantial heterogeneity in fiscal conditions and real estate performance across metropolitan areas. While simple correlations do not show a strong positive unconditional relationship between fiscal health and total returns, the presence of meaningful cross-sectional variation motivates the fixed-effects panel analysis that follows, which isolates within-market changes in fiscal conditions from broader housing cycles and macroeconomic trends.

5.2 Baseline panel evidence and the role of controls

Table 3 presents baseline panel regressions relating municipal fiscal health to commercial real estate total returns. The dependent variable is the CBSA-quarter NCREIF total return, and the key explanatory variable is the log of the Stanford Municipal Finance Dashboard *Final Score*. All specifications include CBSA fixed effects and year-quarter fixed effects, so identification comes from within-metropolitan changes in fiscal conditions relative to common national shocks. Standard errors are clustered at the CBSA level. The model incrementally introduces controls designed to absorb alternative channels through which local economic conditions might influence CRE returns.

Column (1) presents the baseline specification including only fiscal health and fixed effects. The coefficient on log(Final Score) is 2.365 and statistically significant at the 1 percent level. Because the fiscal measure enters in logs, a 10 percent increase in municipal fiscal strength is associated with approximately a 0.237 percentage point increase in quarterly commercial real estate returns. Relative to the sample mean quarterly return of 1.573 percent (Table 1), this represents roughly a 15 percent increase. Annualized, this corresponds to approximately 0.95 percentage points in additional return. The positive association is consistent with models in which stronger municipal balance sheets reduce local risk premia, improve expectations about future public service provision, and enhance the stability of the operating environment for income-producing properties.Because CBSA fixed effects absorb time-invariant local characteristics (e.g., geography, long-run productivity, historical amenities), the estimate reflects changes in fiscal conditions rather than cross-sectional sorting across markets.

Column (2) adds local housing market conditions using quarterly FHFA house price growth. Housing prices proxy for local demand shocks, credit conditions, and broader real estate cycle dynamics that are known to co-move with commercial property valuations (Gyourko et al., 2006; Chambers et al., 2009). The coefficient on fiscal health declines to 1.844 but remains statistically significant at the 1 percent level, implying a 0.184 percentage point increase in quarterly returns for a 10 percent improvement in fiscal strength. The attenuation suggests that part of the baseline relationship reflects co-movement with local real estate cycles, yet a substantial independent fiscal effect remains.

Column (3) introduces local economic fundamentals and city characteristics, including

employment growth, log population, log household income, bachelor's degree share, municipal bond spreads, social vulnerability, and disaster exposure. These controls account for labor market conditions, scale effects, income growth, human capital, local credit risk, and exposure to adverse shocks that may independently affect property valuations. The coefficient on fiscal health decreases modestly to 1.685 and remains statistically significant at the 5 percent level. Economically, a 10 percent increase in fiscal strength corresponds to approximately a 0.169 percentage point increase in quarterly returns. The modest reduction in magnitude indicates that fiscal strength is partially correlated with broader economic fundamentals but retains independent explanatory power.

Columns (4) through (6) restrict the sample to CBSAs for which amenity and land-use regulation measures are available. Column (4) replicates the baseline specification on this reduced sample. The coefficient on log(Final Score) is 2.134 and statistically significant at the 1 percent level, implying a 0.213 percentage point increase in quarterly returns for a 10 percent improvement in fiscal health. The similarity in magnitude relative to Column (1) indicates that the baseline results are not driven by sample composition.

Column (5) adds the full set of economic controls within the restricted sample, adding measures of local amenities, crime, and commercial real estate supply. Amenity controls capture quality-of-life factors that influence location choice and capitalization into property values (Albouy, 2016). Crime rates proxy for local disamenities that affect rents, risk perceptions, and discount rates (Ellen et al., 2007). Supply controls account for development intensity and competitive pressures in local CRE markets (DiPasquale and Wheaton, 1992). The fiscal health coefficient increases to 2.576 and remains statistically significant at the 1 percent level. A 10 percent increase in fiscal strength corresponds to approximately a 0.258 percentage point increase in quarterly returns, or roughly 16 percent of the mean quarterly return. This specification indicates that the relationship is not explained by differences in neighborhood quality, safety, or construction activity.

Column (6) further incorporates crime measures (robbery, larceny theft, and aggravated assault rates), total amenity value interacted with year, and the supply restrictions index interacted with year. Crime proxies local disorder and risk ((Lens and Meltzer, 2016);(Donovan et al., 2024)), while amenity and land-use measures capture quality-of-life and regulatory constraints that shape local real estate values ((Albouy, 2016); (Saiz, 2010);

(Gyourko et al., 2021)). Allowing these characteristics to vary over time isolates the effect of fiscal health from time-varying amenity and supply conditions. After conditioning on these additional controls, the coefficient on fiscal health is 1.977 and statistically significant at the 1 percent level. The implied economic magnitude remains substantial: a 10 percent increase in fiscal strength corresponds to approximately a 0.198 percentage point increase in quarterly returns.

Across all specifications, the coefficient on fiscal health ranges from 1.685 to 2.576 and remains economically large and statistically significant. The stability of the estimates across increasingly rich control sets indicates that municipal fiscal strength captures variation distinct from housing cycles, labor market fundamentals, local credit spreads, crime, amenity values, and regulatory supply constraints. The evidence is consistent with commercial real estate markets pricing changes in municipal fiscal conditions through risk, discount rate, and expected service provision channels.

5.3 Event-based evidence: stacked difference-in-differences

This section provides event-based evidence using a stacked difference-in-differences (DiD) design that exploits the staggered adoption of state-level Fiscal Monitoring Policies (FMPs). These policies require regular review of municipal financial reports to identify fiscal distress and were adopted by U.S. states at different points in time, generating plausibly exogenous variation in municipal fiscal oversight (Nakhmurina, 2024).

5.3.1 Policy background and treatment timing

FMP adoption occurred in waves between 2001 and 2017. Treated cohorts include Florida (2001), Michigan (2002), New Mexico (2012), Colorado and New York (2013), Louisiana, Pennsylvania, and Tennessee (2014), Nevada and Oregon (2015), Ohio and Rhode Island (2016), and Virginia (2017). States that adopted FMPs prior to 2000 are excluded from the analysis and serve as always-treated jurisdictions.

5.3.2 Estimation and results

Table 4 reports results from the stacked DiD estimation. The baseline specification regresses total commercial real estate returns on an interaction between a treatment cohort indicator and a post-adoption indicator. All regressions absorb CBSA-by-event fixed effects and event-by-year-quarter fixed effects, ensuring identification comes from within-CBSA changes relative to cohort-specific time effects.

Column (1) presents results from the bivariate specification. Column (2) adds a rich set of lagged controls measured at event year $E-1$, each interacted with the post-adoption indicator. Across specifications, the estimated treatment effect is positive, statistically significant, and economically meaningful. The coefficient on the treatment-by-post interaction equals 0.525 in the bivariate specification and 0.414 after including lagged controls.

Figure 2 visualizes the dynamic treatment effects underlying Table 4. The event study plot confirms two key identification assumptions. First, pre-treatment coefficients are close to zero and statistically insignificant, supporting parallel trends between treated and control CBSAs prior to policy adoption. Second, the treatment effect materializes immediately upon adoption and persists throughout the post-treatment window, ruling out spurious pre-trends or mean reversion.

The estimated treatment effect ranges from 0.41 to 0.53 percentage points per quarter (1.6-2.1% annually) depending on control specification. The absence of anticipation effects visible in Figure 2 suggests investors did not price policy changes before formal adoption, supporting our interpretation that enhanced fiscal oversight causally improves CRE returns through reduced governance risk.

The positive and statistically significant effect of fiscal monitoring policy adoption on CRE returns is most consistent with the governance and risk premium channel (Section 2.2, Channel 3). Enhanced fiscal oversight likely reassures investors about municipal fiscal discipline, reducing local risk premia and increasing asset valuations.

5.4 Mechanisms and Heterogeneity

5.4.1 Return decomposition: appreciation versus income

Table 5 decomposes total returns into appreciation and income components. Columns (1) and (2) focus on appreciation returns, while Columns (3) and (4) examine income returns. The results show that the positive association between municipal financial health and total returns is driven almost entirely by appreciation returns. The coefficient on financial health is large and statistically significant for appreciation, whereas the corresponding estimates for income returns are smaller and generally weaker.

This pattern is consistent with capitalization effects operating through asset values rather than through short-run changes in net operating income. Investors appear to price municipal fiscal conditions primarily through discount rates and valuation expectations, rather than through immediate cash flow effects.

5.4.2 Predictive content of municipal financial health

Table 6 examines whether municipal financial health predicts future commercial real estate returns over multiple horizons. Financial health exhibits significant predictive power for returns in the current quarter and several quarters ahead, with the strength of the relationship gradually attenuating at longer horizons.

The presence of predictability is consistent with slow-moving capitalization and gradual incorporation of fiscal information into prices. At the same time, the declining magnitude across horizons suggests that fiscal health captures information that is eventually reflected in valuations rather than permanent excess returns.

5.4.3 Fiscal dimensions

Table 7 Panel A through Panel C disaggregate the composite fiscal health measure into its underlying components. Panel A focuses on total returns, Panel B on appreciation returns, and Panel C on income returns. The results indicate that not all dimensions of fiscal health are equally priced. Measures related to fiscal flexibility and balance-sheet strength exhibit the

strongest and most consistent associations with returns, particularly through appreciation.

In contrast, components more weakly linked to budgetary capacity or long-run fiscal sustainability display smaller and less robust effects. This heterogeneity reinforces the interpretation that investors price fiscal characteristics that directly affect local risk and future tax or service uncertainty.

5.4.4 Heterogeneity by property type

Table 8 Panel A through Panel C examine heterogeneity across property types. Panel A reports total returns, Panel B appreciation returns, and Panel C income returns. The relationship between municipal financial health and returns varies meaningfully across sectors. Property types with longer-duration cash flows and greater exposure to local demand conditions exhibit stronger capitalization effects, particularly through appreciation returns.

In contrast, income returns show limited sensitivity to fiscal health across most property types, consistent with earlier decomposition results. These patterns provide further evidence that fiscal health is priced primarily through valuation channels rather than operating income.

5.4.5 Subsample analyses

Table 9 presents subsample analyses exploring heterogeneity across gateway cities, the post-COVID period, and political control. The interaction terms indicate that the effect of municipal financial health is amplified in certain environments. In particular, the relationship is stronger in gateway markets and during the post-COVID period, consistent with heightened sensitivity to local fiscal risk during periods of uncertainty and market stress.

The political subsample results suggest that fiscal health effects are not merely proxies for partisan governance but instead reflect underlying economic and budgetary conditions faced by municipalities.

6 Conclusion

This paper examines whether and how municipal financial health is priced in commercial real estate markets. Using a large panel of CBSA-level NCREIF returns combined with detailed measures of municipal fiscal conditions from the Stanford Municipal Finance Dashboard, we document a robust positive association between municipal financial health and commercial real estate performance across the 100 largest U.S. metropolitan areas from 2016 to 2023.

Several empirical patterns help clarify the underlying mechanisms. First, fiscal health effects manifest primarily through appreciation rather than income returns, indicating capitalization into asset values via investor expectations and risk premia, rather than contemporaneous changes in operating cash flows. Second, predictive regressions show that fiscal health contains information about future returns over multiple quarters, consistent with gradual information diffusion and/or persistent shifts in local risk premia. Third, decomposing the composite fiscal measure reveals that balance-sheet strength and fiscal flexibility are the dimensions most consistently priced by investors. Finally, the magnitude of these effects varies across property types and is amplified in the post-COVID period, suggesting sensitivity to both property-level characteristics and broader market conditions.

To address endogeneity concerns, we employ a stacked difference-in-differences design exploiting staggered state adoption of fiscal monitoring policies. The event-based evidence indicates enhanced fiscal oversight coincides with discrete increases in commercial real estate returns, even after controlling for pre-existing economic trends. This finding is most consistent with governance improvements reducing local risk premia, though we cannot rule out that monitoring policies also directly improve fiscal outcomes.

Overall, the evidence indicates municipal financial health is not merely background context but a priced local risk factor in commercial real estate markets. While we cannot definitively prove which theoretical mechanisms dominate, the collective evidence—particularly the concentration of effects in appreciation returns and the response to fiscal monitoring policies—suggests investors price expectations about future fiscal costs and governance quality. As municipalities face ongoing fiscal pressures in the post-pandemic era, understanding these linkages becomes increasingly important for both market participants and policymakers.

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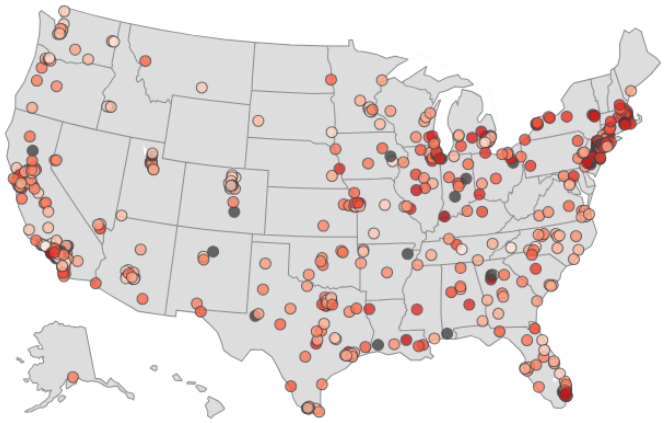
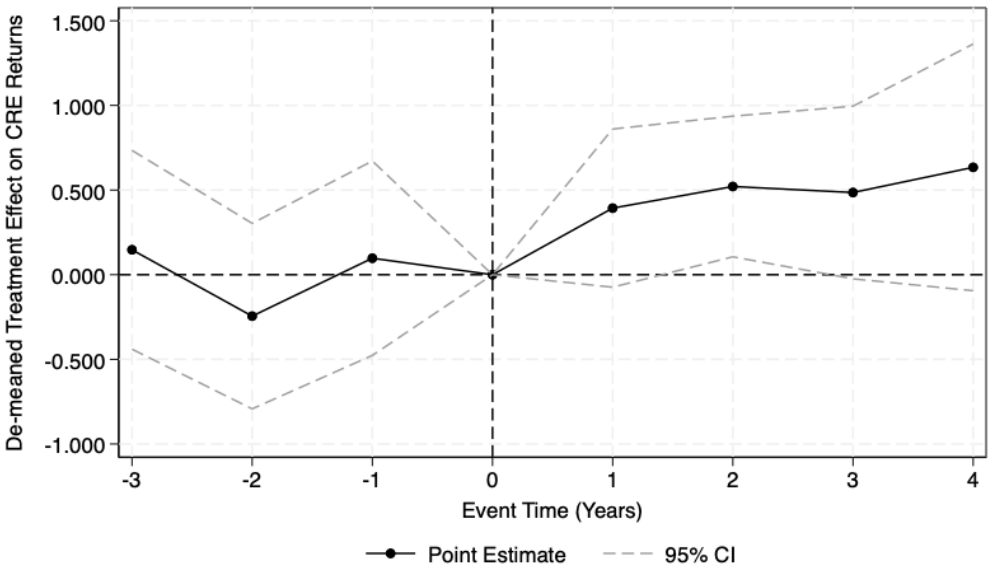
Figure 1: Municipal Fiscal Strength Scores



Notes: This figure shows the geographic distribution of municipal fiscal health scores across U.S. local governments with populations exceeding 65,000. Scores range from 0 (weakest) to 100 (strongest), with darker shading indicating lower fiscal health. Fiscal health is measured using standardized metrics from the Stanford Municipal Finance Dashboard including liquidity, reserves, debt burden, revenue growth, and pension obligations based on audited financial reports. The map reveals considerable variation, with smaller municipalities generally exhibiting stronger fiscal positions than larger cities. Data averaged over 2016-2023. Source: Giesecke and Duffy (2023).

Figure 2: Event Study: Effect of Fiscal Monitoring Policy Adoption on CRE Returns



Notes: This figure plots coefficients from a stacked difference-in-differences event study regression. The sample includes CBSAs that adopted fiscal monitoring policies between 2001 and 2017, with never-treated CBSAs as controls. The dependent variable is quarterly total CRE returns from NCREIF. Event time $t = 0$ corresponds to the quarter of fiscal monitoring policy adoption. The omitted reference period is $t = -1$. Point estimates are shown with 95% confidence intervals based on standard errors clustered at the event level. Pre-treatment coefficients are not statistically different from zero, supporting the parallel trends assumption. Post-treatment effects show a persistent increase in returns following policy adoption, consistent with governance improvements reducing local risk premia.

Table 1:
Summary Statistics

This table reports the mean, standard deviation, 25^{th} percentile, median, and 75^{th} percentile for the primary variables used in the analysis. The unit of observation is the CBSA-quarter. The sample spans [insert years, e.g., 2016–2023] and includes [insert number] CBSA-quarter observations. The dependent variables include total commercial real estate return, appreciation return, and income return, constructed from the NCREIF Property Index and aggregated to the CBSA level. Municipal fiscal health is measured using the Stanford Municipal Finance Dashboard Final Score and its component Key Performance Indicators (KPIs), including reserve strength, debt burden, liquidity, revenue growth, pension obligations, pension funding, pension costs, OPEB obligations, OPEB funding, and net worth. Higher values indicate stronger fiscal health. Local economic controls include FHFA house price growth, employment growth, log population, log household income, and the share of the population with a bachelor's degree. Financial conditions are captured by municipal bond yield spreads. Additional local characteristics include the CDC Social Vulnerability Index and log property damage per capita as a measure of disaster exposure. Variable definitions are provided in the Appendix.

	Count	Mean	S.D.	P25	P50	P75
Commercial Real Estate Outcomes						
Total Return	1,982	1.573	2.708	0.127	1.494	2.627
Income Return	1,982	1.232	0.197	1.104	1.224	1.346
Appreciation Return	1,982	0.342	2.697	-1.084	0.229	1.360
Turnover	1,982	1.490	3.321	0.000	0.000	1.506
Municipal Fiscal Health Scores						
Final Score	1,982	61.830	10.124	54.845	63.171	69.386
Reserve KPI	1,982	0.333	0.159	0.216	0.304	0.415
Debt Burden KPI	1,982	0.725	0.406	0.440	0.620	0.898
Liquidity KPI	1,982	4.786	3.184	2.564	4.281	6.011
Revenue Growth KPI	1,814	0.047	0.027	0.030	0.045	0.062
Pension Obligation KPI	1,969	0.331	0.240	0.150	0.305	0.478
Pension Funding KPI	1,161	0.755	0.142	0.674	0.759	0.851
Pension Cost KPI	1,974	0.037	0.017	0.025	0.034	0.050
OPEB Obligation KPI	1,617	0.778	10.848	0.062	0.141	0.290
OPEB Funding KPI	1,617	0.151	0.229	0.000	0.027	0.233
Net Worth KPI	1,974	-0.167	0.414	-0.420	-0.084	0.119
Economic Controls						
FHFA Price Change %	1,982	2.038	2.019	0.868	1.641	2.835
Muni Bond Spread %	1,982	-0.251	0.573	-0.470	-0.182	0.095
City Controls						
Employment Growth %	1,982	0.347	0.841	0.000	0.000	0.000
Log(Population)	1,982	13.182	0.809	12.668	13.079	13.665
Log(Household Income)	1,982	11.172	0.201	11.027	11.157	11.302
Bachelor's Degree %	1,982	21.236	3.818	18.589	21.417	23.578
Social Vulnerability	1,982	7.528	1.259	6.639	7.375	8.299
Log(Property Damage per Capita)	1,982	1.058	1.468	0.092	0.413	1.488
Robbery / Population %	1,982	0.014	0.016	0.000	0.009	0.020
Larceny Theft / Population %	1,982	0.286	0.340	0.000	0.191	0.424
Aggravated Assault / Population %	1,982	0.052	0.064	0.000	0.031	0.070
Total Amenity Value	1,673	0.014	0.087	-0.050	0.000	0.050
Supply Restrictions Index	1,673	0.097	0.226	0.000	0.000	0.116

Table 2:
Correlation Matrix

This table reports pairwise Pearson correlations among the primary variables used in the analysis. The unit of observation is the CBSA-quarter from 2016 through 2023. P-values are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return	Log(Final Score)	FHFA Price Change %	Empl Growth %	Log(Pop)	Log(HH Income)	Bachelor's Degree %	Muni Bond Spread %	Soc Vuln	Log(Prop Damage)
Total Return	1.000									
Log(Final Score)	-0.040**	1.000								
	(0.05)									
FHFA Price Change %	0.520***	-0.000	1.000							
	(0.00)	(0.96)								
Employment Growth %	0.010	0.050**	-0.050**	1.000						
	(0.56)	(0.03)	(0.03)							
Log(Population)	-0.000	0.080***	-0.020	0.010	1.000					
	(0.83)	(0.00)	(0.39)	(0.68)						
Log(Household Income)	-0.150***	0.120***	-0.090***	-0.020	0.170***	1.000				
	(0.00)	(0.00)	(0.00)	(0.37)	(0.00)					
Bachelor's Degree %	-0.150***	0.090***	-0.050**	-0.020	-0.000	0.680***	1.000			
	(0.00)	(0.00)	(0.02)	(0.41)	(0.85)	(0.00)				
Muni Bond Spread %	0.220***	-0.250***	0.100***	-0.040	0.080***	-0.100***	-0.060***	1.000		
	(0.00)	(0.00)	(0.00)	(0.10)	(0.00)	(0.00)	(0.01)			
Social Vulnerability	0.100***	0.100***	0.150***	0.010	0.390***	-0.260***	-0.520***	-0.080***	1.000	
	(0.00)	(0.00)	(0.00)	(0.65)	(0.00)	(0.00)	(0.00)	(0.00)		
Log(Property Damage per Capita)	0.020	0.080***	-0.000	0.020	0.020	-0.150***	-0.050**	-0.100***	-0.000	1.000
	(0.32)	(0.00)	(0.98)	(0.27)	(0.27)	(0.00)	(0.03)	(0.00)	(0.97)	

Table 3:
Commercial Real Estate Returns

This table reports panel regressions of quarterly CBSA-level NCREIF total commercial real estate returns on lagged municipal fiscal health, measured by the log of the Stanford Municipal Finance Dashboard Final Score. The unit of observation is the CBSA-quarter. All specifications include CBSA and year-quarter fixed effects. Standard errors are clustered at the CBSA level. Column (1) presents the baseline specification including only municipal fiscal health and fixed effects. Column (2) adds local housing market conditions (FHFA house price growth), local economic fundamentals (employment growth, log population, log household income, and bachelor's degree share), municipal bond spreads, social vulnerability, and disaster exposure (log property damage per capita). Column (3) further adds crime controls, including robbery, larceny theft, and aggravated assault rates per capita. Columns (4)–(6) are estimated on the restricted sample for which amenity and land-use regulation data are available (1,673 observations). Column (4) replicates the baseline fiscal specification on this reduced sample. Column (5) adds the full set of economic, fiscal, and crime controls. Column (6) presents the full specification, additionally including total amenity value interacted with year and the supply restrictions index interacted with year. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return (1)	Total Return (2)	Total Return (3)	Total Return (4)	Total Return (5)	Total Return (6)
Log(Final Score)	2.365***	1.844***	1.685**	2.134***	2.576***	1.977***
	(3.35)	(2.62)	(2.40)	(2.88)	(3.43)	(2.64)
FHFA Price Change %		0.129***	0.127***	0.156***	0.160***	0.153***
		(3.06)	(3.04)	(3.46)	(3.56)	(3.39)
Employment Growth %		0.023	0.026	-0.016	-0.025	-0.013
		(0.28)	(0.31)	(-0.19)	(-0.29)	(-0.15)
Log(Population)		10.120***	9.780***	2.814	8.885***	3.246
		(3.89)	(3.77)	(0.77)	(2.96)	(0.88)
Log(Household Income)		-2.719*	-2.226	0.657	-0.883	0.764
		(-1.69)	(-1.33)	(0.34)	(-0.47)	(0.38)
Bachelor's Degree %		-0.064	-0.050	-0.017	-0.056	0.013
		(-0.61)	(-0.48)	(-0.15)	(-0.50)	(0.11)
Muni Bond Spread %		-0.938***	-0.994***	0.124	-0.045	0.111
		(-2.58)	(-2.74)	(0.31)	(-0.12)	(0.28)
Social Vulnerability		0.338	0.371	0.460*	0.255	0.483*
		(1.44)	(1.58)	(1.87)	(1.03)	(1.96)
Log(Property Damage per Capita)		0.022	0.022	0.018	0.026	0.016
		(0.80)	(0.80)	(0.60)	(0.89)	(0.56)
Robbery / Population %			-8.488			-2.329
			(-1.46)			(-0.34)
Larceny Theft / Population %			-0.587			-0.468
			(-1.53)			(-1.11)
Aggravated Assault / Population %			3.351			0.807
			(1.56)			(0.34)
Total Amenity Value # year				-1.081***		-1.016***
				(-4.36)		(-3.91)
Supply Restrictions Index # year					0.123	0.114
					(1.22)	(1.12)
Constant	-8.191***	-110.793***	-111.593***	-23.900	-141.783***	-55.126
	(-2.81)	(-3.38)	(-3.35)	(-0.53)	(-3.30)	(-1.00)
CBSA FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.645	0.652	0.654	0.657	0.653	0.658
# Obs	1,982	1,982	1,982	1,673	1,673	1,673

Table 4:
Stacked Difference-in-Differences Analysis

Note: This table presents results from a stacked difference-in-differences estimation examining the effect of treatment on total returns. Column (1) shows results without controls, while Column (2) includes lagged control variables. All regressions include MSA-event fixed effects and event-year-quarter fixed effects. Standard errors are clustered at the event level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return (1)	Total Return (2)
Treatment cohort # Post-treatment	0.525***	0.414***
	(0.132)	(0.145)
Controls(t-1) # Post	No	Yes
MSA # Event FE	Yes	Yes
Event # YrQtr FE	Yes	Yes
Clustering	Event	Event
R-squared	0.460	0.421
# Obs	12,223	8,606

Table 5:
Appreciation Returns vs. Income Returns

This table decomposes total returns into appreciation returns and income returns to examine which component drives the relationship with municipal financial health. The first two columns analyze appreciation returns, while the last two columns analyze income returns. Columns (1) and (3) include municipal fiscal health along with the full set of economic and city-level controls (housing market conditions, labor market fundamentals, income, human capital, municipal bond spreads, social vulnerability, and disaster exposure). Columns (2) and (4) extend these specifications by additionally including crime measures (robbery, larceny theft, and aggravated assault rates), total amenity value interacted with year, and the supply restrictions index interacted with year. All regressions include CBSA and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Appreciation Return (1)	Appreciation Return (2)	Income Return (3)	Income Return (4)
Log(Final Score)	1.716**	1.939***	0.138**	0.046
	(2.48)	(2.63)	(2.50)	(0.77)
FHFA Price Change %	0.125***	0.149***	0.004	0.003
	(3.01)	(3.35)	(1.35)	(1.19)
Employment Growth %	0.019	-0.021	0.002	0.006
	(0.23)	(-0.25)	(0.43)	(1.10)
Log(Population)	10.823***	3.377	-0.654***	-0.159
	(4.22)	(0.93)	(-3.34)	(-0.59)
Log(Household Income)	-2.768*	1.124	0.024	-0.374**
	(-1.73)	(0.57)	(0.19)	(-2.55)
Bachelor's Degree %	-0.055	0.015	-0.005	0.002
	(-0.54)	(0.13)	(-0.47)	(0.21)
Muni Bond Spread %	-0.983***	0.082	0.054**	0.044
	(-2.75)	(0.21)	(2.20)	(1.58)
Social Vulnerability	0.330	0.514**	0.008	-0.032*
	(1.44)	(2.13)	(0.44)	(-1.65)
Log(Property Damage per Capita)	0.026	0.018	-0.003	-0.002
	(0.92)	(0.60)	(-1.41)	(-0.68)
Robbery / Population %		-3.641		1.402**
		(-0.54)		(2.17)
Larceny Theft / Population %		-0.406		-0.067**
		(-0.98)		(-2.01)
Aggravated Assault / Population %		0.942		-0.148
		(0.40)		(-0.75)
Total Amenity Value # year		-1.101***		0.076***
		(-4.30)		(4.03)
Supply Restrictions Index # year		0.145		-0.035***
		(1.44)		(-5.60)
Constant	-120.343***	-65.787	9.059***	12.285***
	(-3.72)	(-1.21)	(3.44)	(3.28)
CBSA FE	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes
R-squared	0.656	0.662	0.668	0.689
# Obs	1,982	1,673	1,982	1,673

Table 6:
Predicting Future Returns

This table examines whether municipal financial health predicts future commercial real estate returns. Each column represents a different forecast horizon: current quarter, 1 quarter ahead, 2 quarters ahead, 3 quarters ahead, 4 quarters ahead, and 5 quarters ahead. All regressions include CBSA and year-quarter fixed effects. Column (1) is our baseline regression from Column (2) of Table 3 Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return Baseline	Total Return (1Q ahead)	Total Return (2Q ahead)	Total Return (3Q ahead)	Total Return (4Q ahead)	Total Return (5Q ahead)
Log(Final Score)	1.844***	1.415*	1.480*	2.165***	2.315***	1.872**
	(2.62)	(1.79)	(1.78)	(2.61)	(2.94)	(2.47)
FHFA Price Change %	0.129***	0.153***	0.113***	0.117***	0.100***	0.063
	(3.06)	(3.72)	(2.96)	(3.19)	(2.67)	(1.53)
Employment Growth %	0.023	-0.019	0.062	-0.090	-0.063	0.007
	(0.28)	(-0.26)	(0.83)	(-0.94)	(-0.75)	(0.09)
Log(Population)	10.120***	9.462***	8.855***	7.604***	6.781***	6.373**
	(3.89)	(3.75)	(3.36)	(3.00)	(2.76)	(2.54)
Log(Household Income)	-2.719*	-2.452	-2.844*	-3.657**	-5.879***	-7.359***
	(-1.69)	(-1.58)	(-1.79)	(-2.26)	(-3.72)	(-4.37)
Bachelor's Degree %	-0.064	-0.131	-0.106	-0.167	-0.197*	-0.108
	(-0.61)	(-1.28)	(-0.99)	(-1.56)	(-1.76)	(-0.89)
Muni Bond Spread %	-0.938***	-0.945***	-1.174***	-0.975***	-0.651*	-0.132
	(-2.58)	(-2.65)	(-3.17)	(-2.64)	(-1.80)	(-0.35)
Social Vulnerability	0.338	0.326	0.496**	0.545**	0.501**	0.496**
	(1.44)	(1.39)	(2.07)	(2.31)	(2.22)	(2.21)
Log(Property Damage per Capita)	0.022	0.028	-0.015	-0.013	-0.061**	-0.068***
	(0.80)	(1.03)	(-0.58)	(-0.50)	(-2.40)	(-2.64)
Constant	-110.8***	-101.9***	-91.523***	-67.745**	-31.647	-9.681
	(-3.38)	(-3.03)	(-2.63)	(-1.99)	(-0.97)	(-0.29)
CBSA FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.652	0.663	0.669	0.672	0.677	0.684
# Obs	1,982	1,948	1,914	1,880	1,846	1,769

Table 7:

Financial Health Metrics and Property Returns: Panel A - Total Returns

This table examines the relationship between disaggregated municipal financial health metrics and commercial real estate total returns. Each column represents a different financial health metric regressed on returns with full controls. All regressions include CBSA and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return	Total Return	Total Return	Total Return	Total Return	Total Return	Total Return	Total Return	Total Return	Total Return
Reserve KPI	1.096**									
	(1.98)									
Debt Burden KPI		-0.799**								
		(-2.09)								
Liquidity KPI			0.038*							
			(1.66)							
Revenue Growth KPI				2.832						
				(1.19)						
Pension Obligation KPI					0.734					
					(1.40)					
Pension Funding KPI						-2.929**				
						(-2.44)				
Pension Cost KPI							-9.673*			
							(-1.90)			
OPEB Obligation KPI								0.004***		
								(2.97)		
OPEB Funding KPI									-0.156	
									(-0.39)	
Net Worth KPI										0.722*
										(1.87)
FHFA Price Change %	0.128***	0.132***	0.130***	0.126***	0.131***	0.200***	0.135***	0.195***	0.195***	0.136***
	(3.03)	(3.12)	(3.09)	(2.91)	(3.11)	(3.45)	(3.22)	(4.29)	(4.29)	(3.21)
Employment Growth %	0.028	0.028	0.029	0.035	0.039	-0.048	0.019	0.056	0.054	0.011
	(0.34)	(0.33)	(0.35)	(0.42)	(0.46)	(-0.48)	(0.23)	(0.59)	(0.57)	(0.14)
Log(Population)	10.768***	10.457***	10.855***	12.463***	10.679***	12.226***	10.868***	11.240***	11.204***	10.194***
	(4.10)	(3.97)	(4.12)	(3.97)	(3.87)	(3.64)	(4.03)	(3.85)	(3.84)	(3.86)
Log(Household Income)	-2.720*	-3.112*	-2.909*	-3.050*	-2.710*	-2.516	-2.475	-3.170	-3.238*	-2.842*
	(-1.70)	(-1.90)	(-1.81)	(-1.78)	(-1.68)	(-1.08)	(-1.52)	(-1.63)	(-1.66)	(-1.77)
Bachelor's Degree %	-0.073	-0.048	-0.061	-0.069	-0.077	-0.018	-0.052	0.029	0.030	-0.051
	(-0.70)	(-0.45)	(-0.59)	(-0.61)	(-0.73)	(-0.12)	(-0.49)	(0.25)	(0.26)	(-0.49)
Muni Bond Spread %	-0.991***	-0.956***	-1.032***	-1.179***	-0.991***	-2.046***	-0.967***	-1.502***	-1.465***	-1.003***
	(-2.75)	(-2.65)	(-2.87)	(-3.20)	(-2.73)	(-4.11)	(-2.66)	(-3.60)	(-3.55)	(-2.76)
Social Vulnerability	0.353	0.357	0.316	0.453*	0.408*	0.359	0.278	0.440*	0.468*	0.353
	(1.51)	(1.52)	(1.33)	(1.71)	(1.69)	(1.18)	(1.20)	(1.74)	(1.84)	(1.52)
Log(Property Damage per Capita)	0.028	0.021	0.028	0.039	0.027	0.047	0.026	0.058**	0.057*	0.027
	(0.98)	(0.76)	(0.98)	(1.38)	(0.98)	(1.20)	(0.92)	(1.96)	(1.91)	(0.99)
Constant	-112.0***	-103.1***	-110.8***	-131.3***	-111.2***	-133.7***	-115.2***	-116.6***	-115.5***	-103.1***
	(-3.40)	(-3.05)	(-3.32)	(-3.30)	(-3.21)	(-3.08)	(-3.41)	(-3.16)	(-3.13)	(-3.12)
Controls	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
CBSA FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.652	0.652	0.652	0.666	0.652	0.678	0.654	0.675	0.675	0.653
# Obs	1,982	1,982	1,982	1,814	1,969	1,161	1,974	1,617	1,617	1,974

Table 7:

Financial Health Metrics and Property Returns: Panel B - Appreciation Returns

This table examines the relationship between disaggregated municipal financial health metrics and commercial real estate appreciation returns. Each column represents a different financial health metric regressed on returns with full controls. All regressions include CBSA and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret	Appr Ret
Reserve KPI	1.063*									
	(1.94)									
Debt Burden KPI		-0.660*								
		(-1.75)								
Liquidity KPI			0.039*							
			(1.73)							
Revenue Growth KPI				2.877						
				(1.22)						
Pension Obligation KPI					0.643					
					(1.24)					
Pension Funding KPI						-2.724**				
						(-2.33)				
Pension Cost KPI							-9.433*			
							(-1.88)			
OPEB Obligation KPI								0.004***		
								(3.17)		
OPEB Funding KPI									-0.100	
									(-0.25)	
Net Worth KPI										0.543
										(1.43)
FHFA Price Change %	0.124***	0.128***	0.126***	0.122***	0.127***	0.194***	0.131***	0.195***	0.196***	0.132***
	(2.98)	(3.07)	(3.04)	(2.86)	(3.05)	(3.37)	(3.16)	(4.34)	(4.35)	(3.16)
Employment Growth %	0.023	0.023	0.024	0.030	0.034	-0.051	0.014	0.052	0.051	0.007
	(0.28)	(0.28)	(0.29)	(0.36)	(0.40)	(-0.51)	(0.18)	(0.57)	(0.55)	(0.09)
Log(Population)	11.416***	11.196***	11.490***	13.292***	11.329***	12.816***	11.545***	12.002***	11.968***	11.052***
	(4.41)	(4.31)	(4.43)	(4.30)	(4.18)	(3.89)	(4.35)	(4.20)	(4.19)	(4.25)
Log(Household Income)	-2.771*	-3.089*	-2.969*	-2.955*	-2.749*	-2.350	-2.542	-3.426*	-3.481*	-2.854*
	(-1.74)	(-1.90)	(-1.86)	(-1.74)	(-1.72)	(-1.02)	(-1.58)	(-1.78)	(-1.80)	(-1.80)
Bachelor's Degree %	-0.064	-0.041	-0.053	-0.063	-0.068	-0.017	-0.043	0.050	0.052	-0.045
	(-0.62)	(-0.40)	(-0.52)	(-0.57)	(-0.66)	(-0.12)	(-0.42)	(0.45)	(0.46)	(-0.44)
Muni Bond Spread %	-1.031***	-1.005***	-1.072***	-1.206***	-1.036***	-2.058***	-1.007***	-1.550***	-1.513***	-1.045***
	(-2.90)	(-2.83)	(-3.03)	(-3.32)	(-2.90)	(-4.20)	(-2.81)	(-3.77)	(-3.72)	(-2.92)
Social Vulnerability	0.345	0.345	0.307	0.453*	0.396*	0.362	0.268	0.428*	0.455*	0.340
	(1.50)	(1.50)	(1.32)	(1.74)	(1.67)	(1.22)	(1.18)	(1.73)	(1.83)	(1.50)
Log(Property Damage per Capita)	0.030	0.025	0.030	0.041	0.030	0.051	0.029	0.063**	0.061**	0.030
	(1.09)	(0.90)	(1.10)	(1.46)	(1.09)	(1.32)	(1.04)	(2.13)	(2.09)	(1.10)
Constant	-121.3***	-114.5***	-119.9***	-144.6***	-120.6***	-144.8***	-124.8***	-125.4***	-124.5***	-115.6***
	(-3.74)	(-3.44)	(-3.65)	(-3.69)	(-3.55)	(-3.43)	(-3.75)	(-3.47)	(-3.45)	(-3.55)
Controls	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
CBSA FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.655	0.655	0.655	0.669	0.655	0.683	0.657	0.680	0.680	0.656
# Obs	1,982	1,982	1,982	1,814	1,969	1,161	1,974	1,617	1,617	1,974

Table 7:
Financial Health Metrics and Property Returns: Panel C - Income Returns

This table examines the relationship between disaggregated municipal financial health metrics and commercial real estate income returns. Each column represents a different financial health metric regressed on returns with full controls. All regressions include CBSA and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret	Income Ret
Reserve KPI	0.047									
	(1.24)									
Debt Burden KPI		-0.124***								
		(-3.89)								
Liquidity KPI			-0.001							
			(-0.79)							
Revenue Growth KPI				0.016						
				(0.11)						
Pension Obligation KPI					0.096***					
					(2.74)					
Pension Funding KPI						-0.189**				
						(-2.28)				
Pension Cost KPI							-0.384			
							(-1.11)			
OPEB Obligation KPI								-0.000		
								(-1.09)		
OPEB Funding KPI									-0.069*	
									(-1.83)	
Net Worth KPI										0.171***
										(5.58)
FHFA Price Change %	0.004	0.004	0.004	0.004	0.004	0.007*	0.004	-0.000	-0.001	0.004
	(1.35)	(1.47)	(1.41)	(1.47)	(1.48)	(1.85)	(1.44)	(-0.05)	(-0.22)	(1.34)
Employment Growth %	0.003	0.003	0.003	0.002	0.003	0.001	0.002	0.003	0.002	0.002
	(0.49)	(0.48)	(0.50)	(0.44)	(0.59)	(0.20)	(0.44)	(0.41)	(0.40)	(0.33)
Log(Population)	-0.597***	-0.674***	-0.579***	-0.727***	-0.593***	-0.551**	-0.636***	-0.693***	-0.696***	-0.795***
	(-3.01)	(-3.41)	(-2.92)	(-3.28)	(-2.87)	(-2.17)	(-3.07)	(-2.93)	(-2.94)	(-4.03)
Log(Household Income)	0.025	-0.041	0.035	-0.102	0.014	-0.215	0.047	0.215	0.200	-0.014
	(0.20)	(-0.34)	(0.29)	(-0.78)	(0.11)	(-1.39)	(0.38)	(1.54)	(1.41)	(-0.11)
Bachelor's Degree %	-0.005	-0.002	-0.004	-0.001	-0.005	0.002	-0.004	-0.017	-0.018	-0.002
	(-0.50)	(-0.25)	(-0.43)	(-0.08)	(-0.55)	(0.13)	(-0.44)	(-1.56)	(-1.57)	(-0.23)
Muni Bond Spread %	0.050**	0.058**	0.049**	0.039	0.054**	0.015	0.050**	0.049	0.048	0.052**
	(2.03)	(2.33)	(2.01)	(1.59)	(2.22)	(0.46)	(2.02)	(1.63)	(1.64)	(2.08)
Social Vulnerability	0.009	0.011	0.009	0.002	0.012	-0.010	0.009	0.013	0.015	0.012
	(0.47)	(0.60)	(0.48)	(0.11)	(0.62)	(-0.41)	(0.47)	(0.62)	(0.71)	(0.67)
Log(Property Damage per Capita)	-0.003	-0.004	-0.003	-0.001	-0.003	-0.004*	-0.003	-0.004*	-0.004*	-0.003
	(-1.24)	(-1.64)	(-1.27)	(-0.53)	(-1.23)	(-1.66)	(-1.42)	(-1.76)	(-1.82)	(-1.23)
Constant	8.851***	10.644***	8.513***	11.944***	8.892***	11.129***	9.136***	8.292***	8.502***	11.855***
	(3.34)	(3.92)	(3.21)	(4.03)	(3.19)	(3.16)	(3.32)	(2.60)	(2.68)	(4.47)
Controls	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
CBSA FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.667	0.670	0.666	0.669	0.666	0.704	0.667	0.687	0.688	0.671
# Obs	1,982	1,982	1,982	1,814	1,969	1,161	1,974	1,617	1,617	1,974

Table 8:
Property Type Analysis: Panel A - Total Returns

This table examines whether the relationship between municipal financial health and total returns varies by property type. Each column represents a different property type: Apartment, Industrial, Office, Retail, and Self-Storage. All regressions include full controls, MSA fixed effects, and year-quarter fixed effects. Standard errors are clustered at the CBSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return Office	Total Return Industrial	Total Return Residential	Total Return Retail	Total Return Self-Storage
Log(Final Score)	2.527*	-0.640	-0.527	-0.883	3.979*
	(1.85)	(-0.69)	(-0.59)	(-1.11)	(1.84)
FHFA Price Change %	0.139*	0.113*	0.335***	0.110**	0.117
	(1.95)	(1.86)	(5.30)	(2.56)	(1.05)
Employment Growth %	-0.130	-0.191**	0.303***	-0.073	-0.132
	(-1.25)	(-1.97)	(3.14)	(-0.68)	(-0.79)
Log(Population)	10.779***	9.651***	3.988	7.970***	17.037**
	(3.24)	(2.68)	(1.36)	(2.67)	(2.14)
Log(Household Income)	-8.702***	-6.439***	-7.461***	-1.368	12.320*
	(-3.19)	(-2.71)	(-3.84)	(-0.58)	(1.82)
Bachelor's Degree %	-0.145	-0.240	0.017	-0.158	0.476
	(-0.79)	(-1.62)	(0.12)	(-0.90)	(1.42)
Muni Bond Spread %	-2.280***	-0.751	0.970**	-0.044	0.518
	(-4.06)	(-1.44)	(2.18)	(-0.09)	(0.65)
Social Vulnerability	-0.886**	0.240	1.235***	-0.036	3.023***
	(-2.29)	(0.83)	(4.57)	(-0.14)	(3.07)
Log(Property Damage per Capita)	0.083	-0.019	0.020	0.039	-0.079
	(1.63)	(-0.45)	(0.60)	(1.21)	(-0.93)
Constant	-48.815	-48.644	23.623	-84.550**	-422.8***
	(-0.87)	(-0.98)	(0.51)	(-2.16)	(-2.81)
CBSA FE	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.678	0.812	0.824	0.494	0.753
# Obs	809.0	1,103	915.0	955.0	462.0

Table 8:
Property Type Analysis: Panel B - Appreciation Returns

This table examines whether the relationship between municipal financial health and appreciation returns varies by property type. Each column represents a different property type: Apartment, Industrial, Office, Retail, and Self-Storage. All regressions include full controls, CBSA fixed effects, and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Appreciation Return Office	Appreciation Return Industrial	Appreciation Return Residential	Appreciation Return Retail	Appreciation Return Self-Storage
Log(Final Score)	2.562*	-0.733	-0.429	-0.739	3.895*
	(1.90)	(-0.80)	(-0.48)	(-0.93)	(1.83)
FHFA Price Change %	0.143**	0.110*	0.329***	0.119***	0.112
	(2.01)	(1.81)	(5.30)	(2.81)	(1.02)
Employment Growth %	-0.151	-0.204**	0.291***	-0.070	-0.133
	(-1.46)	(-2.12)	(3.06)	(-0.67)	(-0.80)
Log(Population)	12.453***	10.718***	5.438*	8.040***	15.922**
	(3.75)	(3.02)	(1.88)	(2.72)	(2.05)
Log(Household Income)	-8.456***	-6.800***	-7.034***	-0.869	12.842*
	(-3.06)	(-2.87)	(-3.68)	(-0.37)	(1.96)
Bachelor's Degree %	-0.158	-0.254*	0.032	-0.200	0.479
	(-0.87)	(-1.73)	(0.22)	(-1.15)	(1.46)
Muni Bond Spread %	-2.430***	-0.796	0.891**	-0.076	0.502
	(-4.38)	(-1.53)	(2.04)	(-0.16)	(0.64)
Social Vulnerability	-0.875**	0.292	1.186***	-0.022	2.925***
	(-2.26)	(1.02)	(4.46)	(-0.09)	(3.10)
Log(Property Damage per Capita)	0.080	-0.014	0.017	0.042	-0.071
	(1.59)	(-0.33)	(0.51)	(1.34)	(-0.85)
Constant	-75.489	-59.760	-2.283	-92.167**	-413.4***
	(-1.34)	(-1.22)	(-0.05)	(-2.37)	(-2.83)
CBSA FE	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.680	0.812	0.825	0.478	0.751
# Obs	809.0	1,103	915.0	955.0	462.0

Table 8:
Property Type Analysis: Panel C - Income Returns

This table examines whether the relationship between municipal financial health and income returns varies by property type. Each column represents a different property type: Apartment, Industrial, Office, Retail, and Self-Storage. All regressions include full controls, CBSA fixed effects, and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Income Return Office	Income Return Industrial	Income Return Residential	Income Return Retail	Income Return Self-Storage
Log(Final Score)	-0.059	0.098*	-0.104**	-0.156	0.078
	(-0.47)	(1.69)	(-2.10)	(-1.52)	(0.89)
FHFA Price Change %	-0.004	0.004	0.005	-0.009**	0.005
	(-0.85)	(1.09)	(1.59)	(-2.35)	(1.31)
Employment Growth %	0.021*	0.011	0.011*	0.000	-0.002
	(1.77)	(1.59)	(1.82)	(0.06)	(-0.25)
Log(Population)	-1.652***	-0.980***	-1.387***	-0.297	0.823**
	(-4.65)	(-4.30)	(-8.48)	(-1.12)	(2.35)
Log(Household Income)	-0.256	0.309**	-0.370***	-0.420**	-0.588
	(-0.91)	(2.42)	(-3.05)	(-2.39)	(-1.49)
Bachelor's Degree %	0.012	0.012	-0.015*	0.038***	0.009
	(0.64)	(1.32)	(-1.70)	(3.36)	(0.47)
Muni Bond Spread %	0.163***	0.049*	0.067***	0.051	-0.001
	(3.05)	(1.89)	(2.68)	(1.44)	(-0.04)
Social Vulnerability	-0.010	-0.061***	0.049***	-0.010	0.031
	(-0.24)	(-3.13)	(3.13)	(-0.42)	(0.76)
Log(Property Damage per Capita)	0.002	-0.005**	0.002	-0.004	-0.008*
	(0.57)	(-2.16)	(1.27)	(-1.31)	(-1.91)
Constant	26.624***	10.633***	24.440***	9.898***	-4.336
	(4.18)	(3.28)	(9.47)	(2.65)	(-0.55)
CBSA FE	Yes	Yes	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.640	0.828	0.738	0.745	0.700
# Obs	809.0	1,103	915.0	955.0	462.0

Table 9:
Subsample Analysis

This table presents subsample analyses examining heterogeneous effects. Column (1) tests whether the effect differs in gateway cities, Column (2) examines the post-COVID period, and Column (3) analyzes differences based on political party control (Republican winner). Interaction terms test whether the relationship between municipal financial health and returns differs across these subsamples. All regressions include full controls, CBSA and year-quarter fixed effects. Standard errors are clustered at the MSA level, with t-statistics in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Total Return		
	Gateway	Post COVID	Rep Win
	(1)	(2)	(3)
Log(Final Score)	2.052***	2.291***	1.836***
	(2.70)	(3.00)	(2.60)
log(Final Score) x Gateway	-1.917		
	(-1.53)		
log(Final Score) x Post COVID		-0.842	
		(-1.60)	
log(Final Score) x Rep Winner			-0.039
			(-0.51)
FHFA Price Change %	0.132***	0.129***	0.129***
	(3.10)	(3.06)	(3.06)
Employment Growth %	0.026	0.018	0.024
	(0.32)	(0.22)	(0.29)
Log(Population)	9.705***	10.651***	10.299***
	(3.65)	(4.06)	(4.05)
Log(Household Income)	-2.759*	-2.238	-2.711*
	(-1.71)	(-1.37)	(-1.68)
Bachelor's Degree %	-0.066	-0.061	-0.059
	(-0.63)	(-0.58)	(-0.56)
Muni Bond Spread %	-0.914**	-0.969***	-0.960***
	(-2.50)	(-2.67)	(-2.61)
Social Vulnerability	0.350	0.316	0.354
	(1.49)	(1.34)	(1.48)
Log(Property Damage per Capita)	0.022	0.018	0.022
	(0.80)	(0.63)	(0.79)
Constant	-105.046***	-122.588***	-113.376***
	(-3.14)	(-3.66)	(-3.53)
CBSA FE	Yes	Yes	Yes
Year-Qtr FE	Yes	Yes	Yes
R-squared	0.653	0.653	0.652
# Obs	1,982	1,982	1,982

Appendix: Variable Definitions

Variable	Category	Source	Definition
Total Return	Dependent variable	NCREIF	NCREIF total return (%), unleveraged, value-weighted (NPI).
Appreciation Return	Dependent variable	NCREIF	NCREIF appreciation return component (%).
Income Return	Dependent variable	NCREIF	NCREIF income return component (%).
Final Score	Municipal fiscal health	Giesecke & Duffy (2023)	Municipal fiscal health composite score.
Debt Burden KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Debt burden indicator (lower is better).
Liquidity KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Liquidity position indicator.
Net Worth KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Unrestricted net assets indicator.
OPEB Funding KPI	Municipal fiscal health	Giesecke & Duffy (2023)	OPEB funding status indicator (higher is better).
OPEB Obligation KPI	Municipal fiscal health	Giesecke & Duffy (2023)	OPEB obligations indicator (lower is better).
Pension Cost KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Pension annual required contribution (ADC) indicator.
Pension Funding KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Pension funding status indicator (higher is better).
Pension Obligation KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Pension obligations indicator (lower is better).
Reserve KPI	Municipal fiscal health	Giesecke & Duffy (2023)	General fund reserves indicator (higher is better).
Revenue Growth KPI	Municipal fiscal health	Giesecke & Duffy (2023)	Revenue growth indicator.
Bachelor's Degree %	Controls	US Census	Share of population with bachelor's degree (%).
Employment Growth %	Controls	US Census	Employment growth rate (%).
Household Income	Controls	US Census	Median household income.
Population	Controls	US Census	Total population.

Variable	Category	Source	Definition
Aggravated Assault / Population %	Controls	FBI UCR	Aggravated assault per population (%).
Larceny Theft / Population %	Controls	FBI UCR	Larceny-theft per population (%).
Robbery / Population %	Controls	FBI UCR	Robbery per population (%).
Muni Bond Spread %	Controls	(Sean pls add)	Average municipal bond spread (%).
FHFA Price Change %	Controls	FHFA	FHFA house price change (%).
Social Vulnerability	Controls	CDC	Social Vulnerability Index (SVI) theme score.
Property Damage per Capita	Controls	SHELDUS	Per-capita property damage (SHELDUS).
Supply Restrictions Index # year	Controls	Wharton Land Regulation	Supply Restriction Index (2018) interacted with year.
Total Amenity Value # year	Controls	Albouy (2016)	Total amenity value interacted with year.
Gateway	Subsample		Gateway market indicator. Six gateway markets are defined as Boston, Chicago, Los Angeles, New York, San Francisco, and Washington, D.C.
Post COVID	Subsample		Post-COVID (2020q1) indicator.
Rep Win	Subsample	MIT Election Lab	Republican presidential winner indicator (2016/2020). Derived from state-level rep_win and mapped to CBSA; post-2020 uses rep_win2020, pre-2021 uses rep_win2016.