Evidence of mixed use economic development synergies

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ABSTRACT

The first decade of the 21st century has been characterized by an overall decline in both financial markets and real estate markets. These related declines have been attributed to inefficient land utilization, speculation, and questionable lending practices. This study focuses on the role of land utilization and examines whether or not the recent increase in mixed use development activity is due to synergies associated with such development. By applying the Fama-Macbeth procedure to estimate rolling alphas rather than rolling betas we find positive and significant alphas for a zero-investment portfolio long on mixed use development firms and short on focused development firms. These positive alphas and related results suggest that there are synergies associated with mixed use development. Therefore, future development projects should consider the mixed-use alternative.

Keywords: mixed use, real estate, urban sprawl, development, valuation

INTRODUCTION

In recent years the real estate markets have become an important issue in the United States given the strong relation to economic growth and financial markets. Real estate markets impact economic growth via numerous industries related to real estate development and consumption derived from home equity. The proliferation of mortgage backed securities has solidified the connection of real estate markets to financial markets. The strong sensitivity to housing prices contributes to the fragility of the entire economy especially in times of declining home prices. Over the 2000 to 2008 period the Federal Housing Finance Agency (FHFA) housing price index[1] declined 23%. During that same period, the market capitalization of real estate industry[2] declined 35%. These downward trends can be attributed to inefficient to improper land utilization, speculation, and questionable lending practices. There has been great debate over the economic value and proper use of property. Also, there has been considerable discussion about the impact development firms have on the real estate industry (Galster et al. 2004; Ellen et al. 2002). Property valuation is difficult since real estate developers, appraisers, agents, and industry experts have different intrinsic value estimates. By examining the market value of real estate firms, we obtain insight into the value and proper use of property. This is the first study that utilizes market returns of mixed use and focused real estate firms to provide in- sight into the efficiency of land utilization. Specifically, we show that mixed use firms have superior risk adjusted returns compared to their focused firm counterparts and assert this is a result of synergies associated with mixed use developments. The recent real estate industry decline within the United States has resulted in in- tense discussion around the proper use of real estate. For academics, the recent attention paid to the real estate industry raises many questions. What is the most efficient or profitable use of property in various regions of the country? For retail and commercial property investments, is diversification in property utilization more effective than the traditional single focused facilities? Does firm property portfolio diversification play a major role in explaining its stock price behavior? Specifically, how do residential components in mixed use projects (apartments, condos, townhouses) above, next to or near the stores affect retail sales? Thus, the central research issue is whether the market investors value one type of development firm over another. Accounting for the location, development type, socio-demographic factors and various firm and industry specific characteristics this study addresses these questions and examines real estate investment performance among real estate development firms.

Developers are typically small and hold portfolios that are concentrated in a particular local market where they have great expertise. However, larger mainstream developers are gaining new expertise in both conventional suburban development (CSD) and mixed use economic developments (MUED). Projects that which adopt some principles of MUED but

[1] The FHFA monthly index (formerly called the OFHEO monthly house price index), is calculated using purchase prices of houses backing mortgages that have been sold to or guaranteed by Fannie Mae or Freddie Mac.

[2] The U.S. real estate capitalization market statistics provided by the National Association of Real Estate Investment Trusts (NAREIT). NAREIT is an organization focuses of REIT and publicly traded real estate companies with an interest in U.S. real estate and capital markets.

have a largely conventional urban sprawl component are allowing these developers to branch out into different real estate industry segments. This has resulted in a consolidation within the real estate development industry due to increased competition to provide diverse development services. During this time, developers had the option of becoming experts in focused development or diversifying their services into mixed used development.
Looking at Fig. 1 (a), the number of focused firms in our sample has decreased over time from 32 in 1984 to eight in 2008. In contrast, the number of mixed use firms in our sample has increased over time from 34 in 1984 to 52 in 2008. In Fig. 1 (b) we note the percentage of mixed use economic developers has increased from 51% in 1984 to 87% in 2008. Developers have recognized the need for mixed use construction capability. The relative increase in mixed use economic developers suggests that the market driven demand for these products and services has changed over the past two decades. This increase also implies an increase in demand for mixed use economic developments will lead to an increase in value of these properties.

We assert the increase in MUED and the associated market demand for mixed use real estate are indicative of MUED synergies. From the real estate firm perspective, to move towards MUED from CSD is reflective of firm expectations and realizations of increased profits. From the consumer perspective, the willingness to pay higher lease and mortgage rates is a result of the belief and realization that the MUED benefit-to- cost ratio is greater than that of CSD.

We begin with a historical perspective of real estate development in the United States and briefly review the literature related to land use in Section II. In Section III we describe the data and methodology used in our analysis including the sample description and summary statistics of real estate developers over a ten year period. We provide results of our regression analysis in Section IV and conclude with Section V.

BACKGROUND

There are two general types of development firms, mixed use and single focused. Mixed use development is a live-work-play package of different real estate asset types. In mixed use developments residents and visitors walk from home to office to shop. Mixed use development is often referred to as mixed economic development due its ability to generate multiple sources of revenues for owners. In contrast, focused development segregates residential, office, and retail real estate.

HISTORICAL PERSPECTIVE

The United States was initially developed in the form of compact mixed use neighborhoods. Settlers lived amongst their places of employment and bartered for goods and services with the neighboring families and store owners. For centuries citizens established convenient communities in which they could rear families, work, and purchase other products. This way of living began to change with the emergence of modern architecture and the popularity of the automobile. In addition, an increase in population following World War II inspired a new system of real estate development. Implemented nationwide, conventional suburban development or sprawl re- placed traditional urban neighborhoods with a rigorous separation of real estate uses (Steuteville 2000).

Mixed use urban economic development

Mixed use urban economic development is characterized by a variety of dwelling types including homes, town homes, condominiums, and apartments in which older and younger, singles and families can live. There are offices and shops integrated or within a five minute walk in these communities. The close proximity of offices and shops allow residents to conveniently walk to work and purchase household items. Mixed use urban development is close enough to schools so that most children can walk from their home. The mixed use urban developments are also said to be of human scale with efficient use of living space, conveniently accessible amenities, and pedestrian safe with relatively narrow streets. Since mixed use urban development is the United States' oldest form of community there is an established infrastructure and public services that utilize economy of scale principles (Burchell and Mukherji 2003).

Conventional suburban development (CSD) or sprawl

Carruthers and Ulfarsson (2002) define sprawl as low density, discontinuous, suburban style development often characterized as the result of rapid, unplanned, or uncoordinated growth. Sprawl has been equated to the natural expansion of metropolitan areas as population grows (Sinclair 1967; Lowry 1988) and to "haphazard" or un- planned growth (Weiss 1989). Thus far urban sprawl is the result of interconnected policies and lifestyle choices. Sprawl occurs as developers seek out locations that remain comparatively free from land use controls. Such areas are often on the outskirts of urban areas. Sprawl development typically consists of noncontiguous subdivision style residential development and strip nonresidential development. Residential development is typically in the form of 1600 to 3500 square foot single family houses located on 0.33 to one acre lots. Nonresidential strip developments can have similar square foot dimensions per unit and adjacent units with floor-to-area ratios of 0.2 or less (i.e. townhouse, row house). Thus homeowners have access to less expensive, single family homes on large lots distant from urban centers. In addition public service costs are higher in such areas as a result of the increased need for extended public services. Although Gordon and Richardson (1997) defend urban sprawl as a fulfillment of consumer preferences there are distinct disadvantages and differences when compared to mixed use economic development.

Lacking pedestrian scale of mixed use urban development, CSD spreads out to consume large areas of land even as the population grows relatively slowly. Many CSDs are built on land in distant exurbs requiring long work commutes. The long commutes increase automobile use per capita and fuel other environmental concerns. Additional characteristics of sprawl include fragmentation of power over land use and large fiscal disparities among individual communities (Burchell et al. 1998; Downs 1999; Brueckner 2000). Carruthers and Ulfarsson (2002) argue that CSDs are not functionally related to surrounding land uses and appear as low density, scattered, leapfrog, or isolated development. Previously CSDS were believed to be built on cheap land with inferior materials. In recent years increased housing costs have resulted from land development limitations and costs stemming from the administrative requirements of government imposed growth management regimens. In addition, low density development patterns have increased the cost of providing public services (Altshuler et al. 1993; Ewing 1997).

Profitability and the CSD/MUED choice

Real estate firms face trade-offs when deciding to engage in focused (CSD) or mixed use (MUED) projects. CSD projects offer more land and square feet per dollar to homeowners and are less expensive to construct for development firms. However, CSDs are characterized by inefficient land utilization, long commute times, and associated environmental consequences. MUED projects offer shorter commute times to home owners and more efficient land utilization generally at the cost of smaller and more expensive real estate. To optimize value mixed used property must be human scale design with accessible amenities, pedestrian safety and desirable features. Due to the intricate balance between design and function that satisfies the residents as well as the retailers, the cost associated with mixed use development may outweigh the financial return resulting from development synergies. Eichholtz et al. (1995) posit that returns of different property types are driven by economic factors. Specifically, they suggest that returns on office space are driven by office employment, shops by retail sales and industrial properties by manufacturing output. Similarly, Miles and McCue (1982) find evidence that diversification by property type produces higher risk adjusted cash yields than geographic diversification. Unlike traditional single focused development, mixed use developers believe that adding population density directly affects not only retail sales but residential property value as well. Industry experts disagree about the notion that the onsite population will be a key market for supporting the retailers.

Retail chain stores may be reluctant to invest in mixed use development for several reasons. Chain stores prefer locations with convenient surface parking and a gradient level for the storefront. In addition these focused development "power centers" offer maintenance reimbursements and lower taxes to its occupants. Thus overall development costs for single purpose projects are lower than those for mixed use design. It is more expensive to build integrated mixed use property because firms have to make sure the retail operations do not interfere with residential. In addition, residential focused development in the suburbs offer ample space and exclusivity benefits that cannot be found in urban design. In light of these issues the market perception of diverse and multidimensional developments versus that of exclusive spacious retail and residential areas is interesting.

Since mixed use urban development is to human scale these developments do not offer residents some of the luxuries or amenities of CSDs. Typically, mixed use urban development does not offer modern residential or commercial products such as convenient plentiful parking and a variety of retail options. Traditionally, mixed use urban development is an environment with signs of poverty and despair. However, this has changed over the past two decades. Due to the convenience and diverse economic population, mixed use urban development have significantly higher residential, commercial and lease prices than CSD (Childs et al. 1996). Despite these seemingly straightforward characteristics of sprawl and mixed use development, evaluating their individual merits is difficult. The difficulty arises since it is often a matter of degree depending on the age, economy, population, and other circumstances of the area. The uncertainty of real estate trends and the inherent benefits of CSD and MUED have led to developers increasing their product and services offerings to include elements of both. Several authors find a negative relation be- tween uncertainty and development activity (Holland et al. 2000; Sivitanidou and Sivitanides 2000; Sing and Patel 2001; Cunningham 2006, 2007). Caballero (1991) suggests that imperfect competition is vital to predicting a negative relation

between uncertainty and investment. Alternatively, Hurn and Wright (1994) find limited evidence of a link between investment and volatility. Similarly, Downing and Wallace (2000) find a negative link between volatility of prices and costs and the decisions of homeowners to improve their homes.

However, as mentioned in the introduction, the percentage of firms engaged in mixed use properties has increased from 51% in 1984 to 87% in 2008. Given the negative relation between uncertainty and development, this increase in mixed use development can be partially attributed to reduced uncertainty of MUED relative to CSD. Furthermore, we assert that the reduced MUED uncertainty is a result of MUED synergies observed by real estate firms and consumers.

Market influence on CSD/MUED choice

Kulatilaka and Perotti (1998) argue that firms with a strategic advantage or market power are in a better position to gain greater growth opportunities when uncertainty is higher. Kulatilaka and Perotti (1998) suggest this enhanced position is independent of development type. This suggests that the firms with the strategic advantage will pursue investment growth options that alter the company's composition. Thus if MUED firms have a synergy advantage over their CSD peers, the stock market will place a premium on these types of developers. Alternatively, if the CSD provides greater benefits then the stock market will place a higher value on CSD firms.

Financial market investors have indirectly affected the form and structure of en- tire cities by funding firms that engage in development projects deemed most profitable by investors. Mixed use and focused developers have imposed their own vision on the residential and commercial landscape. Meanwhile, the economic and social structure of American cities reflects the aggregate of their individual actions. By creating developments with specific socioeconomic goals developers decide who would and would not live in various parts of the larger metropolitan area.

However, unforeseen events sometimes negate the developers' attempts to structure the environment. Deed restrictions, public zoning ordinances and other private means of land use control often undermine general economic conditions. Porter (1997) finds that state and regional land use policies work to promote better planned metropolitan areas. However, these policies and restrictions are often relaxed since community building is secondary to the principal goal of profit. Since all developers face these obstacles equally, the market value of all development firms reflects these obstacles. Novy-Marx (2007) shows that competition does not diminish the value of an option to develop in the case of differentiated products such as real estate. This is true even though locations are never perfect substitutes for each other and sites have varying opportunity costs of development due to differences in the preexisting use of a site. Since the primary purpose of the financial markets is to drive resources to their best use, this results in companies being eliminated or evolving to meet market demand.

DATA AND METHODOLOGY

The set of real estate firms is identified by SNL Interactive Database, the Standard Industrial Classification (SIC), and the North American Industry Classification System (NAICS) codes in Table 1. These firms are classified as "mixed use'' when the phrase "mixed

use'' is found in their SEC filings or news announcements. The remaining non mixed use firms are classified as "focused'' firms. Monthly gross firm return data from January 1984 to December 2008 are obtained from the Center for Research in Security Prices (CRSP) database. Monthly returns for the risk free asset (one month Treasury Bill) and the market return (value weighted return of all NYSE, AMEX, and NASDAQ stocks) are obtained from the Kenneth E. French website[3].

Three portfolios of excess returns, returns in excess of the one month Treasury Bill, are constructed as follows. The "focused'' portfolio is constructed as an equal weighted portfolio of focused firms and the "mixed use'' portfolio is constructed as an equal weighted portfolio of mixed use firms. The third portfolio, hereafter called the ZIP portfolio, is a zero investment portfolio long on the mixed use portfolio and short on the focused firm portfolio.

Lewellen and Nagel (2006) follow an approach similar to Fama and MacBeth (1973) to obtain a time series of CAPM betas ("rolling beta") and show empirically that CAPM betas are time-varying. Moore and Philippatos (2014) capture the time series of alphas following Lewellen and Nagel (2006) to examine CAPM's ability to explain momentum. In this paper we follow the approaches of Fama and MacBeth (1973), Lewellen and Nagel (2006), and Moore and Philippatos (2014) to capture the time series of alphas for mixed use and focused real estate firms. With the time series of alphas ("rolling alpha") in hand we examine the risk-adjusted performance of mixed use vs. focused firms.

Consider the standard market model:

$$Rit = \alpha i + \beta i Rmt + \varepsilon it \qquad (1)$$

When using excess returns, $Rei,t = Rit - Rft$, the value of alpha should be zero according to CAPM. In the context of "rolling alpha" the mean of our time series of alphas should be zero. Thus positive alpha indicates performance above that required for the given level of market risk. Similarly, negative alpha indicate subpar performance.

We can draw several conclusions using excess returns and estimating a five year "rolling alpha'' throughout our sample period. First, the trend of focused firm alphas vs. mixed use firm alphas can provide insight into the relative merits of mixed use properties. Second, a positive and significant ZIP alpha will reveal synergies associated with mixed use development. Third, given the two samples of alpha (one for focused and the other for mixed use firms) t tests can be used to compare the mean values of each series. The *t* test results allow us to make inferences regarding focused vs. mixed use development.

RESULTS

Figure 2 illustrates the time series of estimated rolling alphas for the focused, mixed use, and ZIP portfolios. Several observations are of note. First, the alphas for both focused

[3] Kenneth E. French is a finance professor at the Tuck School of Business at Dartmouth University. Professor French maintains a data library on his website that contains current benchmark returns and historical benchmark returns data. It is common practice amongst researchers to use these factors when examining cross-sectional returns.

and mixed use firms vary significantly over time. We observe negative values from 1988 to 2001, positive values from 2001 to 2007, and negative values again after 2008. This is indicative of the cyclical nature of the real estate market.

Second, the mixed use portfolio alpha is consistently higher than that of the focused firm portfolio. The larger mixed use alpha is consistent with our hypothesis of synergies associated with mixed use developments. Finally, and perhaps the most convincing evidence of mixed use synergies, is the ZIP portfolio alpha that is positive for virtually the entire sample period. In fact, the ZIP alpha remains positive after 2007 in which the estimated focused portfolio alpha is larger than that of the mixed use portfolio.

The observations of Fig. 2 are confirmed numerically in the results of Fama-MacBeth regressions (1) in Table 2. The mean value of the mixed use portfolio alpha (-0.0026) is larger than that of the focused portfolio alpha (-0.0084). Also, the ZIP alpha has a mean value that is positive (0.0074) and highly significant (*t* value of 25.5358). Finally, the two tailed *t* test reveals the mixed use portfolio alphas and focused portfolio alphas are statistically different (*t* value of 4.1727). These findings suggest that MUED have superior risk adjusted returns that CSD.

CONCLUSION

We contrast two alternative types of development firms within the United States in an attempt to value real estate property. Mixed use urban economic development (MUED) is characterized by a variety of dwelling types that are in close proximity to offices and shops. This live-work-shop community is described as being to human scale with efficient use of living space, conveniently accessible amenities and pedestrian safe. The second alternative is the development trend referred to as conventional suburban development (CSD) or sprawl. CSD typically consist of low density subdivision style residential development distant from urban centers. Accounting for the location, development type, socio-demographic factors and various firm and industry specific characteristics this study examines real estate investment performance among real estate development firms.

We employ the Fama-MacBeth "rolling beta" approach to examine the risk adjusted performance of MUED and CSD firms. Using this model, we find that MUED firms have statistically significant and higher risk adjusted returns than their CSD peers. We posit that the difference is primarily driven by economies of scale and synergies gained with MUED. Furthermore, these results that financial markets have recognized and priced synergies associated with MUED.

We also report a systematic increase in the relative number of MUED firms from 51% of the industry in 1984 to 87% of the industry in 2008. This suggests that development firms recognized and responded to the market demand for the products and services of MUED. Given our results we suggest further analysis of the market value of real estate development firms can provide insight into the value of and proper use of property.

REFERENCES

Altshuler, A., Gomez-Ibanez, J., and Howitt, A. (1993). *Regulation for revenue: The political economy of land use exactions*. Brookings Institution Press.

Brueckner, J. (2000). Urban sprawl: Diagnosis and remedies. *International Regional Science Review*, 23(2):160.

Burchell, R. and Mukherji, S. (2003). Conventional development versus managed growth: The costs of sprawl. *American Journal of Public Health*, 93(9):1534–1540.

Burchell, R., Shad, N., Listokin, D., Phillips, H., Downs, A., Seskin, S., Davis, J., Moore, T., Helton, D., and Gall, M. (1998). The costs of sprawl-revisited. *Transportation Research Board, National Academy Press, Washington DC*.

Caballero, R. (1991). On the sign of the investment-uncertainty relationship. *The American Economic Review*, 81(1):279–288.

Carruthers, J. and Ulfarsson, G. (2002). Fragmentation and sprawl: evidence from interregional analysis. *Growth and Change*, 33(3):312–340.

Childs, P., Roddlough, T., and Triantis, A. (1996). Mixed uses and the redevelopment option. *Real Estate Economics*, 24(3):317–339.

Cunningham, C. (2006). House price uncertainty, timing of development, and vacant land prices: Evidence for real options in Seattle. *Journal of Urban Economics*, 59(1):1–31.

Cunningham, C. (2007). Growth controls, real options, and land development. *The Review of Economics and Statistics*, 89(2):343–358.

Downing, C. and Wallace, N. (2000). "A Real Options Approach to Housing Investment,"Summer Institute.

Downs, A. (1999). Some realities about sprawl and urban decline. Housing Policy Debate, 10(4):955–974. Eichholtz, P., Hoesli, M., MacGregor, B., and Nanthakumaran, N. (1995). Real estate portfolio diversification by property type and region. *Journal of Property Finance*, 6:39–39.

Ellen, I., Schill, M., Susin, S., and Schwartz, A. (2002). Building homes, reviving neighborhoods: Spillovers from subsidized construction of owner-occupied housing in New York City. *Low income homeownership: Examining the unexamined goal*, pages 447–77.

Ewing, R. (1997). Is Los Angeles-style sprawl desirable? *Journal of the American Planning Association*, 63(1):107–126.

Fama, E. F. and MacBeth, J. (1973). Risk, return and equilibrium: Empirical tests. *Journal of Political Economy*, 81:607–636.

Galster, G., Tatian, P., and Pettit, K. (2004). Supportive housing and neighborhood property value externalities. *Land Economics*, 80(1):33.

Gordon, P. and Richardson, H. (1997). Are compact cities a desirable planning goal? *Journal of the American Planning Association*, 63(1):95–106.

Holland, A., Ott, S., and Riddiough, T. (2000). The role of uncertainty in investment: An examination of competing investment models using commercial real estate data. *Real Estate Economics*, 28(1):33– 64.

Hurn, A. and Wright, R. (1994). Geology or economics? Testing models of irreversible investment using North Sea oil data. *The Economic Journal*, 104(423):363–371.

Kulatilaka, N. and Perotti, E. (1998). Strategic growth options. Management Science, 44(8):1021–1031. Lowry, I. (1988). Planning for urban sprawl. *Transportation Research Board Report* No, 220.

Lewellen, J. and Nagel, S. (2006) The Conditional CAPM Does Not Explain Asset-Pricing Anomalies. *Journal of Financial Economics*, 82, 289-314.

Miles, M. and McCue, T. (1982). Historic returns and institutional real estate portfolios. *Real Estate Economics*, 10(2):184–199.

Moore, D. and Philippatos, G. (2014) The Unexplainable Nature of Momentum Portfolio Returns. *Journal of Mathematical Finance*, 4, 135-147.

Novy-Marx, R. (2007). An equilibrium model of investment under uncertainty. *Review of Financial Studies*, 20(5):1461.

Porter, D. (1997). *Managing Growth in America's communities*. Island Press, Washington D.C.

Sinclair, R. (1967). Von Thiinen and urban sprawl. *Annals of the Association of American Geographers*, 57:72–87.

Sing, T. and Patel, K. (2001). Evidence of irreversibility in the UK property market. *The Quarterly Review of Economics and Finance*, 41(3):313–334.

Sivitanidou, R. and Sivitanides, P. (2000). Does the Theory of Irreversible Investments Help Explain Movements in Office–Commercial Construction? *Real Estate Economics*, 28(4):623–661.

Steuteville, R. (2000). The new urbanism: An alternative to modern, automobile-oriented planning and development. *New Urban News*.

Weiss, M. (1989). Real estate history: An overview and research agenda. *The Business History Review*, 63(2):241–282.

Table 1: Real estate industry SIC and NAICS codes

Sources: SIC codes and descriptions obtained from the United States Department of Labor. NAICS codes and descriptions obtained from the United States Census Bureau.

Code	SIC Description
1521	General contractors primarily engaged in construction (including new work, additions, alterations, remodeling and repairs) of single family houses.
1522	General contractors primarily engaged in construction (including new work, additions, alterations, remodeling, and repair) of residential buildings other than single family houses.
1531	Builders primarily engaged in the construction of single family houses and other buildings for sale on their own account rather than as contractors. Establishments primarily engaged in the construction (including renovation) of buildings for lease or rental on their own account are classified in Real Estate, Industry Group 651.
1542	General contractors primarily engaged in the construction (including new work, additions, alterations, remodeling, and repair) of nonresidential buildings, other than industrial buildings and warehouses. Included are nonresidential buildings, such as commercial, institutional, religious, and amusement and recreational buildings. General contractors primarily engaged in the construction of industrial buildings
6552	Establishments primarily engaged in subdividing real property into lots, except cemetery lots, and in developing it for resale on their own account. Establishments primarily engaged in developing lots for others are classified in Industry 1794.

Code	NAICS Description
236115	Construction management, single family building Custom builders (except operative), single family home Housing, single family, construction general contractors, Precut single family housing assembly on site by general contractors Pre-manufactured housing assembly on site by general contractors Single family attached housing construction general contractors Residential construction, single family, general contractors Single family homes built on land owned by others, general contractors Vacation home, single family, construction by general contractors
236117	Cooperative apartment operative builders Custom builders, operative builders, multifamily buildings Housing construction, merchant builder Housing construction, operative builder Multifamily building operative builders Residential operative builders Row House construction operative builders Single family housing built on own land for sale (i.e. operative builders)
236210	Industrial building (except warehouses) construction Industrial building (except warehouses) construction, operative builders Operative builders (i.e. building on own land, for sale), industrial building (except warehouses)
236220	Commercial building construction Addition, alteration and renovation operative builders, commercial warehouse Addition, alteration and renovation general contractors, commercial and institutional building Commercial building construction operative builders Dormitory construction Prefabricated commercial building erection Construction management, commercial and institutional building Speculative builders (i.e. building on own land, for sale), commercial and institutional building

531120 Bank building rental or leasing Commercial building rental or leasing Shopping center (i.e., not operating contained businesses) rental or leasing Mall property operation (i.e., not operating contained businesses) rental or leasing Theater, property operation, rental or leasing

Table 2: Fama-MacBeth regression results

values (in parentheses) for slope and intercept terms from the Fama-MacBeth
of:

$$R_{ei,t} = \alpha_i + \beta_i R_{Mt} + \varepsilon_{it}$$

where $R_{ei,t} = R_{it} - R_{ft}$ are excess returns of the mixed use, focused, and zero investment (ZIP) portfolios. R_{Mt} is the value weighted return of NYSE, AMEX, and NASDAQ stocks obtained from the Kenneth E. French website.

	Focused	Mixed use	ZIP
A	-0.0084	-0.0026	0.0074
	(- 8.0993)	(-2.6882)	(25.5360)
B	0.7436	0.8643	0.0642
	(53.4780)	(39.0624)	(9.1493)
Difference in Means two tailed *t* test	0.0058 (4.1727)		

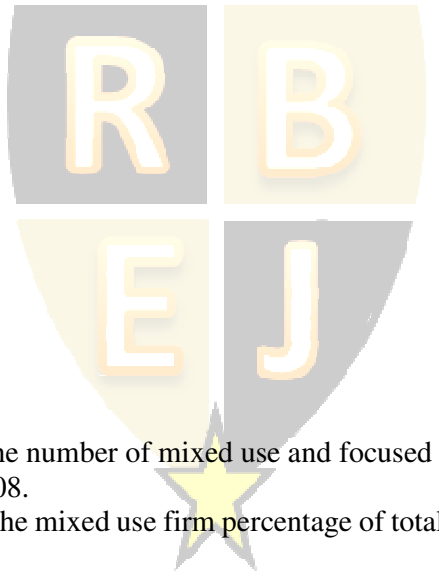
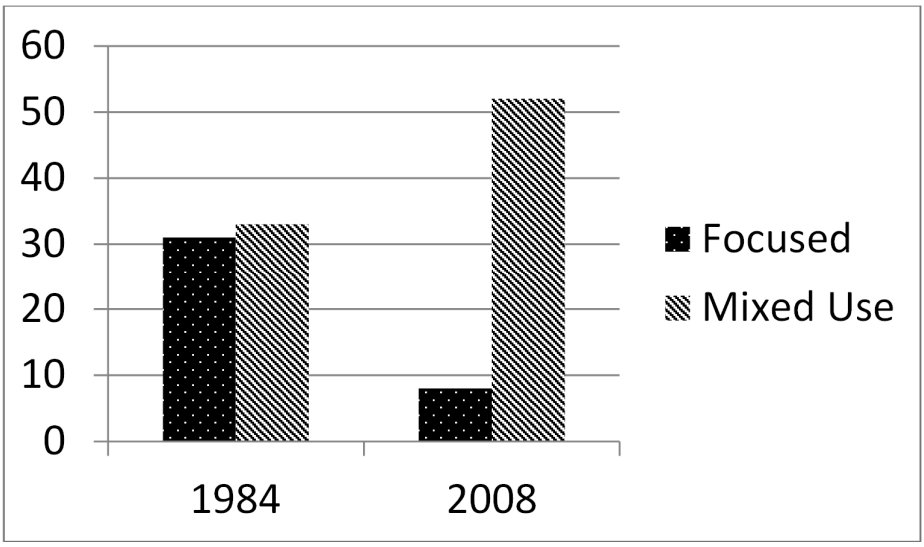


Figure 1: (a) Snapshot of the number of mixed use and focused firms in January 1984 and December 2008.
(b) Snapshot of the mixed use firm percentage of total firms in January 1984 and December 2008.

(a)


60
50
40
30
20
10
0
1984
2008
Focused
Mixed Use

(b)

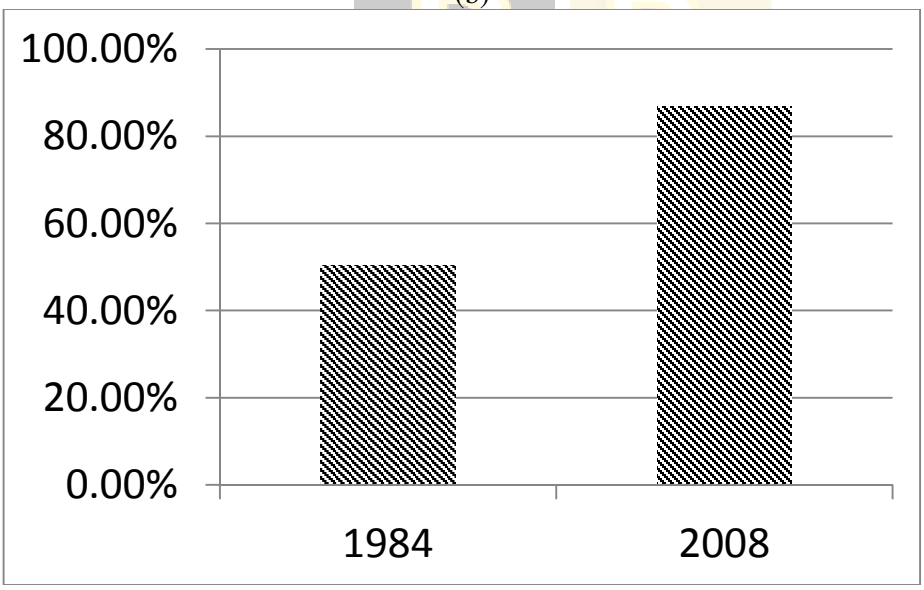

100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
1984
2008

Figure 2. Five year rolling alphas computed using the Fama-Macbeth procedure for three portfolios: (1) equal weighted portfolio of focused firms, (2) equal weighted portfolio of mixed use firms, and (3) the zero investment portfolio long on the mixed use portfolio and short on the focused portfolio.