REITs and Underlying Real Estate Markets: Is There a Link?

Andrey Pavlov
Faculty of Business
Simon Fraser University
apavlov@sfu.ca

Susan Wachter
The Wharton School
University of Pennsylvania
Wachter@wharton.upenn.edu

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This paper utilizes the Carlson, Titman, and Tiu (2010) model of REIT returns to estimate the strength of the relationship between REIT and underlying real estate returns. Our work further offers an innovative method for computing the returns of the real estate properties underlying each REIT using the Moody's/REAL commercial property price indices by region and property type. We find a statistically significant relationship between REIT and real estate returns only in the office sector. Other property types offer only very weak and insignificant relationships. This finding suggests that direct real estate investment or investment through the property price index derivatives cannot be replicated using REITs.

1. Introduction

In a theoretical model of REITs and real estate held in private funds, Carlson, Titman, and Tiu (2010) derive a theoretical relationship between REIT and underlying real estate returns. By explicitly modeling the different and dynamic cost of capital for the two forms of real estate ownership, Carlson, Titmant and Tiu recommend a specific functional form for the relationship between their returns. In this paper we empirically estimate this relationship.

The main contribution of the paper lies in the innovative method we employ to compute the returns to the underlying real estate of each REIT. Specifically, we utilize the Moody's/REAL Commercial Property Price Indices (CPPI) to create a "shadow" portfolio of the indices that matches precisely the property type and regional exposure of each REIT. We then follow the evolution of the shadow portfolio over time to estimate the return to the underlying real estate for each REIT.

We find a strong positive relationship between REIT and real estate returns only in the office space. The relationship between REITs and their underlying real estate is weak and not significant for retail, industrial, and multifamily properties. These findings are persistent throughout numerous model specifications and in the presence of a large set of control variables.

We offer a potential explanation of the weak relationship between REITs and real estate returns. In particular, REITs, like all closed-end mutual funds, contain a time-varying premium for the skills of the trust management. During periods of economic growth, all managers do well, and the value of the REIT is dominated by the value of the underlying properties. In economic stagnation, however, only the best managers do well, thus the value of management increases. This increase dampens the negative effect of the economic downturn and weakens the relationship between the REITs and the real estate properties they hold. The strength of local agglomeration effects, measured both in index

and in REIT returns, in the office sector, may explain why a significant relationship is found nonetheless in this sector..

The paper proceeds as follows. Section 2 reviews the literature on REITs and underlying property values. Section 3 explains our methodology and how we extend the prior literature on the subject. Section 4 presents the empirical results that show that REIT prices are only weakly correlated with the underlying property prices. Section 5 concludes.

2. REITs and Underlying Property Values - Background

Whether REITs provide exposure to the underlying real estate market or not has been the subject of numerous academic and industry studies. Giliberto (1990); Martin and Cook (1991); Myer and Webb (1992); Seck (1996); Lang and Naranjo (1999); Clayton and MacKinnon (2001) and(2004); and Gyourko and Keim (2005). Each examines the relationship between securitized real estate and appraisal-based commercial real estate indices in the US. All of them agree that US REITs lead analogous real estate price indices, based on appraised values, but the relationship is weak and not sufficient to explain REIT returns. These researchers also find that US REITs possess the investment characteristics of US stocks and provide only limited exposure to the underlying property markets. REITs provide limited diversification opportunities, these findings suggest, and cannot substitute for unsecuritized real estate in a well-diversified investment portfolio.

Within the last fifteen years, researchers have empirically investigated the drivers of REIT returns, typically within multi-factor asset pricing frameworks. Karoli and Sanders (2004) document that US REIT returns are only modestly explained by the risk premiums of stock and bonds. Chan, Hendershott, and Sanders (1990) show that REIT returns are driven by economic factors, such as inflation, risk premia, and interest rates. Glascock, Lu, and So (2000); Wang (1995); Okunev and Wilson (1997); Okunev, Wilson and Zurbruegg (2000); Peterson and Hsieh (1997); and Ling and Naranjo (1997, 1999) document that US REITs are more closely related to stocks than expected. Glascock, Lu,

and So (2000) show further evidence that REIT returns are strongly integrated with the US stock and bond markets. A number of studies, among them Gyourko and Keim (1992, 1993); Gyourko (1998); Wang (1995); Jirasakuldech, Campbell, and Knight (2006); Li and Wang (1995); and Karolyi and Sanders (2004) examine the predictability of REIT returns. These studies find moderate predictability, disappearing in the late 1990s, in certain sectors. Eichholtz (1996) and Lopez (2005) investigate the dependence of REIT returns using international and US securitized real estate companies respectively. Subrahmanyam (2007) shows that general stock market liquidity and order flow predict REIT order flow, but do not predict REIT returns. All of these studies provide indirect evidence that stock-based and appraisal-based real estate assets are not substitutable, perhaps because the prices of the former incorporate information about changing real estate values in a more timely fashion than the prices of unsecuritized assets. This phenomenon, they argue, is caused by infrequent property appraisal of the appraisal-based commercial indices that represent unsecuritized real estate assets.

Brueggeman, Chen and Thibodeau (1984); Hartzell, Hekman and Miles (1987); Miles and McQue (1984); Geltner (1989); Liu (1988); and Liow (2006) study the link between real estate property markets and stock markets. These studies find that the link between unsecuritized real estate and stock markets is weak, the indirect result of macroeconomic factors, such as consumption, interest rates, and inflation. These findings suggest that direct real estate investment provides substantial diversification benefits.

Several papers have empirically studied the risk-return characteristics of real estate. Goetzmann and Ibbotson (1990) and Goetzmann (1993) use regression estimates of real estate price appreciation. Ross and Zisler (1991) calculate returns from real estate investment trust funds to characterize the risk and return to real estate investment. Pavlov (2000) and Cauley and Pavlov (2002) use detailed transaction data and econometric methods to estimate the risk-return characteristics of individual real estate properties.

Finally, a number of studies directly investigate the diversification benefits of real estate in a portfolio. Miles and McCue (1982, 1984) find that property sector diversification is more beneficial than geographic diversification within the US. Fisher and Liang (2000)

and Lee (2001) support this finding. Seiler, Webb, and Myer (2001) show that REITs are not particularly effective for the purpose of diversification or the hedging of direct real estate ownership. Knight, Lizieri, and Satchell (2005) show that international securitized real estate does not seem to provide the expected diversification benefits , especially during periods of negative returns. Similarly, Glascock and Kelly (2007) find that international diversification into REITs is losing attractiveness over time, but that sector diversification is becoming more attractive .

The literature suggests that the link between securitized and unsecuritized real estate is weak and, at best, an indirect effect of economic factors, such as interest rates, GDP growth, and population growth. The literature does not find that REITs and other forms of securitized real estate investment provide exposure to the underlying real estate assets.

3. Methodology

We extend the literature on the relationship between REIT returns and the underlying real estate markets in two important ways. First, we determine the property sector and geographic exposure of each REIT using RCA (Real Capital Analytics) commercial real estate transaction data. In particular, we reconstruct the geographic and property type portfolio of each REIT using estimates of the current market values of each property. Second, we use the quarterly Commercial Property Price Index (CPPI) published by REAL for the office sector by region to create a shadow portfolio that mimics the exposure of each REIT.[1] The return to this shadow portfolio is our best estimate of the return to the property portfolio held by each REIT.

We then estimate a linear regression model of the unlevered REIT returns on the returns to the shadow portfolio. We include numerous control variables, such as interest rate changes, credit and term structure spreads, industrial production growth, and commodity price changes.

[1] REAL is a company that publishes the Commercial Property Price Index (CPPI) and provides liquidity for some futures contracts traded on these indices. (www.realindices.com).

Our overall finding is that the relationship between unlevered REIT returns and the shadow portfolio return is weak and insignificant in all property types except office. In the office sector we do find a strong and statistically significant relationship between REITs and the real estate properties they hold.

We use individual REIT data and the CPPI indices. REIT data comes from three different sources: SNL, CRSP and RCA. The SNL database contains the following variables: region, acquisition and sale date for REITs properties, and total debt/ total capitalization for REITs. The RCA dataset contains property purchase price, square footage, and number of units for apartments. The CRSP data contains REIT equity returns. We use quarterly data for the period 2001:Q1 – 2007:Q4.[2] The SNL database contains a total of 317 REITs, of which 214 are publicly traded and exist in the CRSP dataset. Of those we chose REITs that are 70% or more invested in one of the four property types we focus on: office, retail, industrial, and multifamily and merge them with the RCA real estate transaction database described above. This leaves 71 REITs which are invested predominantly in one property type. Of those, 22 REITs are invested primarily in office properties. We compute the unlevered returns following the method of Tsai (2007) using debt and total capitalization figures available in the SNL database.

Using the merged SNL and RCA data we track all REIT acquisitions and dispositions. We use this data to track the real estate portfolio allocation of each REIT to the three CPPI regions (West, South, and East) through time. These regions overlap the NCREIF regions of the same name. We then create a synthetic portfolio using the CPPI indices by geographic region and property sector to mimic the real estate exposure of each REIT. The weights of the synthetic portfolio are computed using the following two alternative methods:

1. Using the estimated value of each property. The first quarter a REIT acquires a property, we use the purchase price of this property to compute the weight of this

[2] As a robustness check, we also performed the analysis excluding the third and forth quarters of 2001. This did not alter the statistical significance of our estimates and had only a marginal impact on the point estimates.

property in the overall portfolio. We then use the CPPI index for the same property type and geographic region to estimate the value of the property in question through time. Since the CPPI indices are only available starting in 2001, the value of the properties acquired before 2001 are adjusted using the NCREIF index for that property type until 2001. Therefore, the estimated value of each property in each time period is given by:

$$V_{j,t} = P_{j,0} * (1 + R_{j,1}) * (1 + R_{j,2}) * ... * (1 + R_{j,t}), \quad (1)$$

where $V_{j,t}$ denotes the estimated value of property j at time t quarters since purchase, $P_{j,0}$ denotes the purchase price of property j, and $R_{j,t}$ denotes the CPPI return for the property type and region of property j. We then use the contemporaneous estimated value of each property, $V_{j,t}$, to compute the geographic allocation of the REIT.

2. Using the size of each property. The RCA data reports the total leaseable square footage of each office, retail, or industrial property, and the total number of units for multifamily. We multiply this figure by the average price per square foot (average price per unit for multifamily) for the respective property type and geographic region to arrive at an alternative estimate of the value of the property at each point in time, $V_{j,t}$.

Once the geographic allocaiton of each REIT is established, we create a shadow portfolio of the CPPI indices that mimics the property type and geographic exposure of each REIT as follows:

$$S_{i,t} = W(West, i, t) * R(West, t) + W(East, i, t) * R(East, t) + W(South, i, t) * R(South, t), \quad (2)$$

where $S_{i,t}$ denotes the shadow portfolio return for REIT i at time t, W denotes REIT i allocation to the respective region at time t, and R denotes the CPPI return for the respective region at time t.

We perform correlation analysis between the unlevered REIT returns and the CPPI index-based synthetic (shadow) portfolio. We also provide cross-correlations with the major

market indices, including the SP500, Wilshire 2000, Dow Jones, and NASDAQ. Furthermore, we include additional factors to explain REIT returns. The factors we include are inflation, commodity price indices, interest rates, currency exchange rates, changes in productivity and changes in industrial production.[3] We also investigate the correlation between NAV of the REITs and the synthetic portfolio.

Following Carlson, Titman, and Tiu (2010) once the synthetic (shadow) portfolio for each REIT is constructed, we regress the excess return of each REIT on its contemporaneous shadow portfolio excess return and additional controls, such as the excess return on the stock market:

$$R(REIT_{i,t}) - R_{F,t} = \alpha + \beta[S_{i,t}) - R_{F,t}] + \gamma[R(Stock_{i,t}) - R_{F,t}] + \ldots, \quad (3)$$

where R denotes the quarterly return of an asset, R_F, denotes the contemporaneous risk-free rate, and α, β, and γ denote the estimated parameters.

4. Results

Table 1 provides the estimated parameters (robust standard errors in parentheses) for regression Equation (3) for the shadow portfolio constructed using method 1 (described above). The first line in each table does not subtract the risk-free rate. The second line reports the estimates of Equation (3) based on the return to the CPPI shadow portfolio and no other explanatory variables. All other lines report the parameter estimates in the presence of various controls.

The coefficients on the shadow portfolio return for retail and industrial properties (Tables 1.1 and 1.4) are positive and significant when there are no control variables, or the control variables are limited to measures of the stock market performance. Adding

[3] The control variables we use are standard in the asset pricing literature. For two examples see a hedge fund performance study (http://www.iijournals.com/JPM/default.asp?Page=2&ISS=24026&SID=690604&S=JPM) and an oil price model (http://www.economy.com/home/products/us_macro_model.asp?pid=31-30001-04).

additional controls, such as term structure, credit spread, inflation, and growth in industrial production reduces the coefficient on the shadow portfolio and eliminates its statistical significance. This finding suggests that REITs provide exposure to the stock markets and various economic variables. The exposure to the underlying real estate markets, as measured by CPPI, is, however, very limited and not statistically significant.

An alternative explanation of the weak relationship between REIT and shadow portfolio returns is that the control variables are highly correlated with the shadow portfolio returns. Notice, however, that the control variables we report are statistically significant, while the return on the shadow portfolio is not. This is an indication that the control variables are more closely related to the unlevered REIT returns than the shadow portfolio returns.

The coefficients on the shadow portfolio for multifamily REITs, reported in Table 1.2, are negative and never statistically significant. This is likely because of our inability to appropriately measure the geographic exposure of multifamily REITs. Since data on the square footage of multifamily buildings is not available, we use the number of apartment units as a proxy. As our results suggest, using number of units to approximate the geographic exposure of the multifamily REITs introduces noise in the data, resulting in no statistically significant relationship between apartment RETI returns and their underlying shadow portfolios. Alternatively the geographical market that is being measured by CPPI and REITs are imperfectly overlapping and this "noise" is heightened for apartments particularly due to this lack of data. More generally, office markets, due to their geographic clustering, given agglomeration economies, may more closely overlap spatially as measured by CPPI and REITs than other real estate sectors.

The office sector provides the strongest relationship between REIT returns and shadow portfolio returns (Table 1.3). All shadow portfolio coefficients are positive, and almost all are statistically significant even in the presence of our control variables. This suggests that of all property sectors, office REITs represent the closest, most direct, exposure to the underlying real estate markets.

Since REIT returns are forward looking, but the CPPI indices reflect the current market conditions, we re-estimate Equation (3) by lagging the CPPI returns one quarter. Equitation (3) becomes:

$$R(REIT_{i,t}) - R_{F,t} = \alpha + \beta[S_{i,t-1}) - R_{F,t-1}] + \gamma[R(Stock_{i,t}) - R_{F,t}] + ... \quad (4)$$

Table 1a reports the results of this estimation. These coefficients, with the exception of the retail sector, are generally not significant and do not exhibit any particular pattern.

Since REITs seem to provide a very strong exposure to the broad stock markets (all stock market coefficients are positive and significant), one might suspect that a portfolio that is long REITs and short the return on the broad markets would provide increased exposure to the underlying real estate markets. We test this hypothesis by regressing the return on REITs minus the return on the S&P 500 index on the shadow portfolio for each REIT and various controls. Table 2 provides the results of this estimation. In particular, it provides the estimates using portfolio construction method 1, described above, except the dependant variable is the return on the REIT minus the return on the S&P 500 index. Our findings suggest that this hedge is largely ineffective in providing real estate exposure. With the exception of office REITs, only a few of the coefficients on the shadow portfolio are significant.

Since unlevered REIT returns include changes in the value of management in addition to property value changes, we investigate whether the reported changes in the NAV estimates provide a better exposure to the underlying real estate markets. In principal, changes in the NAV precisely reflect changes in property value, net of acquisitions or dispositions. Table 3 provides the estimates using portfolio construction method 1, described above, except the dependent variable is the change in the NAV of the REIT, rather than the stock return on the REIT. Our findings suggest that such a relationship is very weak, with none of the coefficients on the shadow portfolio significant. This

suggests that the NAV reported by REITs does not represent accurately the changes in the underlying value of their portfolio.

Tables 4, 5, and 6 provide the analogous results of Tables 1, 2, and 3, except the shadow portfolio is constructed using method 2 (described above). The first line in each table does not subtract the risk-free rate. The second line reports the estimates of Equation (3) only with the return to the CPPI shadow portfolio. All other lines report the parameter estimates in the presence of various controls. We find that the second method of constructing the shadow portfolio provides very similar results, although slightly weaker. Again, except for the office sector, REITs provide very limited exposure to the underlying real estate markets.

5. Conclusion

In this paper we investigate the relationship between unlevered REIT returns and the returns on the underlying real estate the REIT holds. We compute the return on the underlying real estate using a shadow portfolio of the CPPI property market indices. We find that REITs provide exposure to the underling real estate markets in the case of the office sector. In other sectors, the relation between REIT and shadow portfolio returns is weak and does not survive the presence of standard economic controls, such as term structure, inflation, and growth in industrial production.

The main conclusion of this finding is that the ability to achieve real estate exposure through investing in REITs unlike a direct investment in real estate property is in question.

REFERENCES

Carlson, M., S. Titman, and C. Tiu. (2010) The Returns Linkages for Private and Public Real Estate. *Working Paper*

Chan, K. C., Hendershott, Patric H. and Sanders, Anthony B. (1990). Risk and Return on Real Estate: Evidence from Equity REITs. *Real Estate Economics*, 18(4), 431-452

Clayton, Jim and MacKinnon, Greg. (2001). The Time-Varying Nature of the Link between REIT, Real Estate and Financial Asset Returns. *Journal of Real Estate Portfolio Management*, 7(1), 62-78.

Clayton, Jim and MacKinnon, Greg. (2003). The Relative Importance of Stock, Bond and Real Estate Factors in Explaining REIT Returns. *The Journal of Real Estate Finance and Economics*, 27(1), 39-60.

Eichholtz, Piet M.A. (1996). The Stability of the Covariances of International Property Share Returns. *Journal of Real Estate Research, American Real Estate Society*, 11(2), 149-158.

Giliberto, S. Michael. (1990). Equity Real Estate Investment Trusts and Real Estate Returns. *Journal of Real Estate Research, American Real Estate Society*, 5(2), 259-264.

Glascock, J. L., Lu, C. and So, R. W. (2000). Further Evidence on the Integration of REIT, Bond and Stock Returns. *Journal of Real Estate Finance and Economics*, 20(2), 177-194.

Glascock, John and Kelly, Lynne Kelly. (2007). The Relative Effect of Property Type and Country Factors in Reduction of Risk of Internationally Diversified Real Estate Portfolios. *The Journal of Real Estate Finance and Economics*, 34(3), 369-384.

Gyourko, Joseph and Keim, Donald B. (undated). What Does the Stock Market Tell Us About Real Estate Returns? (Revision of 18-91) (Reprint 030). 11-92

Jirasakuldech, B., Campbell, R. D. and Knight, J. R. (2006). Are There Rational Speculative Bubbles in REITs? *Journal of Real Estate Finance and Economics*, 32(2), 105-127.

Karolyi, G. A. and Sanders, Anthony B. (1998). The Variation of Economic Risk Premiums in Real Estate Returns. *Journal of Real Estate Finance and Economics*, 17(3), 245-262.

Knight, J., Lizieri, C. and Satchell, S. (2005). Diversification When It Hurts? The Joint Distributions of Real Estate and Equity Markets. *Journal of Property Research*, 22(4), 309-323.

Li, Yuming and Wang, Ko. (1995). The Predictability of REIT Returns and Market Segmentation. *Journal of Real Estate Research, American Real Estate Society*, 10(4), 471-482.

Ling, D. and Naranjo, A. (1997). Economic Risk Factors and Commercial Real Estate Returns. *The Journal of Real Estate Finance and Economics*, 14, 283-307.

Ling, D. and Naranjo, A. (1999). The Integration of Commercial Real Estate Markets and Stock Markets. *Real Estate Economics*, 27, 483–516.

Liow, Kim Hiang. (2006). Dynamic Relationship Between Stock and Property Markets. *Applied Financial Economics*, 16(5), 371-376.

Lopez, Jose A. (2005). Empirical Analysis of the Average Asset Correlation for Real Estate Investment Trusts. *Working Paper Series 2005-22, Federal Reserve Bank of San Francisco.*

Okunev, J. and Wilson, P. J. (1997). Using Nonlinear Tests to Examine Integration Between Real Estate and Stock Markets. *Real Estate Economics*, 25(3), 487-503.

Okunev, J., Wilson, P. J. and Zurbruegg, R. (2000). The Causal Relationship Between Real Estate and Stock Markets. *Journal of Real Estate Finance and Economics*, 21(3), 251-261.

Peterson, J. D. and Hsieh, C. (1997). Do Common Risk Factors in the Returns on Stocks and Bonds Explain Returns on REITs? *Real Estate Economics*, 25(2), 321-345.

Ross, Stephen A. and Zisler, Randall C. (1991). Risk and Return in Real Estate. *The Journal of Real Estate Finance and Economics*. 4(2), 175-190.

Seck, D. (1996). The Substitutability of Real Estate Assets. *Real Estate Economics*, 24, 75–96.

Seiler, M., Webb, J. and Myer, N. (2001). Can Real Estate Portfolios Be Rebalanced/Diversified Using Equity REIT Shares? *Journal of Real Estate Portfolio Management*, 1, 25-42.

Subrahmanyam, Avanidhar. (2007). Liquidity, Return and Order-Flow Linkages Between REITs and the Stock Market. *Real Estate Economics*, 35(3), 383-408.

Tsai, J. (2007). A Successive Effort on Performance Comparison Between Public and Private Real Estate Equity Investment. *MIT Real Estate Center Thesis.*

Webb, James R. and Myer, F.C. Neil. (1993). Return Properties of Equity REITs, Common Stocks, and Commercial Real Estate: A Comparison. *Journal of Real Estate Research*, 8(1), 87-106.

List of abbreviations used in the tables

LR	Unleveraged REIT return
Rf	Risk free interest rate (3 month Treasury rate)
LR_r_f	LR – Rf
shadport	Shadow portfolio
shadport_r_f	Shadow portfolio – Rf
SP500_r_f	SP500 return – Rf
DowJ_r_f	Dow Jones return – Rf
NASDAQ_r_f	NASDAQ return – Rf
Wilsh_r_f	Wilshire 5000 - Rf
Termsrtr	Term structure: 10 year Treasury rate – 1 year Treasury rate
CPILFE	CPI-U less food and energy
CredSpr	Credit spread: 5 year Treasury rate – 5 year BB bond
gProd	Growth rate of productivity (productivity is BLS business output per person)
ExchRate	Exchange rate between US$ and major currencies basket
Inflation	Growth rate of CPI
gprodInd	Growth rate of industrial production index
NAV	Net asset value

Table 1. Weighting is based on purchase price inflated by the CPPI index.
Dependent variable : Unlevered REIT Return – Risk-free Rate.

1.1 Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.016 (.11)												0.00 (.06)
	.38 (.09)												0.04 (.06)
	.23 (.09)	**.47** (.06)											0.14 (.06)
	.29 (.09)		**.35** (.08)										0.09 (.06)
	.27 (.08)			**.33** (.04)									0.17 (.06)
	.22 (.08)				**.46** (.06)								0.15 (.06)
	.04 (.12)					**1.27** (.36)							0.07 (.06)
	.36 (.09)							**2.16** (.50)					0.06 (.06)
	.04 (.13)	**.43** (.06)				**.73** (.38)							0.15 (.06)
	.21 (.09)	**.46** (.06)						**1.76** (.60)					0.15 (.06)
	.02 (.14)	**.44** (.10)				-.02 (.57)			**-2.14** (.62)	**.00** (.00)	-1.90 (.71)	.57 (.73)	0.22 (.06)
	-.15 (.14)	**.35** (.09)				**-2.46** (.81)	**-.01** (.00)		**-3.00** (.62)	-.00 (.00)		-1.00 (.67)	0.25 (.06)
	.03 (.13)	**.27** (.09)				.17 (.39)					**-2.68** (.63)	.60 (.64)	0.18 (.06)
	.11 (.13)	**.35** (.07)				**-2.0** (.79)	**-.01** (.00)					-.05 (.63)	0.19 (.06)

1.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.28 (.31)												0.01 (.13)
	.00 (.21)												0.00 (.13)
	-.12 (.24)	**.72** (.35)											0.07 (.12)
	-.04 (.22)		**.56** (.34)										0.04 (.13)
	-.13 (.24)			**.41** (.21)									0.05 (.12)
	-.13 (.24)				**.66** (.32)								0.06 (.12)
	-.21 (.32)					1.34 (.94)							0.01 (.13)
	-.01 (.21)							1.79 (2.16)					0.00 (.13)
	-.17 (.29)	**.69** (.33)				.38 (.62)							0.07 (.12)
	-.12 (.24)	**.71** (.34)						.93 (1.59)					0.07 (.12)
	.02 (.33)	**1.00** (.31)				.39 (1.19)			-2.77 (1.62)	.00 (.00)	4.01 (2.13)	-1.86 (3.31)	0.09 (.12)
	-.08 (.42)	**.66** (.25)				-2.07 (1.83)	-.01 (.01)		-1.30 (1.45)	.00 (.01)		-.37 (3.06)	0.08 (.12)
	-.19 (.31)	**.77** (.27)				1.11 (.97)					3.03 (1.92)	-2.05 (2.97)	0.08 (.12)
	-.14 (.30)	**.60** (.20)				-2.01 (1.40)	-.01 (.00)					-.27 (2.21)	0.08 (.12)

1.3 Office Sector

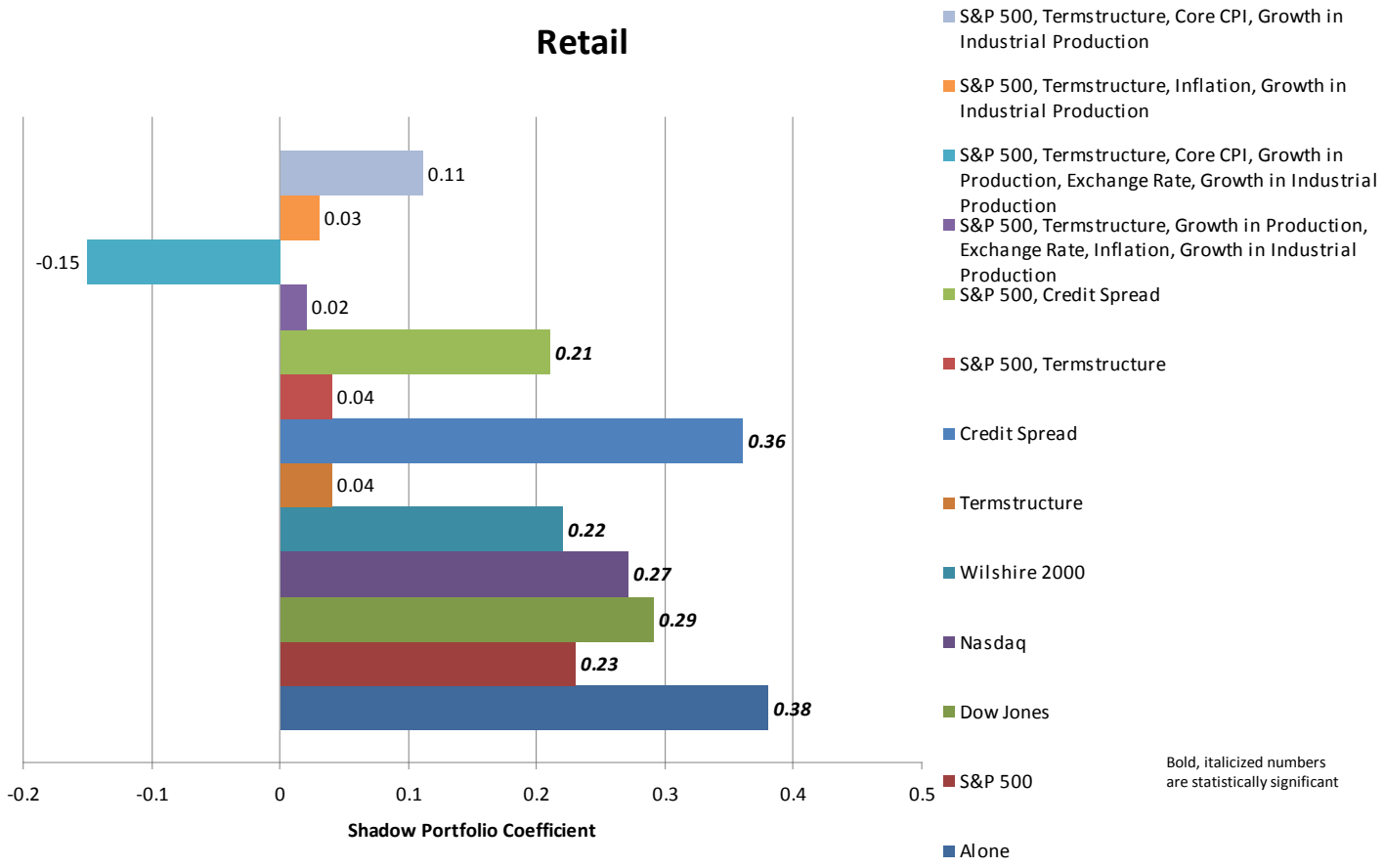
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

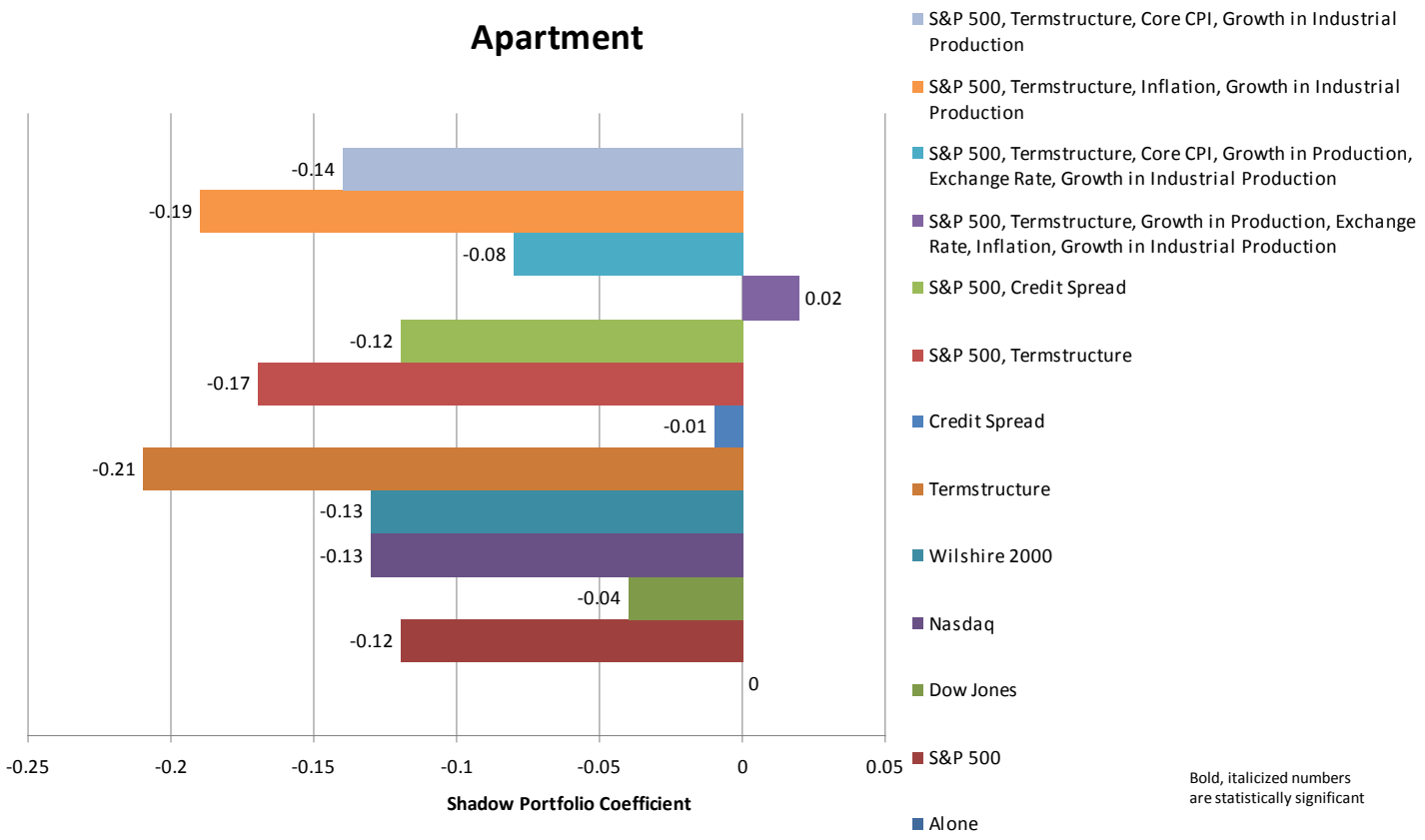
LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.14 (.09)												0.01 (.05)
	.33 (.08)												0.04 (.05)
	.21 (.08)	**.53** (.05)											0.28 (.04)
	.26 (.08)		**.46** (.05)										0.20 (.04)
	.16 (.08)			**.32** (.03)									0.26 (.04)
	.19 (.08)				**.51** (.04)								0.29 (.04)
	.20 (.09)					**.69** (.22)							0.07 (.05)
	.30 (.09)							**1.24** (.60)					0.05 (.05)
	.21 (.08)	**.53** (.05)				.03 (.20)							0.28 (.04)
	.20 (.08)	**.53** (.04)						.80 (.50)					0.28 (.04)
	.22 (.08)	**.57** (.07)				**-**.61 (.30)			-1.17 (.47)	**.00** (.00)	-1.01 (.49)	.60 (.58)	0.32 (.04)
	.18 (.08)	**.54** (.07)				**-1.60** (.55)	**-.01** (.00)		-1.51 (.43)	.00 (.00)		**-.15** (.54)	0.33 (.04)
	.23 (.09)	**.45** (.06)				-.30 (.24)					**-1.38** (.46)	.29 (.53)	0.29 (.04)
	.17 (.09)	**.49** (.06)				**-1.58** (.53)	**-.001** (.00)					.12 (.48)	0.3 (.04)

1.4 Industrial Sector

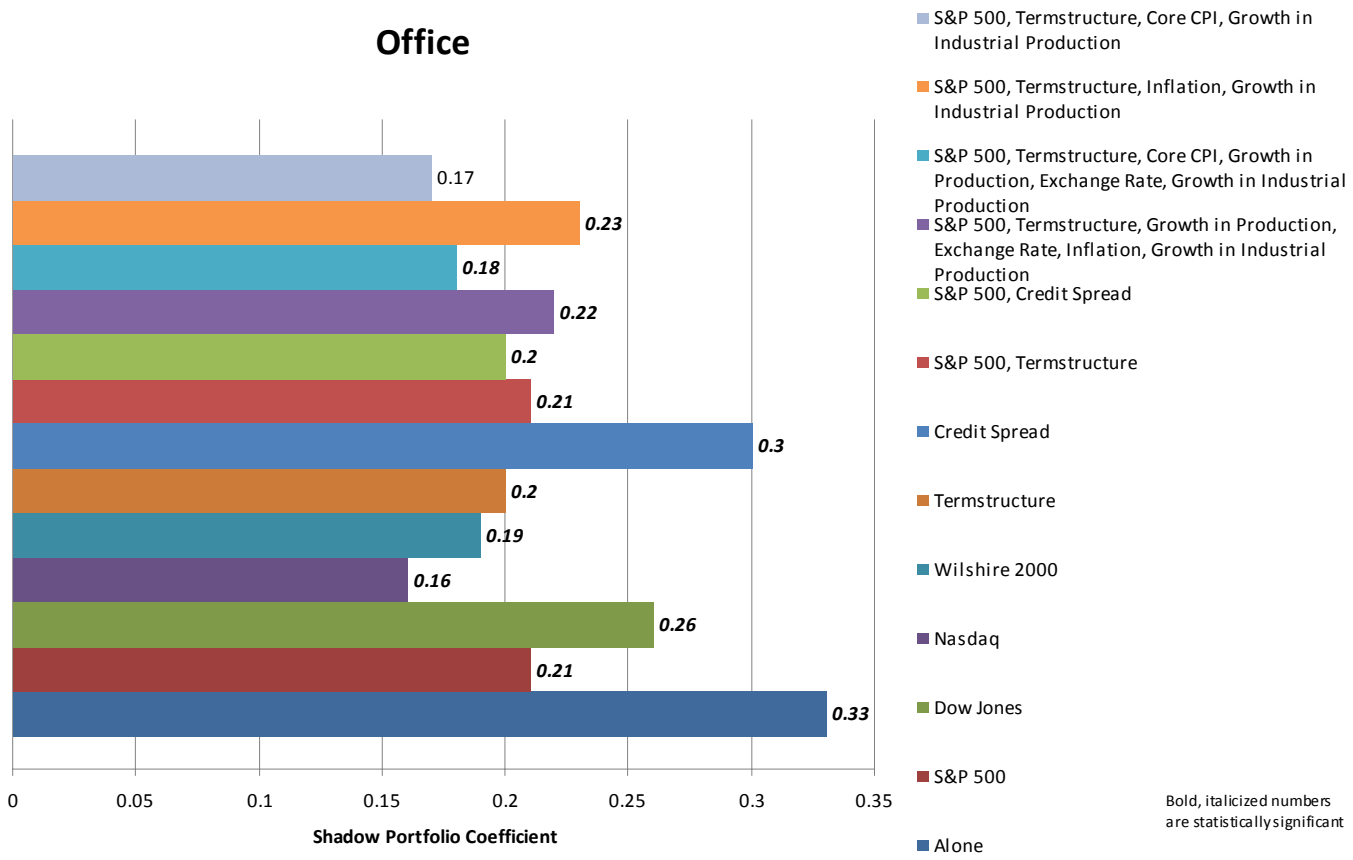
Note: The first term of this regression is not LR_r_f and shadportet_r_f, but just LR and shadportet.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.10 (.12)												0.00 (.04)
	.35 (.10)												0.07 (.04)
	.23 (.09)	**.38** (.08)											0.22 (.04)
	.28 (.09)		**.31** (.09)										0.16 (.04)
	.29 (.12)			**.27** (.05)									0.26 (.04)
	.23 (.09)				**.37** (.08)								0.23 (.04)
	.15 (.14)					**.86** (.39)							0.11 (.04)
	.36 (.10)							**2.10** (.62)					0.11 (.04)
	.13 (.13)	**.35** (.08)				.46 (.38)							0.23 (.04)
	.24 (.09)	**.37** (.08)						1.73 (.68)					0.25 (.04)
	.51 (.17)	**.37** (.10)				**-1.60** (.63)			-1.18 (.78)	**.01** (.00)	**-2.4** (.79)	1.61 (.96)	0.4 (.04)
	.31 (.18)	**.43** (.16)				-1.59 (.76)	-.00 (.00)		**-2.08** (.69)	.00 (.00)		.09 (.83)	0.36 (.04)
	.22 (.14)	**.22** (.09)				-.13 (.42)					**-2.14** (.60)	.37 (.74)	0.28 (.04)
	.27 (.14)	**.28** (.08)				-2.06 (.76)	**-.01** (.00)					.01 (.69)	0.29 (.04)


Retail
0.11
0.03
-0.15
0.02
0.21
0.04
0.36
0.04
0.22
0.27
0.29
0.23
0.38
-0.2
-0.1
0
0.1
0.2
0.3
0.4
0.5
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant



Bold, italicized numbers are statistically significant


Office
0.17
0.23
0.18
0.22
0.2
0.21
0.3
0.2
0.19
0.16
0.26
0.21
0.33
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

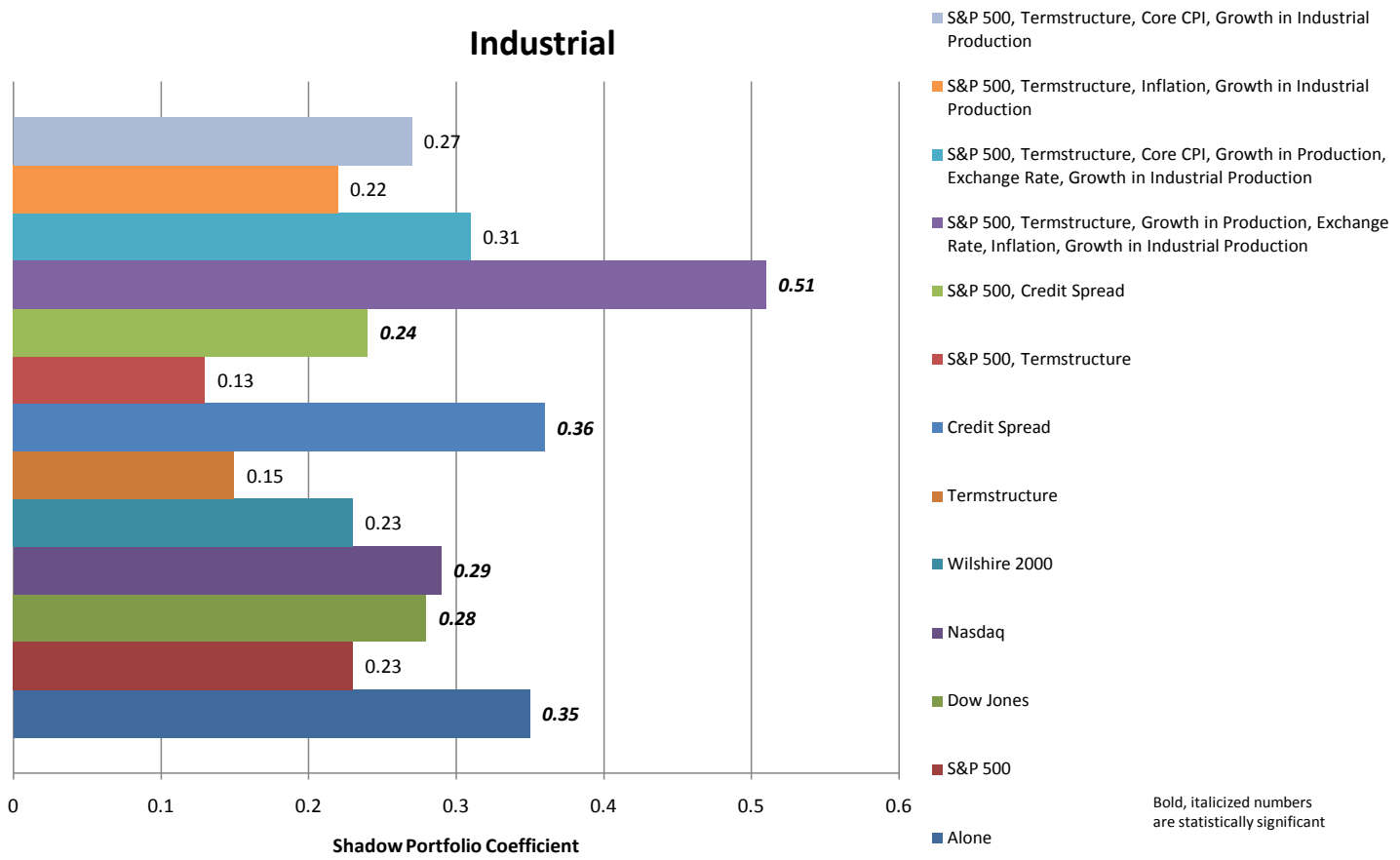

Industrial
0.27
0.22
0.31
0.51
0.24
0.13
0.36
0.15
0.23
0.29
0.28
0.23
0.35
0
0.1
0.2
0.3
0.4
0.5
0.6
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 1.a Weighting is based on purchase price inflated by the CPPI index.
Dependent variable: Unlevered REIT Return – Risk-free Rate.

1.1a Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadport_r_f (t-1)	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	**.40** (.11)												0.03 (.06)
	.61 (.10)												0.09 (.06)
	.44 (.09)	**.58** (.06)											0.22 (.06)
	.55 (.10)		**.51** (.07)										0.18 (.06)
	.50 (.10)			**.35** (.03)									0.24 (.06)
	.42 (.09)				**.54** (.06)								0.22 (.06)
	.44 (.11)					**.74** (.31)							0.10 (.06)
	.62 (.10)							**4.32** (1.08)					0.12 (.06)
	.50 (.12)	**.61** (.07)				-.27 (.32)							0.22 (.06)
	.35 (.09)	**.85** (.10)						**-5.65** (1.80)					0.24 (.06)
	.62 (.14)	**.51** (.11)				**-1.24** (.54)			**-2.12** (.63)	**.00** (.00)	**-2.30** (.69)	.92 (.72)	0.29 (.06)
	.46 (.15)	**.54** (.13)				-1.70 (.90)	-.01 (.00)		**-2.94** (.63)	.00 (.00)		-.64 (.69)	0.28 (.06)
	.50 (.11)	**.47** (.10)				**-.85** (.33)					**-2.83** (.59)	1.15 (.62)	0.26 (.06)
	.48 (.12)	**.53** (.12)				-1.19 (.92)	-.00 (.00)					-.03 (.62)	0.23 (.06)

1.2a Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f(t-1)	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.16 (.19)												0.01 (.08)
	.03 (.15)												0.00 (.08)
	-.03 (.15)	**.36** (.12)											0.03 (.08)
	.02 (.15)		.18 (.15)										0.01 (.08)
	-.02 (.15)			**.20** (.10)									0.03 (.08)
	-.04 (.15)				**.33** (.12)								0.03 (.08)
	-.09 (.19)					.87 (.61)							0.02 (.08)
	.05 (.14)							3.05 (2.46)					0.01 (.08)
	-.07 (.19)	**.31** (.11)				.36 (.64)							0.04 (.08)
	-.06 (.14)	**.49** (.19)						-2.68 (3.80)					0.04 (.08)
	-.16 (.18)	**.62** (.22)				1.03 (.91)			-2.44 (1.52)	.00 (.00)	2.73 (1.59)	-.019 (1.63)	0.07 (.08)
	-.25 (.21)	.14 (.21)				**-2.92** (1.42)	**-.01** (.01)		-1.91 (1.30)	-.00 (.00)		.60 (1.22)	0.07 (.08)
	-.12 (.20)	**.52** (.18)				.69 (.70)					1.63 (1.03)	.89 (1.00)	0.05 (.08)
	-.14 (.22)	.23 (.22)				-1.93 (1.33)	-.01 (.01)					1.47 (.99)	0.05 (.08)

1.3a Office Sector

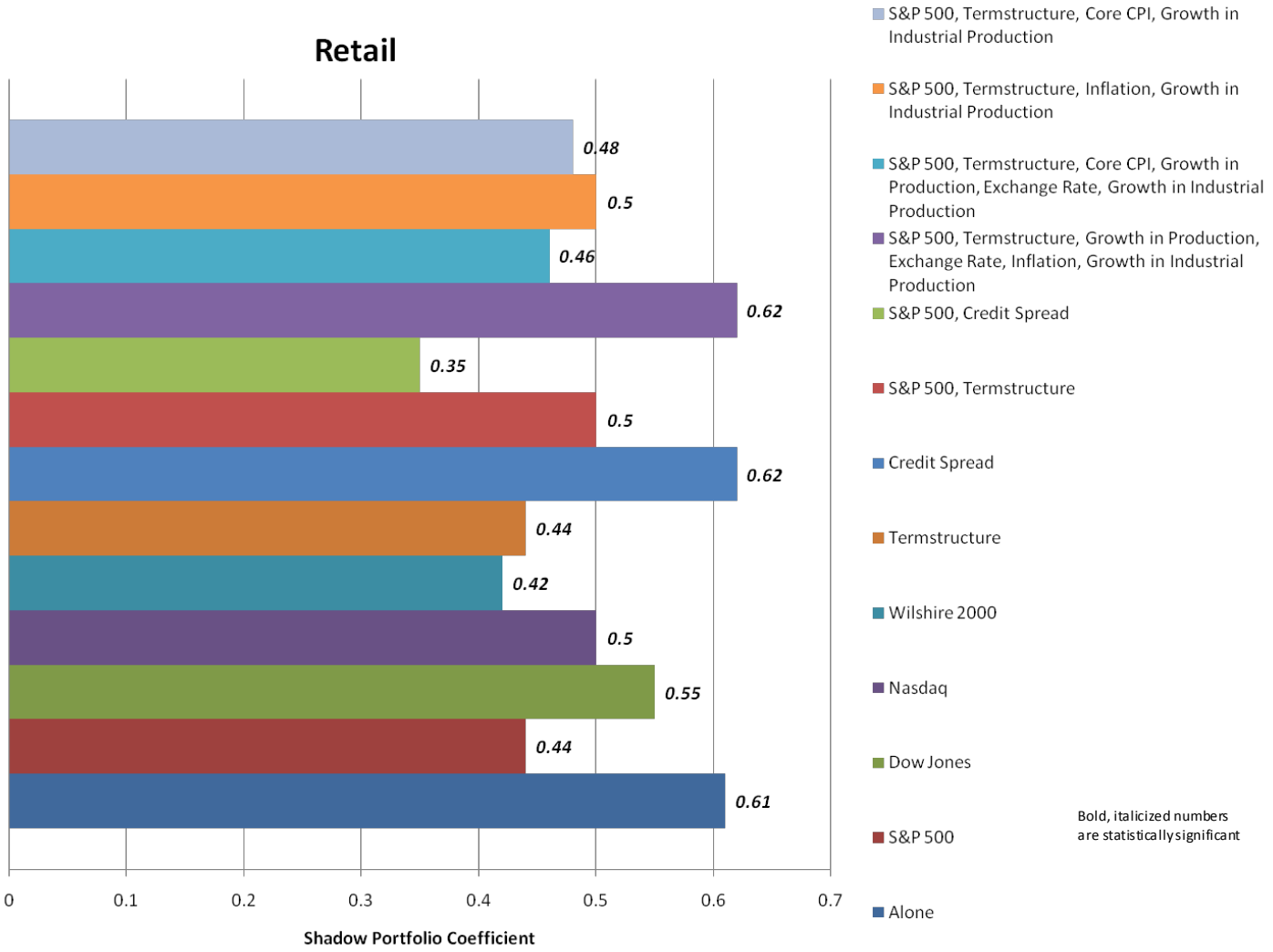
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

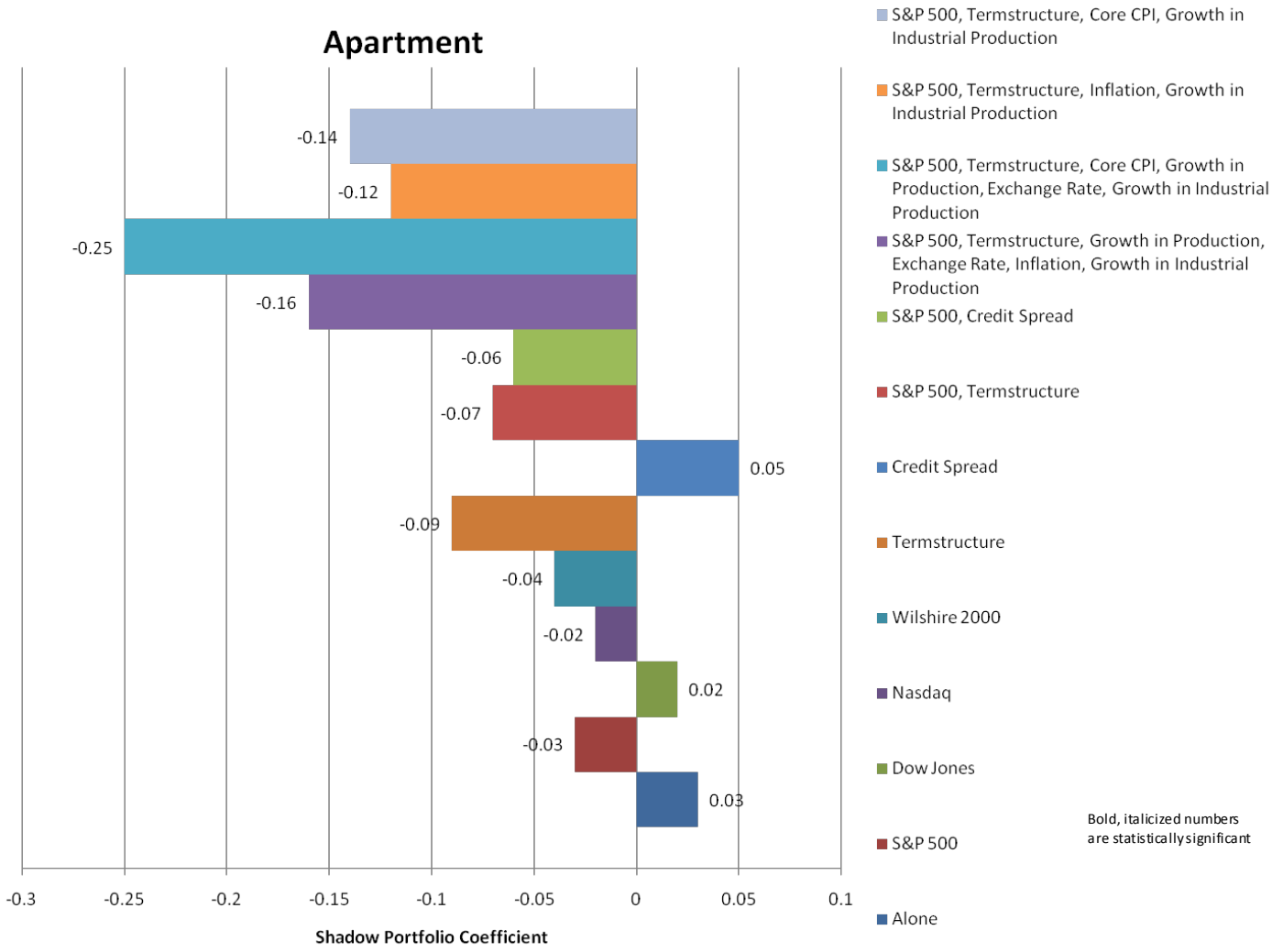
LR_r_f	shadport_r_f(t-1)	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.10 (.10)												0.00 (.05)
	.27 (.09)												0.03 (.05)
	-.01 (.09)	**.62** (.05)											0.28 (.04)
	.08 (.09)		**.53** (.06)										0.19 (.05)
	.03 (.08)			**.33** (.03)									0.25 (.04)
	-.04 (.09)				**.58** (.05)								0.29 (.04)
	.14 (.10)					**.86** (.23)							0.07 (.05)
	.19 (.09)							**5.31** (.92)					0.11 (.05)
	-.01 (.09)	**.62** (.06)				.01 (.21)							0.28 (.04)
	-.03 (.08)	**.77** (.07)						**-3.31** (1.21)					0.30 (.04)
	.08 (.11)	**.56** (.10)				-.39 (.33)			**-1.23** (.49)	.00 (.00)	-.87 (.51)	.27 (.63)	0.31 (.04)
	-.05 (.10)	**.50** (.10)				**-1.92** (.70)	**-.01** (.00)		**-1.59** (.49)	.00 (.00)		-.28 (.60)	0.32 (.04)
	.03 (.11)	**.55** (.10)				-.27 (.24)					**-1.17** (.48)	.48 (.57)	0.29 (.04)
	-.06 (.10)	**.51** (.11)				**-1.50** (.67)	**-.01** (.00)					.22 (.57)	0.29 (.04)

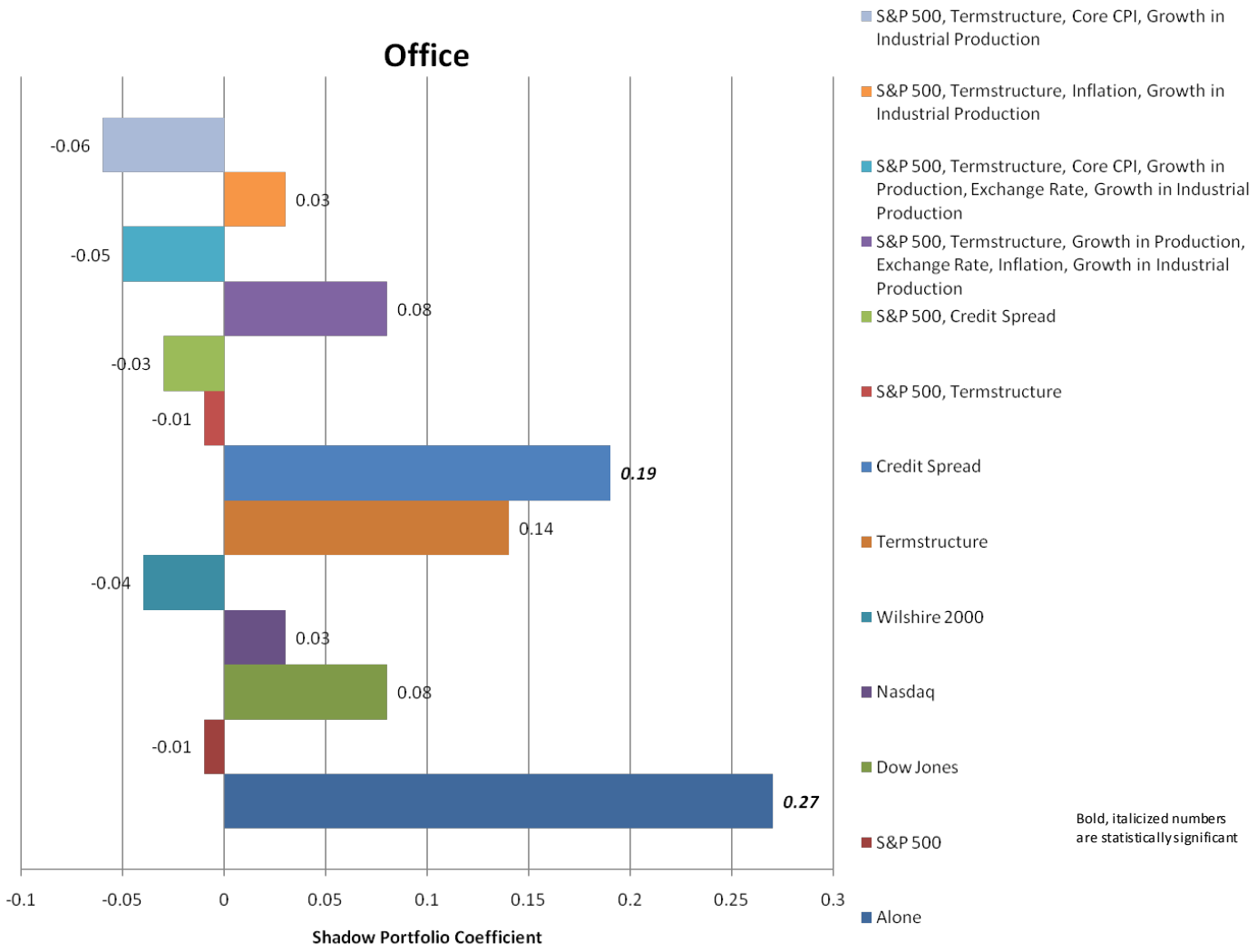
1.4a Industrial Sector

Note: The first term of this regression is not LR_r_f and shadportet_r_f, but just LR and shadportet.

LR_r_f	shadportret_r_f(t-1)	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.17 (.15)												0.01 (.04)
	.08 (.14)												0.00 (.04)
	.04 (.12)	**.52** (.09)											0.25 (.04)
	.11 (.13)		**.46** (.10)										0.17 (.04)
	.10 (.11)			**.30** (.05)									0.25 (.04)
	.04 (.12)				**.48** (.08)								0.26 (.04)
	-.12 (.15)					**1.16** (.35)							0.10 (.04)
	.09 (.14)							**4.09** (1.41)					0.07 (.04)
	-.02 (.13)	**.47** (.10)				.36 (.31)							0.26 (.04)
	.02 (.11)	**.72** (.12)						**-4.19** (2.04)					0.28 (.04)
	.25 (.17)	**.43** (.12)				-.70 (.57)	-1.47 (.84)		**-1.91** (.88)	.00 (.00)		.77 (1.01)	0.35 (.04)
	.09 (.19)	**.44** (.13)				-1.00 (.92)	-.00 (.00)		**-2.26** (.81)	.00 (.00)		-.08 (.86)	0.34 (.04)
	-.02 (.15)	**.42** (.12)				-.02 (.33)					**-1.73** (.64)	1.12 (.77)	0.30 (.04)
	-.04 (.14)	**.42** (.13)				-.61 (.89)	-.00 (.00)					.47 (.76)	0.27 (.04)


Retail
0.48
0.5
0.46
0.62
0.35
0.5
0.62
0.44
0.42
0.5
0.55
0.44
0.61
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Apartment
-0.14
-0.12
-0.25
-0.16
-0.06
-0.07
0.05
-0.09
-0.04
-0.02
0.02
-0.03
0.03
-0.3
-0.25
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
-0.06
0.03
-0.05
0.08
-0.03
-0.01
0.19
0.14
-0.04
0.03
0.08
-0.01
0.27
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

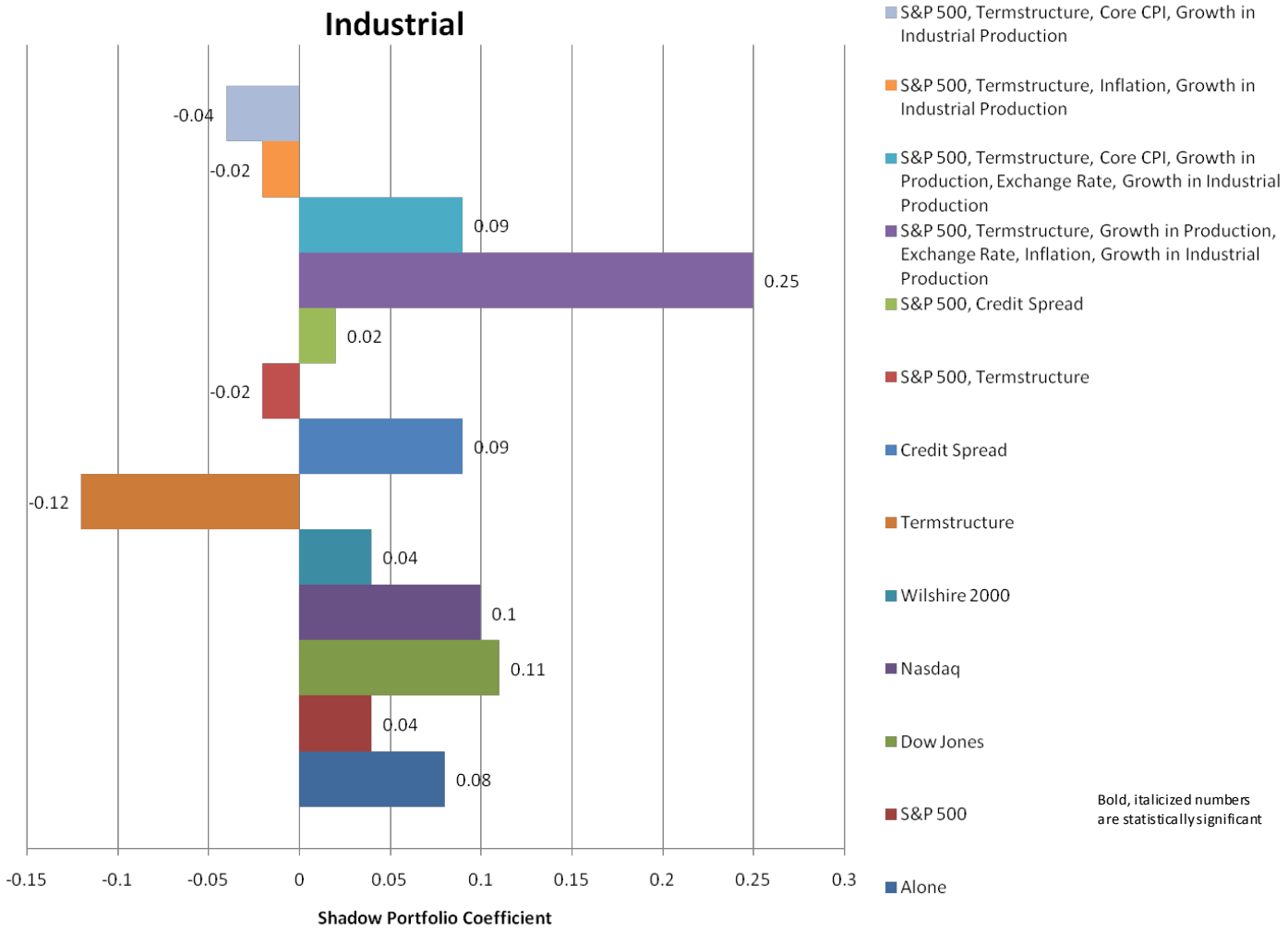

Industrial
-0.04
-0.02
0.09
0.25
0.02
-0.02
0.09
-0.12
0.04
0.1
0.11
0.04
0.08
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 2. Weighting is based on purchase price inflated by the CPPI index.
Dependent variable : Dependent variable: Unlevered REIT Return – SP500 Return.

2.1 Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.02 (.12)												.00 (.06)
	.06 (.10)												0.00 (.07)
	.23 (.10)	**-.53** (.08)											0.12 (.06)
	.23 (.09)		**-.66** (.08)										0.18 (.06)
	.13 (.10)			**-.22** (.05)									0.06 (.06)
	.22 (.10)				**-.46** (.07)								0.11 (.06)
	.05 (.14)					.02 (.38)							0.00 (.07)
	.04 (.10)							1.29 (.81)					0.01 (.07)
	.04 (.13)	**-.57** (.08)				.73 (.36)							0.13 (.06)
	.21 (.10)	**-.54** (.07)						**1.76** (.76)					0.14 (.06)
	.02 (.14)	**-.56** (.10)				-.02 (.53)			**-2.14** (.67)	**.00** (.00)	**-1.90** (.77)	.57 (.84)	0.2 (.06)
	-.15 (.15)	**.65** (.10)				**-2.46** (.83)	**-.013** (.00)		**-3.00** (.61)	.00 (.00)		-1.00 (.73)	0.23 (.06)
	.03 (.14)	**-.73** (.09)				.17 (.39)					**-2.68** (.72)	.60 (.75)	0.17 (.06)
	.11 (.14)	**-.65** (.09)				-.65 (.09)	**-.01** (.00)					-.05 (.69)	0.17 (.06)

2.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	Shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.28 (.22)												0.01 (.13)
	-.16 (.19)												0.00 (.12)
	-.12 (.19)	-.28 (.18)											0.01 (.12)
	-.13 (.19)		**-.45** (.19)										0.03 (.12)
	-.11 (.19)			-.16 (.12)									0.01 (.12)
	-.11 (.19)				-.27 (.17)								0.02 (.12)
	-.15 (.22)					-.06 (.77)							0.00 (.12)
	-.17 (.19)							.58 (1.93)					0.00 (.12)
	-.17 (.22)	-.31 (.20)				.38 (.82)							0.02 (.12)
	-.12 (.19)	-.29 (.19)						.93 (1.94)					0.02 (.12)
	.02 (.26)	.00 (.28)				.39 (1.34)			-2.77 (1.80)	.00 (.00)	4.01 (2.06)	-1.86 (2.30)	0.04 (.12)
	-.08 (.29)	-.34 (.31)				-2.07 (2.25)	-.01 (.01)		-1.30 (1.69)	.00 (.01)		-.37 (2.17)	0.03 (.12)
	-.19 (.22)	-.23 (.24)				1.11 (.93)					3.03 (1.89)	-2.05 (1.87)	0.03 (.12)
	-.14 (.23)	-.40 (.23)				-2.01 (2.05)	-.01 (.01)					-.27 (1.80)	0.02 (.12)

2.3 Office Sector

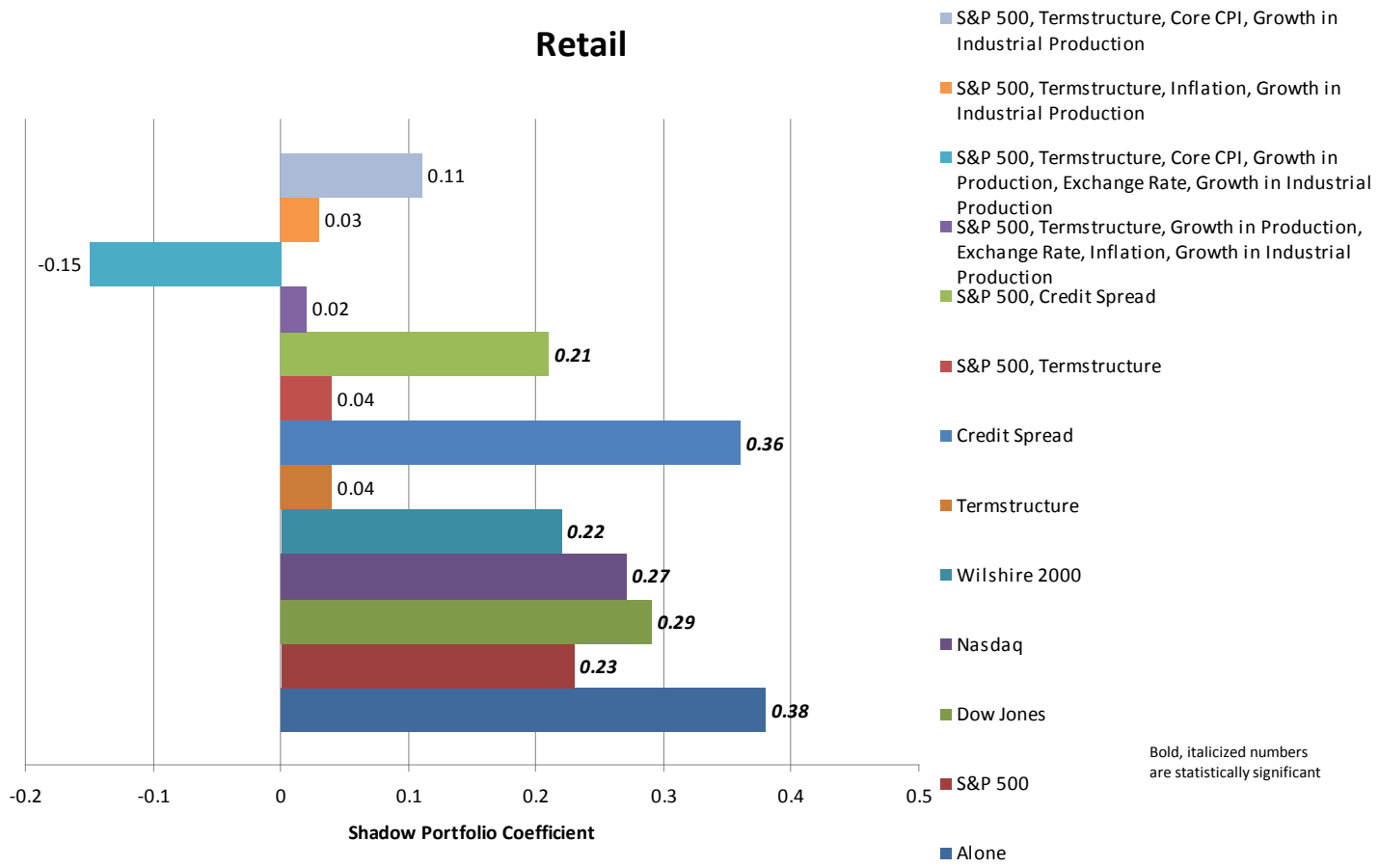
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

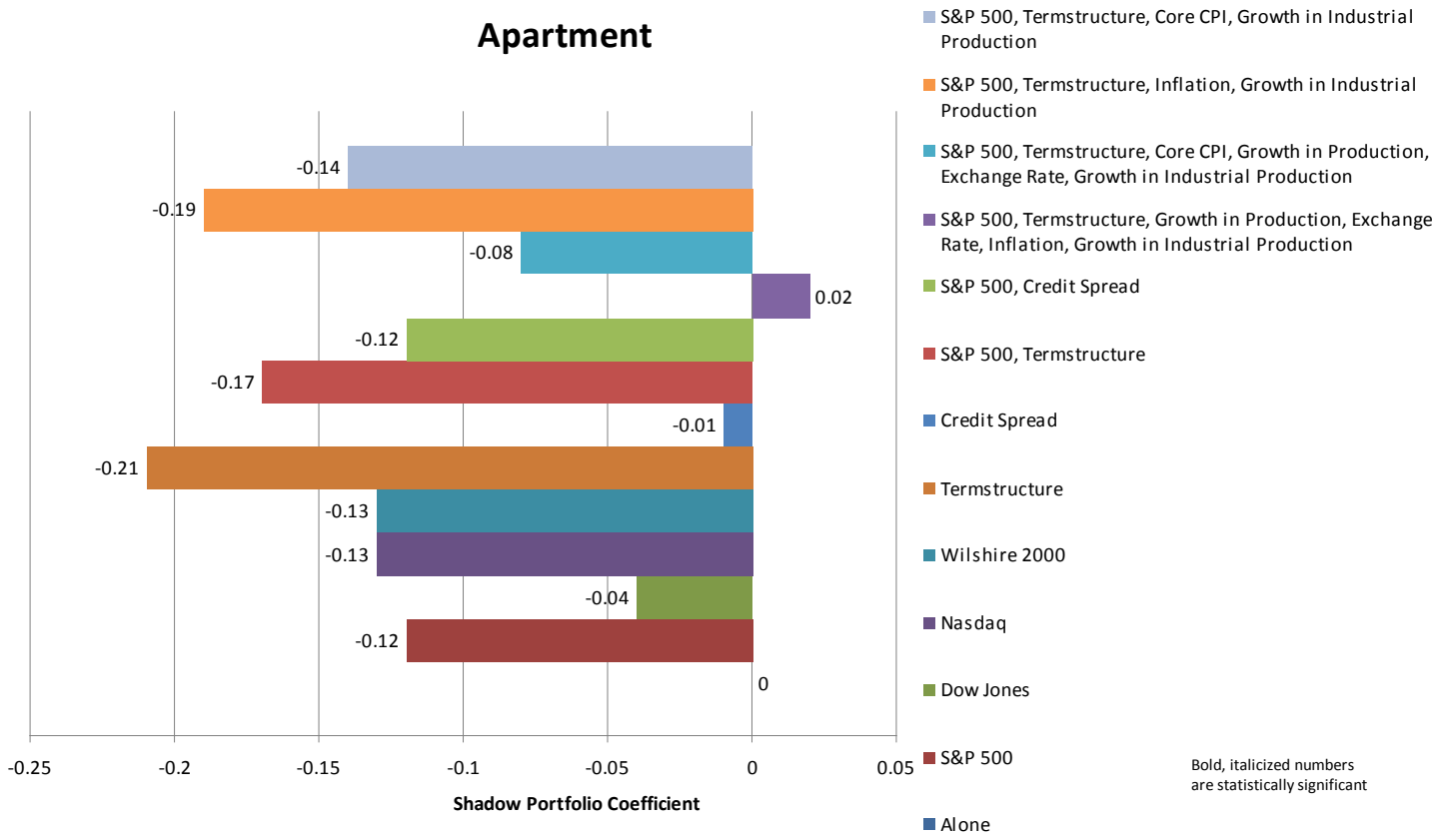
LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.14 (.10)												0.001 (.05)
	.11 (.09)												0.00 (.05)
	.21 (.08)	**-.47** (.05)											0.20 (.04)
	.19 (.08)		**-.55** (.05)										0.25 (.04)
	.24 (.08)			**-.25** (.03)									0.15 (.04)
	.22 (.08)				**-.42** (.05)								0.19 (.04)
	.21 (.10)					**-.55** (.22)							0.03 (.05)
	.10 (.09)							.40 (.60)					0.01 (.05)
	.21 (.09)	**-.47** (.06)				.03 (.21)							0.20 (.04)
	.20 (.08)	**-.47** (.05)						.80 (.54)					0.21 (.04)
	.22 (.08)	**-.43** (.07)				**-.61** (.30)			**-1.17** (.48)	**.00** (.00)	-1.01 (.57)	.60 (.61)	0.26 (.04)
	.18 (.09)	**-.46** (.07)				**-1.60** (.61)	**-.01** (.00)		**-1.51** (.44)	.00 (.00)		-.15 (.54)	0.26 (.04)
	.23 (.09)	**-.55** (.07)				-.30 (.24)					**-1.38** (.53)	.29 (.53)	0.22 (.04)
	.17 (.09)	**-.51** (.06)				**-1.58** (.53)	**-.01** (.00)					.12 (.49)	0.23 (.04)

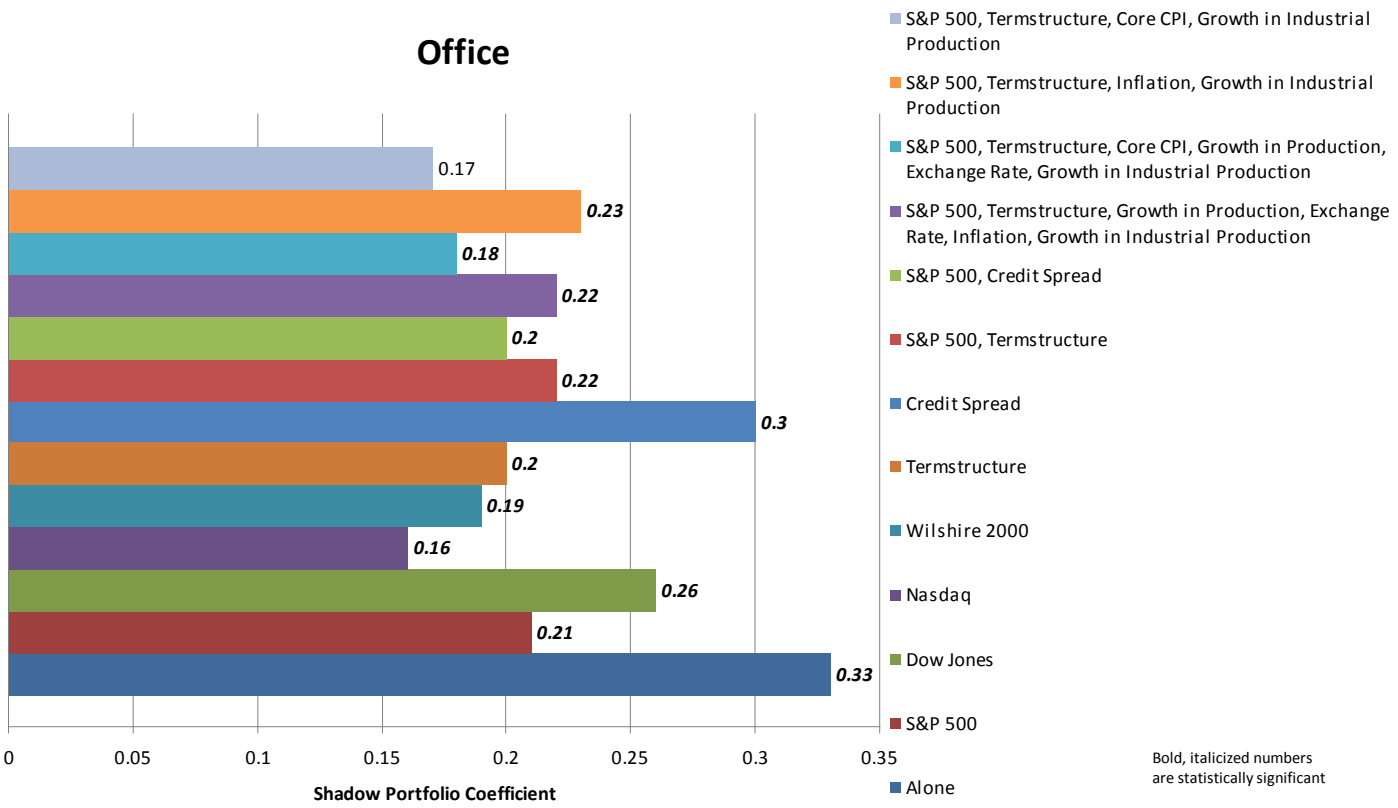
2.4 Industrial Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.10 (.14)												0.00 (.04)
	.04 (.14)												0.00 (.05)
	.22 (.12)	**-.62** (.09)											0.33 (.04)
	.18 (.11)		**-.69** (.09)										0.39 (.04)
	.11 (.13)			**-.29** (.06)									0.20 (.04)
	.22 (.12)				**-.55** (.08)								0.31 (.04)
	.10 (.18)					-.26 (.43)							0.00 (.05)
	.05 (.14)							1.09 (1.05)					0.01 (.05)
	.13 (.14)	**-.64** (.09)				.46 (.36)							0.34 (.04)
	.24 (.12)	**-.63** (.09)						**1.73** (.86)					0.36 (.04)
	.51 (.17)	**-.63** (.11)				**-1.60** (.64)			-1.18 (.75)	**.01** (.00)	**-2.40** (.91)	1.61 (.94)	0.49 (.04)
	.31 (.16)	**-.57** (.12)				-1.59 (.95)	-.00 (.00)		**-2.08** (.69)	.00 (.00)		.09 (.84)	0.46 (.04)
	.22 (.15)	**-.78** (.11)				-.13 (.42)					**-2.14** (.84)	.37 (.83)	0.39 (.04)
	.27 (.15)	**-.72** (.10)				**-2.06** (.94)	**-.01** (.00)					.01 (.78)	0.40 (.04)


Retail
0.11
0.03
-0.15
0.02
0.21
0.04
0.36
0.04
0.22
0.27
0.29
0.23
0.38
-0.2
-0.1
0
0.1
0.2
0.3
0.4
0.5
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Apartment
-0.14
-0.19
-0.08
0.02
-0.12
-0.17
-0.01
-0.21
-0.13
-0.13
-0.04
-0.12
0
-0.25
-0.2
-0.15
-0.1
-0.05
0
0.05
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
0.17
0.23
0.18
0.22
0.2
0.22
0.3
0.2
0.19
0.16
0.26
0.21
0.33
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

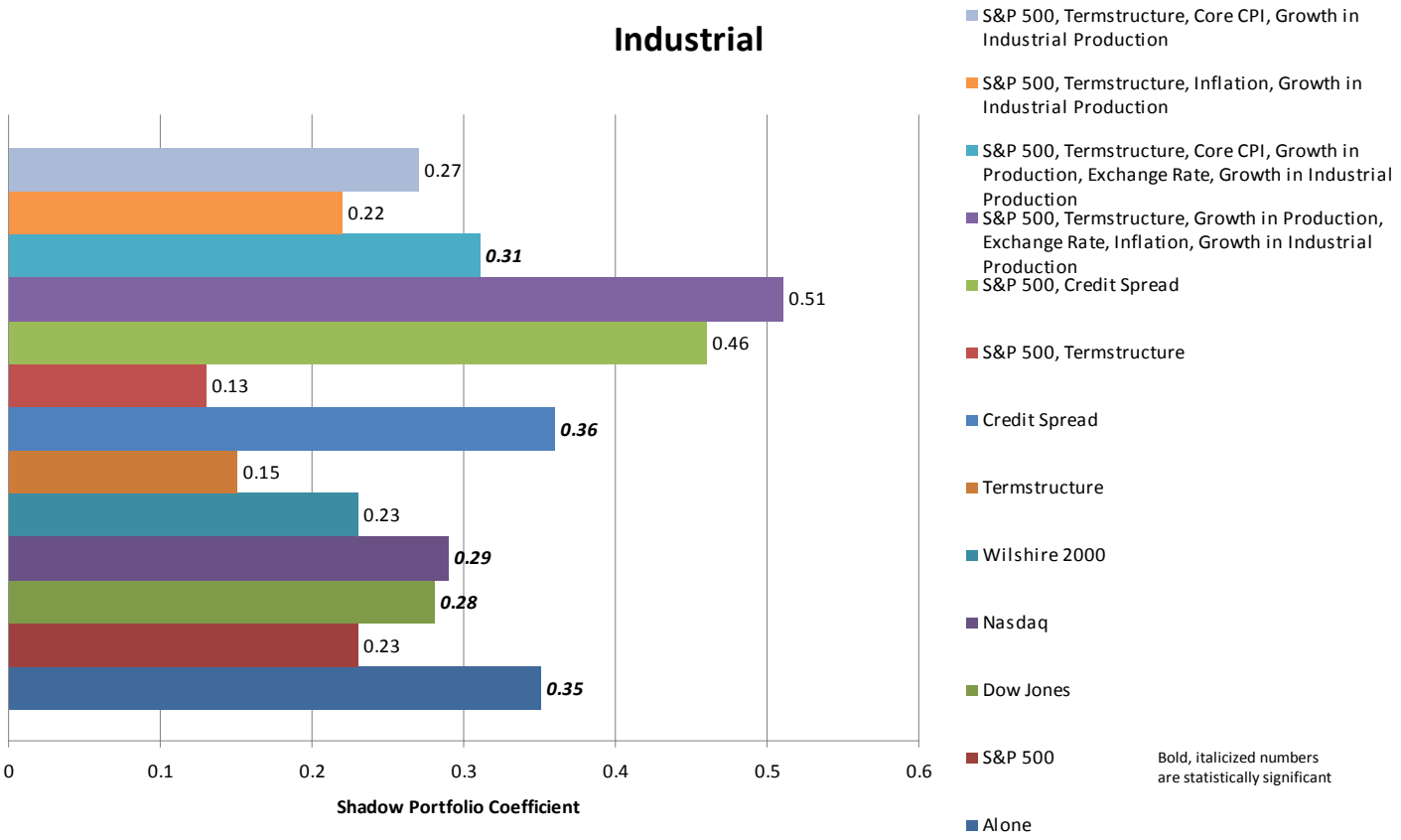

Industrial
0.27
0.22
0.31
0.51
0.46
0.13
0.36
0.15
0.23
0.29
0.28
0.23
0.35
0
0.1
0.2
0.3
0.4
0.5
0.6
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 3. Weighting is based on purchase price inflated by the CPPI index.
Dependent variable: LOG(NAV(t)) - LOG(NAV(t-1)).

3.1 Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.55 (.40)												0.01 (.19)
	.49 (.30)												0.01 (.19)
	.52 (.31)	-.11 (.25)											0.01 (.19)
	.51 (.31)		-.07 (.26)										0.01 (.19)
	.46 (.30)			.10 (.15)									0.01 (.19)
	.52 (.31)				-.09 (.23)								0.01 (.19)
	.31 (.44)					.66 (1.19)							0.01 (.19)
	.47 (.30)							1.47 (2.89)					0.01 (.19)
	.28 (.45)	-.18 (.26)				.96 (1.26)							0.01 (.19)
	.50 (.31)	-.15 (.26)						1.92 (2.99)					0.01 (.19)
	.49 (.49)	-.26 (.35)				.24 (1.78)			-2.35 (2.28)	.01 (.00)	1.42 (2.60)	-4.01 (2.83)	0.03 (.19)
	.74 (.51)	-.05 (.36)				3.78 (2.86)	.02 (.01)		-1.47 (2.11)	**.01** (.01)		-2.40 (2.49)	0.04 (.19)
	.48 (.46)	-.43 (.33)				.84 (1.33)					.80 (2.38)	-4.41 (2.48)	0.02 (.19)
	.46 (.46)	-.44 (.32)				1.50 (2.67)	.00 (.01)					-4.18 (2.28)	0.02 (.19)

3.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.06 (.34)												0.00 (.18)
	-.15 (.29)												0.00 (.18)
	-.20 (.29)	.33 (.31)											0.01 (.18)
	-.18 (.29)		.39 (.33)										0.01 (.18)
	-.21 (.30)			.19 (.19)									0.01 (.18)
	-.21 (.30)				.30 (.29)								0.01 (.18)
	.06 (.35)					-1.30 (1.25)							0.01 (.18)
	.01 (.28)							**-16.62** (4.16)					0.09 (.17)
	.13 (.36)	.58 (.35)				-2.31 (1.39)							0.02 (.18)
	-.12 (.27)	**1.29** (.34)						**-25.88** (4.68)					0.16 (.17)
	.01 (.42)	.67 (.47)				-1.13 (2.18)			-.49 (2.84)	-.01 (.01)	.04 (3.29)	-.27 (3.65)	0.03 (.18)
	.30 (.45)	**1.27** (.54)				4.71 (3.80)	.03 (.02)		-.87 (2.66)	.00 (.01)		1.58 (3.39)	0.05 (.18)
	.16 (.36)	.65 (.45)				-2.62 (1.57)					-.82 (3.02)	1.67 (3.09)	0.03 (.18)
	.15 (.36)	**1.13** (.47)				4.21 (3.55)	**.02** (.01)					.82 (2.85)	0.05 (.18)

3.3 Office Sector

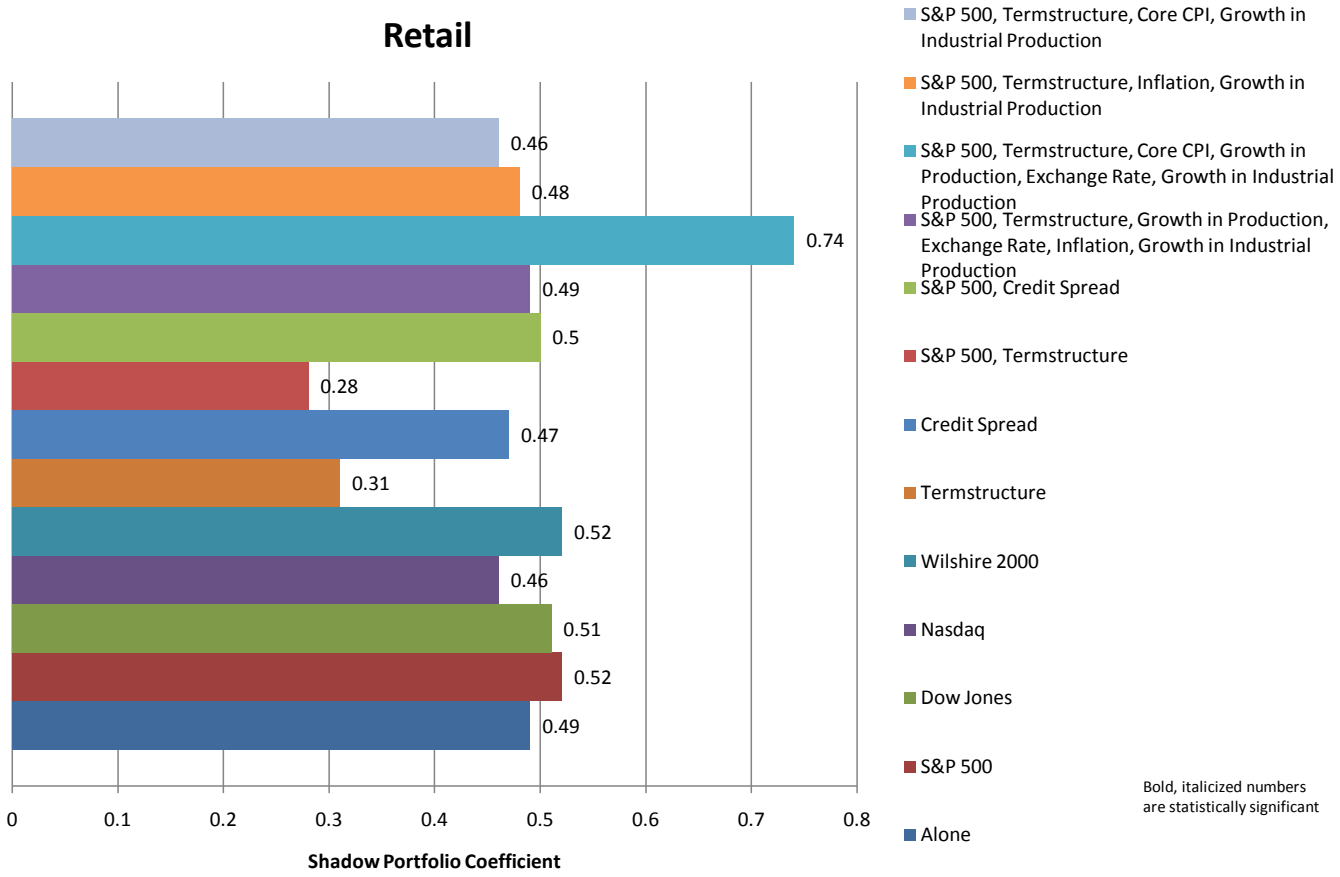
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

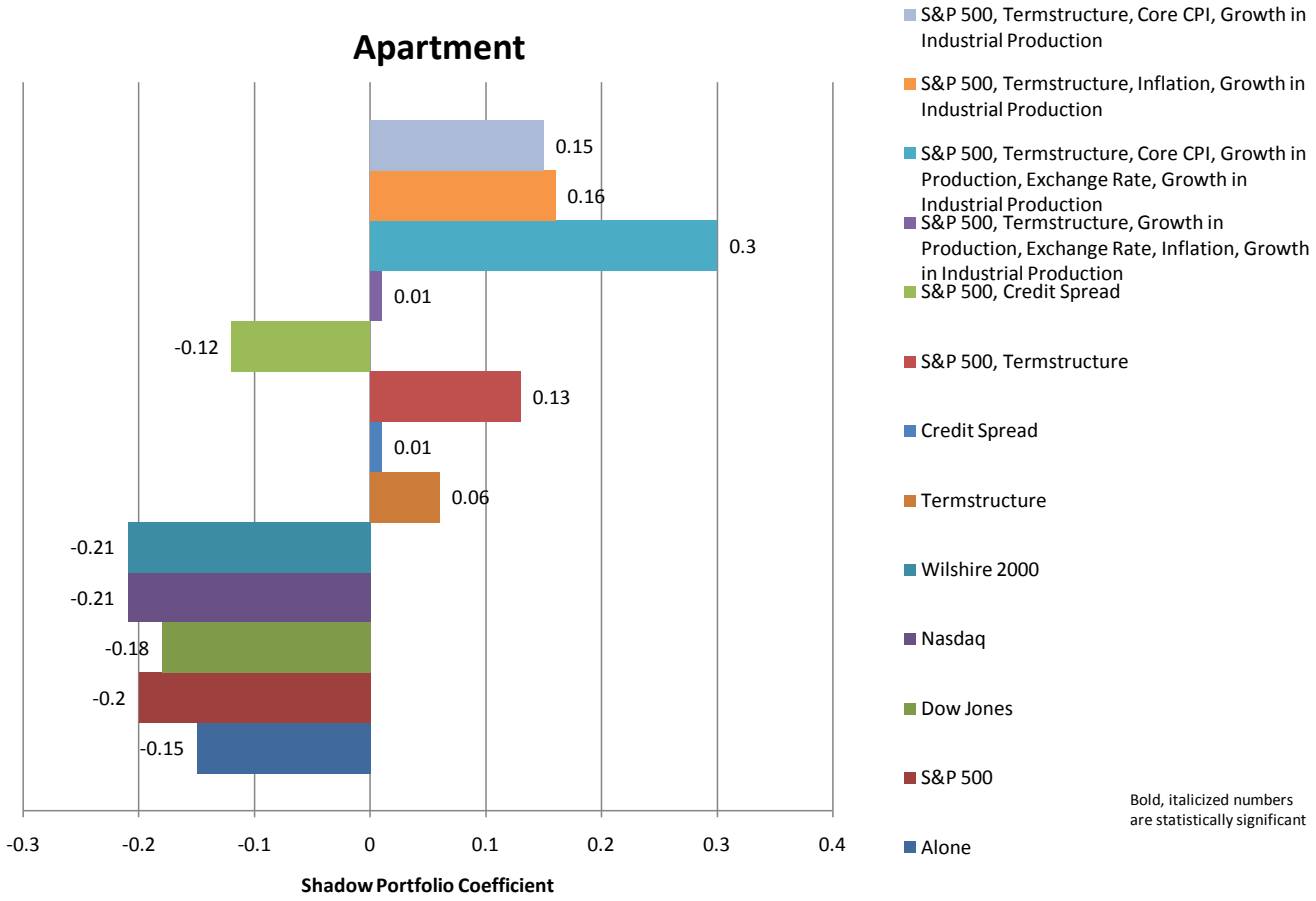
LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Term srtr	CPILFE	Cred Spr	gProd	Exch Rate	Inflation	Gprod Ind	R-Squared Statistic
Regression Coefficient (Standard Error)	.18 (.31)												0.00 (.14)
	-.14 (.28)												0.00 (.14)
	-.16 (.28)	.09 (.20)											0.00 (.14)
	-.17 (.28)		.16 (.21)										0.00 (.14)
	-.13 (.28)			-.02 (.12)									0.00 (.14)
	-.16 (.28)				.07 (.18)								0.00 (.14)
	.09 (.30)					-1.33 (.72)							0.01 (.14)
	.08 (.27)							**-11.31** (2.42)					0.08 (.13)
	.11 (.30)	.28 (.21)				**-1.76** (.78)							0.02 (.14)
	.03 (.27)	**.54** (.20)						**-14.15** (2.62)					0.11 (.13)
	.17 (.30)	.52 (.28)				.56 (1.10)			-.97 (1.69)	**-.01** (.00)	2.88 (2.04)	-2.20 (2.21)	0.07 (.13)
	.31 (.30)	**.64** (.30)				3.40 (2.25)	.015 (.01)		.08 (1.56)	-.00 (.00)		-.08 (1.99)	0.07 (.13)
	.10 (.30)	.49 (.27)				-1.50 (.91)					1.45 (1.89)	1.27 (1.92)	0.03 (.14)
	.32 (.30)	**.78** (.27)				**4.56** (2.05)	**.02** (.01)					.99 (1.77)	0.07 (.13)

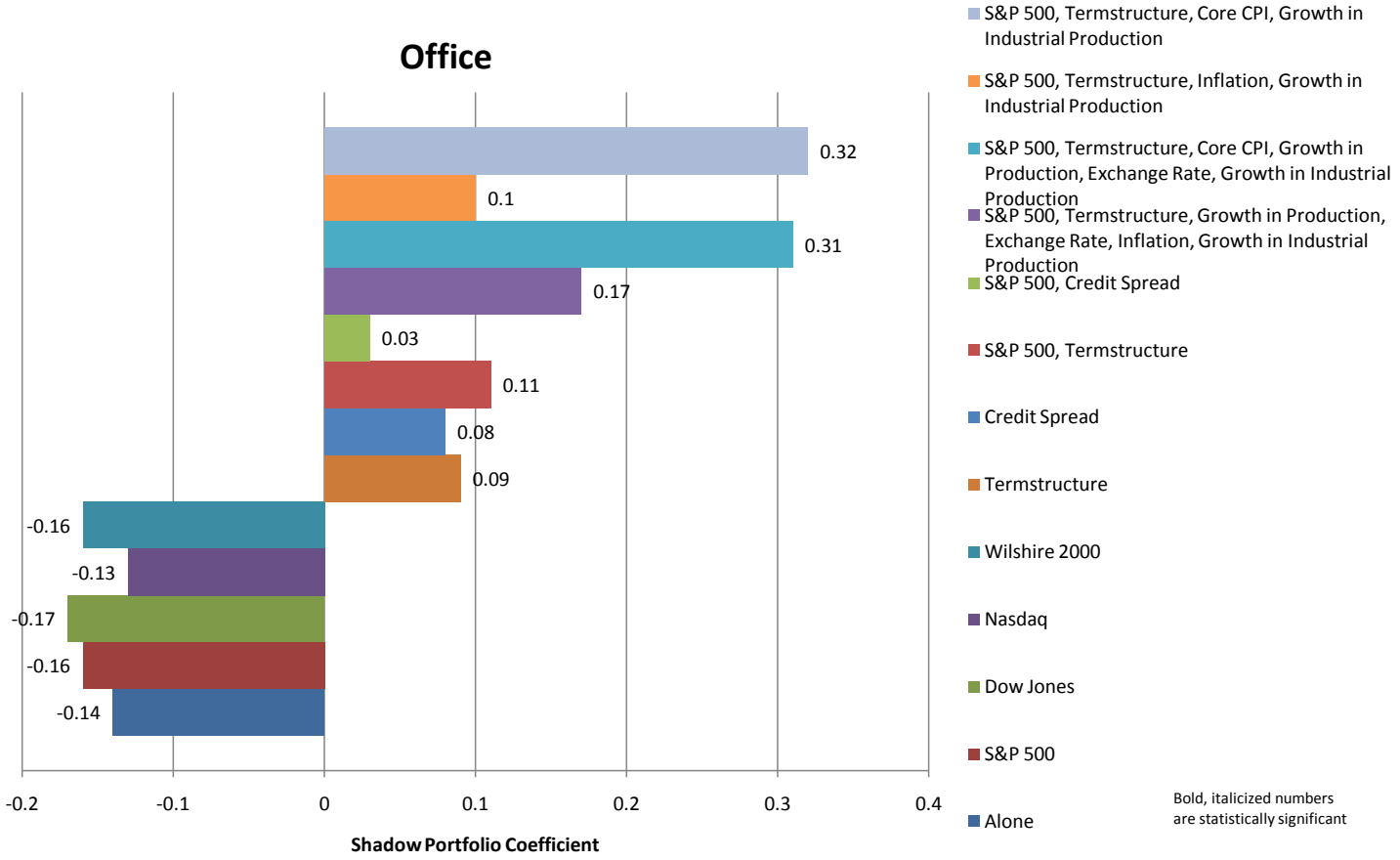
3.4 Industrial Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.23 (.28)												0.01 (.07)
	.32 (.23)												0.02 (.07)
	.32 (.23)	-.03 (.17)											0.02 (.07)
	.31 (.23)		.05 (.18)										0.02 (.07)
	.33 (.23)			-.06 (.10)									0.03 (.07)
	.33 (.23)				-.05 (.16)								0.02 (.07)
	.11 (.28)					.84 (.71)							0.04 (.07)
	.30 (.23)							1.81 (2.11)					0.03 (.07)
	.09 (.29)	-.12 (.19)				1.03 (.77)							0.04 (.07)
	.32 (.23)	-.09 (.19)						2.22 (2.27)					0.03 (.07)
	.19 (.36)	-.10 (.25)				.23 (1.39)			-.56 (1.61)	.00 (.00)	-1.87 (1.97)	2.00 (2.07)	0.07 (.07)
	.10 (.34)	.08 (.27)				2.01 (2.06)	.00 (.01)		-1.17 (1.45)	.00 (.00)		1.17 (1.81)	0.07 (.07)
	.13 (.30)	-.13 (.23)				.52 (.89)					-1.92 (1.68)	1.80 (1.69)	0.07 (.07)
	.05 (.30)	-.01 (.24)				1.73 (1.97)	.00 (.01)					1.01 (1.59)	0.05 (.07)


Retail
0.46
0.48
0.74
0.49
0.5
0.28
0.47
0.31
0.52
0.46
0.51
0.52
0.49
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Apartment
0.15
0.16
0.3
0.01
-0.12
0.13
0.01
0.06
-0.21
-0.21
-0.18
-0.2
-0.15
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
0.4
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
0.32
0.1
0.31
0.17
0.03
0.11
0.08
0.09
-0.16
-0.13
-0.17
-0.16
-0.14
-0.2
-0.1
0
0.1
0.2
0.3
0.4
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

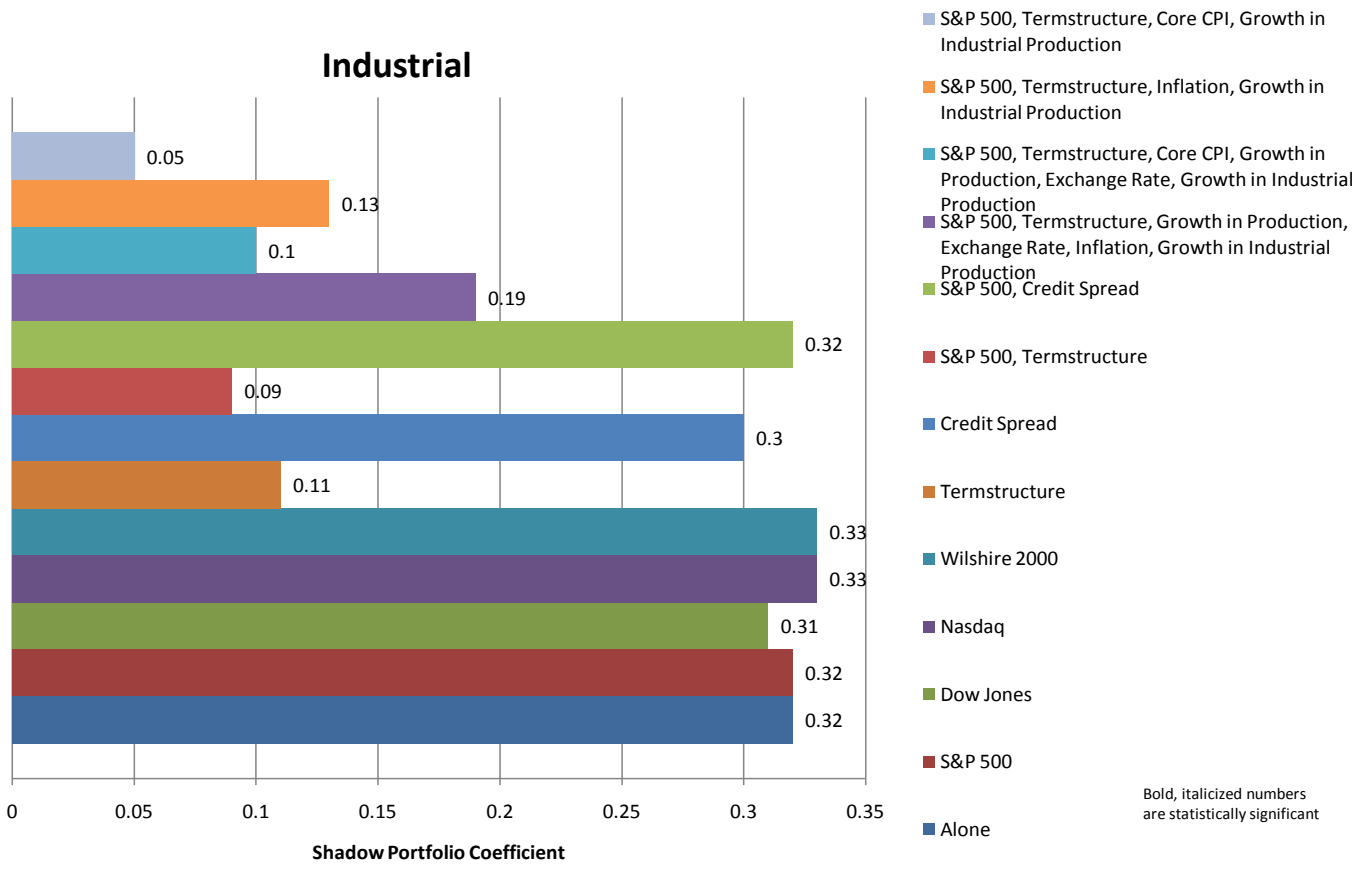

Industrial
0.05
0.13
0.1
0.19
0.32
0.09
0.3
0.11
0.33
0.33
0.31
0.32
0.32
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 4. Weighting is based on square footage (# units for apps) times average price psf (per unit for apps), Dependant variable: Unlevered REIT Return – Risk-free Rate

4.1 Retail Sector

Note: The first term of this regression is not LR_r_f and shadportet_r_f, but just LR and shadportet.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.04 (.12)												0.00 (.06)
	.41 (.10)												0.05 (.06)
	.25 (.10)	**.47** (.08)											0.14 (.06)
	.32 (.10)		**.34** (.08)										0.09 (.06)
	.28 (.10)			**.33** (.04)									0.18 (.06)
	.24 (.10)				**.45** (.07)								0.15 (.06)
	.10 (.14)					**1.14** (.36)							0.07 (.06)
	.39 (10)							**2.12** (.79)					0.07 (.06)
	.08 (.13)	**.43** (.08)				.65 (.36)							0.15 (.06)
	.24 (.10)	**.45** (.08)						**1.74** (.76)					0.15 (.06)
	.05 (.14)	**.44** (.10)				-.09 (.52)			**-2.11** (.67)	**.00** (.00)	**-1.90** (.77)	.57 (.84)	0.22 (.06)
	-.10 (.14)	**.35** (.10)				**-2.52** (.83)	**-.01** (.00)		**-2.95** (.61)	.00 (.00)		-1.04 (.73)	0.24 (.06)
	.05 (.13)	**.27** (.09)				.13 (.38)					**-2.66** (.72)	.57 (.74)	0.18 (.06)
	.16 (.13)	**.35** (.09)				**-2.13** (.79)	**-.01** (.00)					-.06 (.68)	0.19 (.06)

4.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.35 (.25)												0.01 (.13)
	-.07 (.22)												0.00 (.13)
	-.18 (.21)	**.73** (.20)											0.07 (.13)
	-.11 (.21)		**.57** (.21)										0.04 (.13)
	-.19 (.21)			**.42** (.13)									0.05 (.13)
	-.19 (.21)				**.67** (.19)								0.06 (.13)
	-.28 (.25)					1.33 (.87)							0.01 (.13)
	-.08 (.22)							1.75 (2.17)					0.00 (.13)
	-.22 (.25)	**.70** (.21)				.31 (.90)							0.07 (.13)
	-.18 (.21)	**.72** (.20)						.88 (2.12)					0.07 (.13)
	-.02 (.30)	**1.04** (.31)				.26 (1.48)			-2.72 (1.97)	.00 (.00)	4.05 (2.28)	-1.55 (2.52)	0.09 (.13)
	-.13 (.32)	**.68** (.34)				-2.38 (2.46)	-.01 (.01)		-1.21 (1.86)	.00 (.01)		.18 (2.40)	0.08 (.13)
	-.24 (.25)	**.80** (.27)				1.08 (1.03)					3.10 (2.09)	-1.90 (2.04)	0.08 (.13)
	-.18 (.25)	**.62** (.25)				-2.31 (2.25)	-.01 (.01)					-.07 (2.00)	0.08 (.13)

4.3 Office Sector

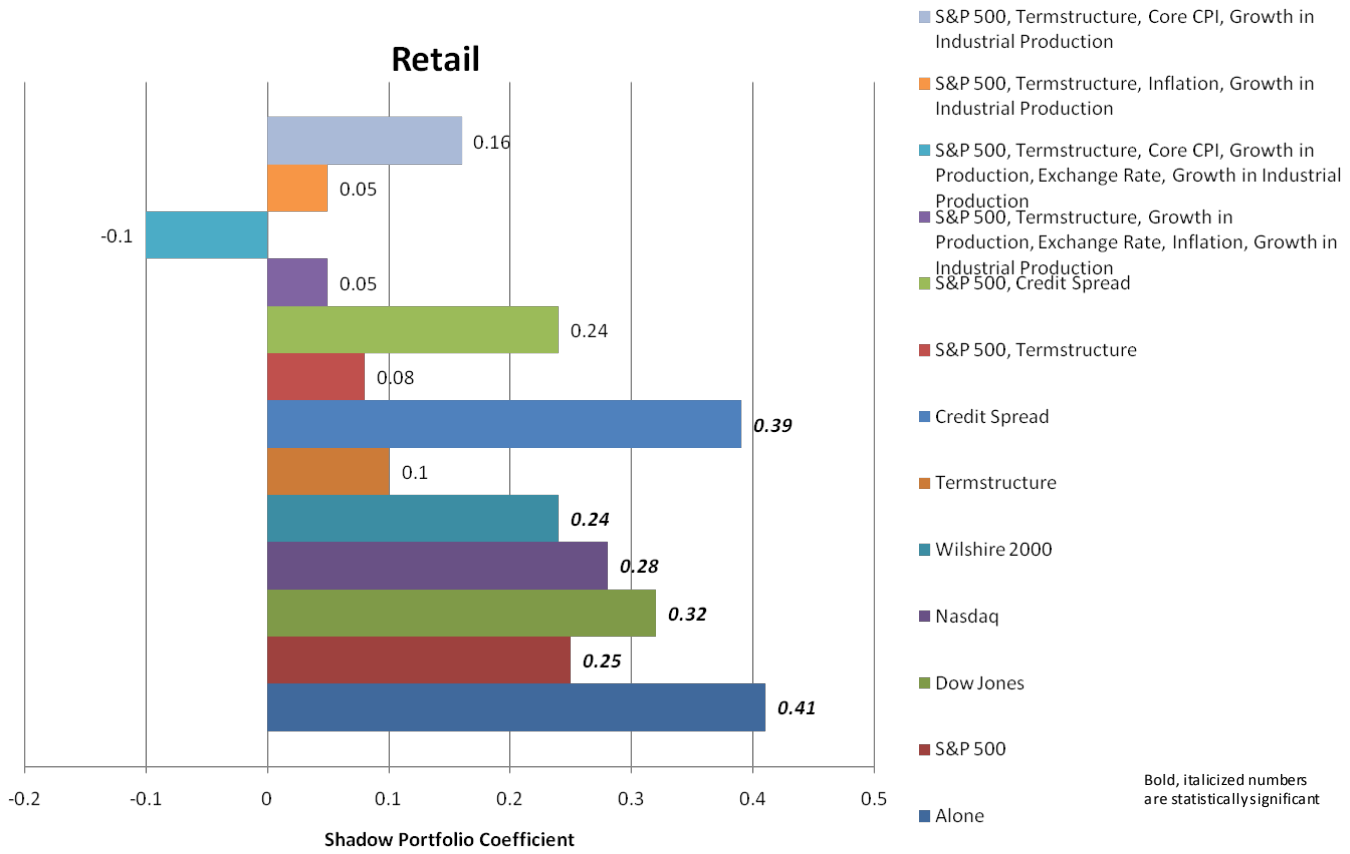
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

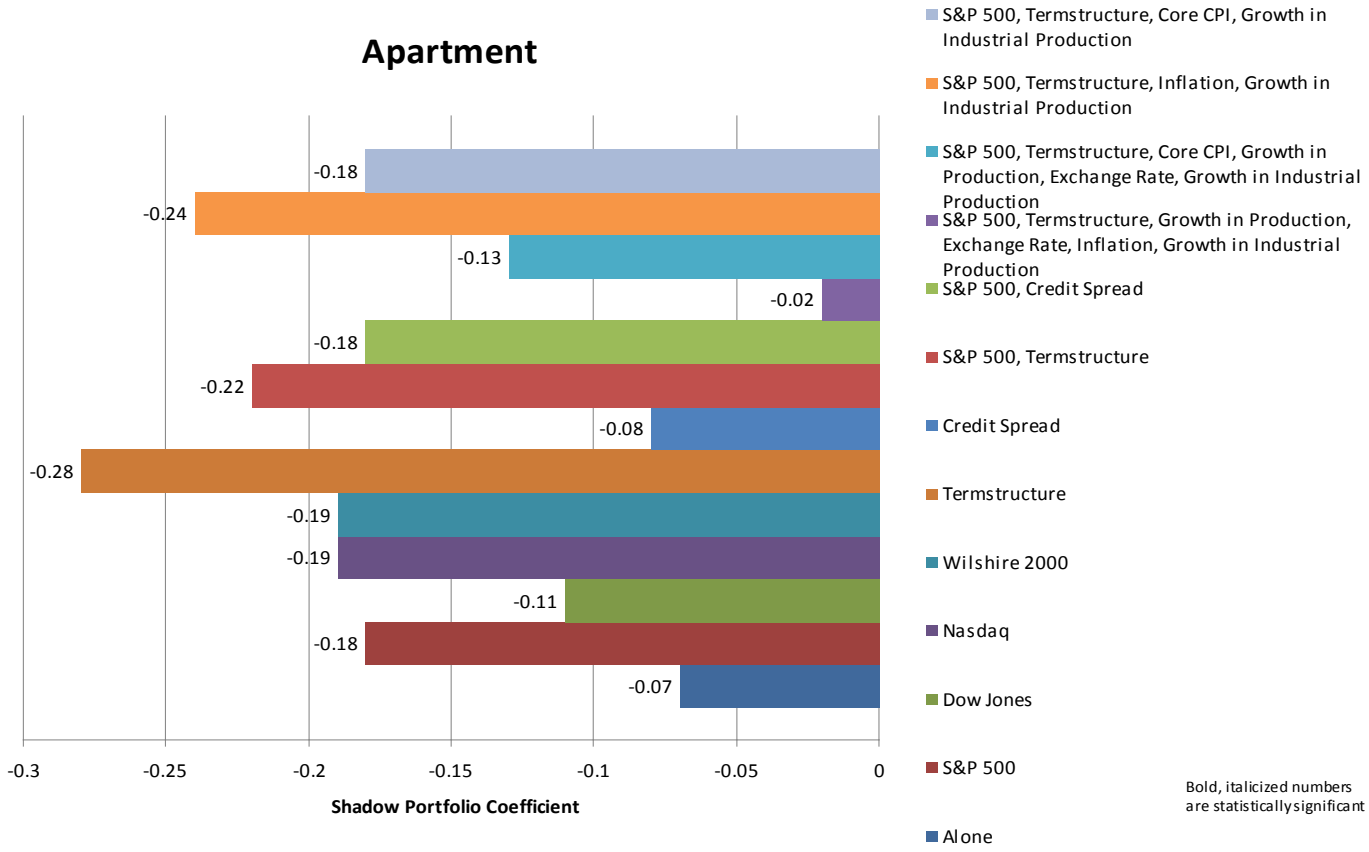
LR_r_f	Shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.14 (.10)												0.01 (.05)
	.33 (.09)												0.04 (.05)
	.21 (.08)	**.53** (.05)											0.28 (.04)
	.26 (.08)		**.46** (.06)										0.20 (.04)
	.16 (.08)			**.32** (.03)									0.26 (.04)
	.19 (.08)				**.51** (.05)								0.29 (.04)
	.20 (.10)					**.69** (.22)							0.07 (.05)
	.30 (.09)							**1.24** (.62)					0.05 (.05)
	.21 (.09)	**.53** (.06)				.03 (.21)							0.28 (.04)
	.19 (.08)	**.53** (.05)						.80 (.54)					0.28 (.04)
	.22 (.09)	**.57** (.07)				**-.62** (.30)			**-1.16** (.48)	**.00** (.00)	-1.01 (.57)	.59 (.61)	0.32 (.04)
	.17 (.09)	**.54** (.08)				**-1.60** (.61)	**-.01** (.00)		**-1.51** (.44)	.00 (.00)		-.153 (.54)	0.33 (.04)
	.23 (.09)	**.45** (.07)				-.30 (.24)					**-1.38** (.53)	.28 (.53)	0.29 (.04)
	.17 (.09)	**.49** (.06)				**-1.58** (.53)	**-.01** (.00)					.11 (.49)	0.30 (.04)

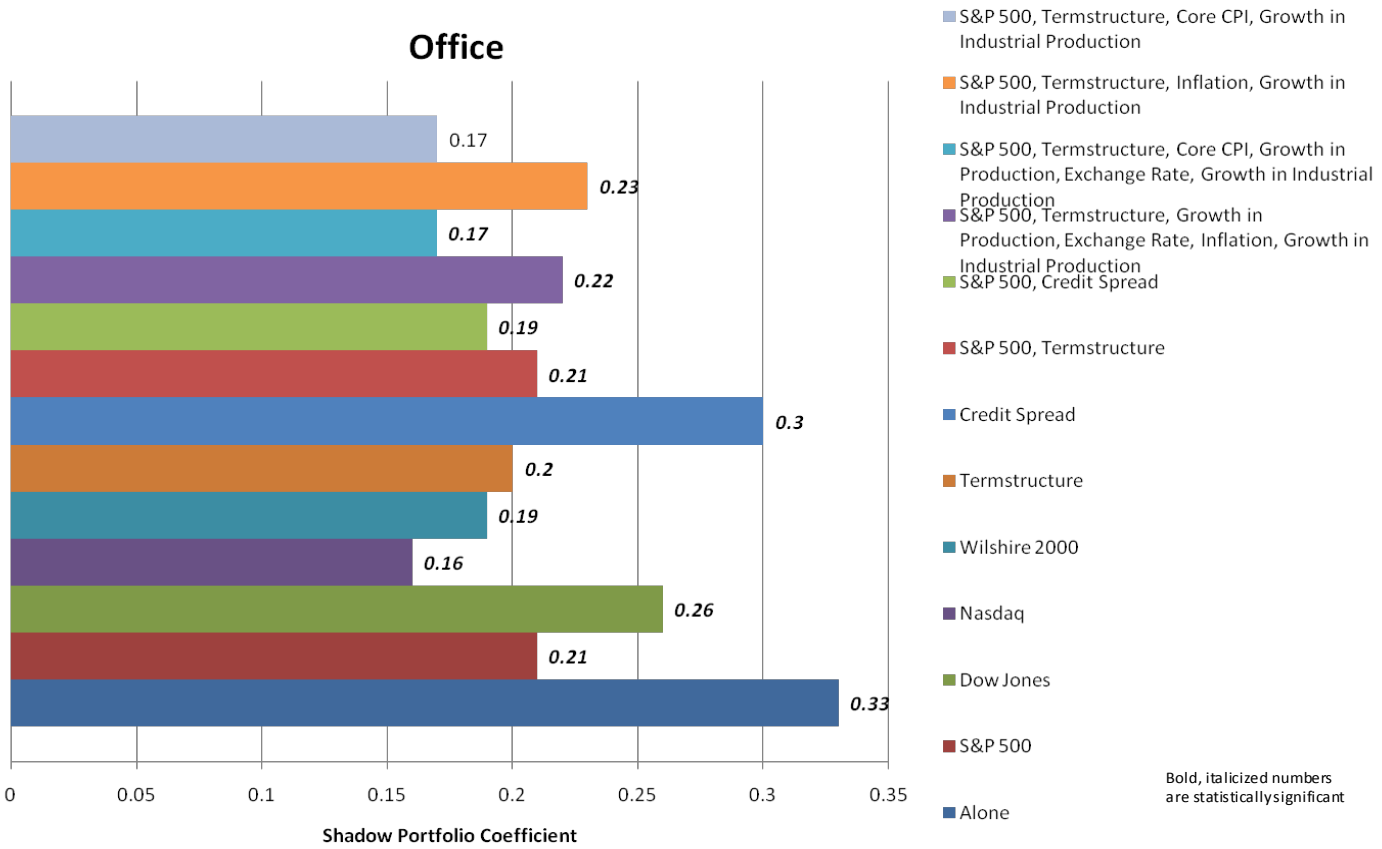
4.4 Industrial Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.11 (.14)												0.01 (.04)
	.36 (.12)												0.08 (.04)
	.22 (.12)	**.38** (.09)											0.22 (.04)
	.28 (.12)		**.31** (.09)										0.16 (.04)
	.26 (.11)			**.26** (.05)									0.26 (.04)
	.22 (.12)				**.36** (.08)								0.23 (.04)
	.17 (.15)					**.82** (.38)							0.12 (.04)
	.36 (.12)							**2.06** (.92)					0.12 (.04)
	.13 (.14)	**.35** (.09)				.47 (.37)							0.23 (.04)
	.23 (.12)	**.36** (.09)						**1.71** (.86)					0.25 (.04)
	.47 (.16)	**.36** (.11)				**-1.53** (.63)			-1.25 (.74)	**.01** (.00)	**-2.40** (.91)	1.61 (.95)	0.39 (.04)
	.27 (.15)	**.42** (.12)				-1.49 (.95)	.00 (.00)		**-2.13** (.69)	.00 (.00)		.09 (.84)	0.36 (.04)
	.22 (.14)	.22 (.11)				-.16 (.43)					**-2.19** (.85)	.42 (.83)	0.28 (.04)
	.23 (.14)	**.28** (.10)				-1.91 (.92)	**-.01** (.00)					.06 (.78)	0.29 (.04)


Retail
0.16
0.05
-0.1
0.05
0.24
0.08
0.39
0.1
0.24
0.28
0.32
0.25
0.41
-0.2
-0.1
0
0.1
0.2
0.3
0.4
0.5
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Apartment
-0.18
-0.24
-0.13
-0.02
-0.18
-0.22
-0.08
-0.28
-0.19
-0.19
-0.11
-0.18
-0.07
-0.3
-0.25
-0.2
-0.15
-0.1
-0.05
0
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
0.17
0.23
0.17
0.22
0.19
0.21
0.3
0.2
0.19
0.16
0.26
0.21
0.33
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

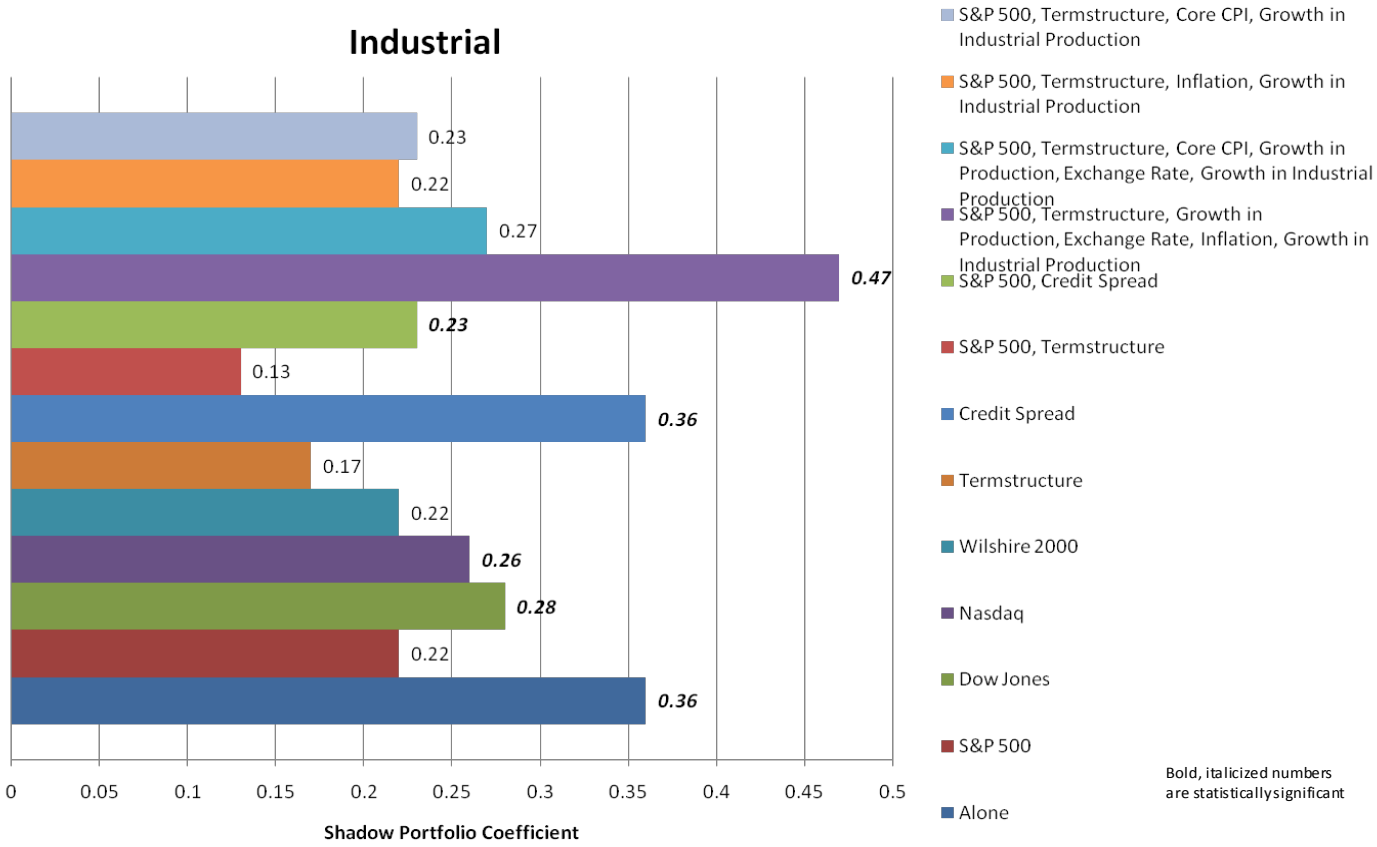

Industrial
0.23
0.22
0.27
0.47
0.23
0.13
0.36
0.17
0.22
0.26
0.28
0.22
0.36
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 5. Weighting is based on square footage (# units for apps) times average price psf (per unit for apps), Dependant Variable: Unlevered REIT Return - SP500

5.1 Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.04 (.12)												0.00 (.06)
	.06 (.01)												0.00 (.07)
	.25 (.10)	**-.53** (.08)											0.13 (.06)
	.25 (.09)		**-.67** (.01)										0.18 (.06)
	.15 (.10)			**-.22** (.05)									0.06 (.06)
	.24 (.10)				**-.47** (.07)								0.11 (.06)
	.06 (.14)					-.01 (.37)							0.00 (.07)
	.05 (.10)							1.28 (.81)					0.01 (.07)
	.08 (.13)	**-.57** (.08)				.65 (.36)							0.13 (.06)
	.24 (.10)	**-.55** (.08)						**1.74** (.76)					0.14 (.06)
	.05 (.14)	**-.56** (.10)				-.09 (.52)			**-2.11** (.67)	**.00** (.00)	**-1.90** (.77)	.57 (.84)	0.20 (.06)
	-.10 (.14)	**-.65** (.10)				**-2.52** (.83)	**-.01** (.00)		**-2.95** (.61)	.00 (.00)		-1.04 (.73)	0.23 (.06)
	.05 (.13)	**-.73** (.09)				.13 (.38)					**-2.66** (.72)	.57 (.74)	0.17 (.06)
	.16 (.13)	**-.65** (.09)				**-2.13** (.79)	**-.01** (.00)					-.06 (.68)	0.17 (.06)

5.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.35 (.25)												0.01 (.13)
	-.22 (.21)												0.01 (.13)
	-.18 (.21)	-.27 (.20)											0.02 (.13)
	-.19 (.21)		**-.44** (.21)										0.03 (.13)
	-.17 (.21)			-.15 (.13)									0.01 (.13)
	-.17 (.21)				-.26 (.19)								0.02 (.13)
	-.20 (.25)					-.11 (.85)							0.01 (.13)
	-.22 (.21)							.54 (2.11)					0.01 (.13)
	-.22 (.25)	-.30 (.21)				.31 (.90)							0.02 (.13)
	-.18 (.21)	-.28 (.20)						.88 (2.12)					0.02 (.13)
	-.02 (.30)	.04 (.31)				.26 (1.48)			-2.72 (1.97)	.00 (.00)	4.05 (2.28)	-1.55 (2.52)	0.04 (.13)
	-.13 (.32)	-.32 (.34)				-2.38 (2.46)	-.01 (.01)		-1.21 (1.86)	.00 (.01)		-.18 (2.40)	0.03 (.13)
	-.24 (.25)	-.20 (.27)				1.08 (1.03)					3.10 (2.09)	-1.90 2.04)	0.03 (.13)
	-.18 (.25)	-.38 (.25)				-2.31 (2.25)	-.01 (.01)					-.07 (2.00)	0.03 (.13)

5.3 Office Sector

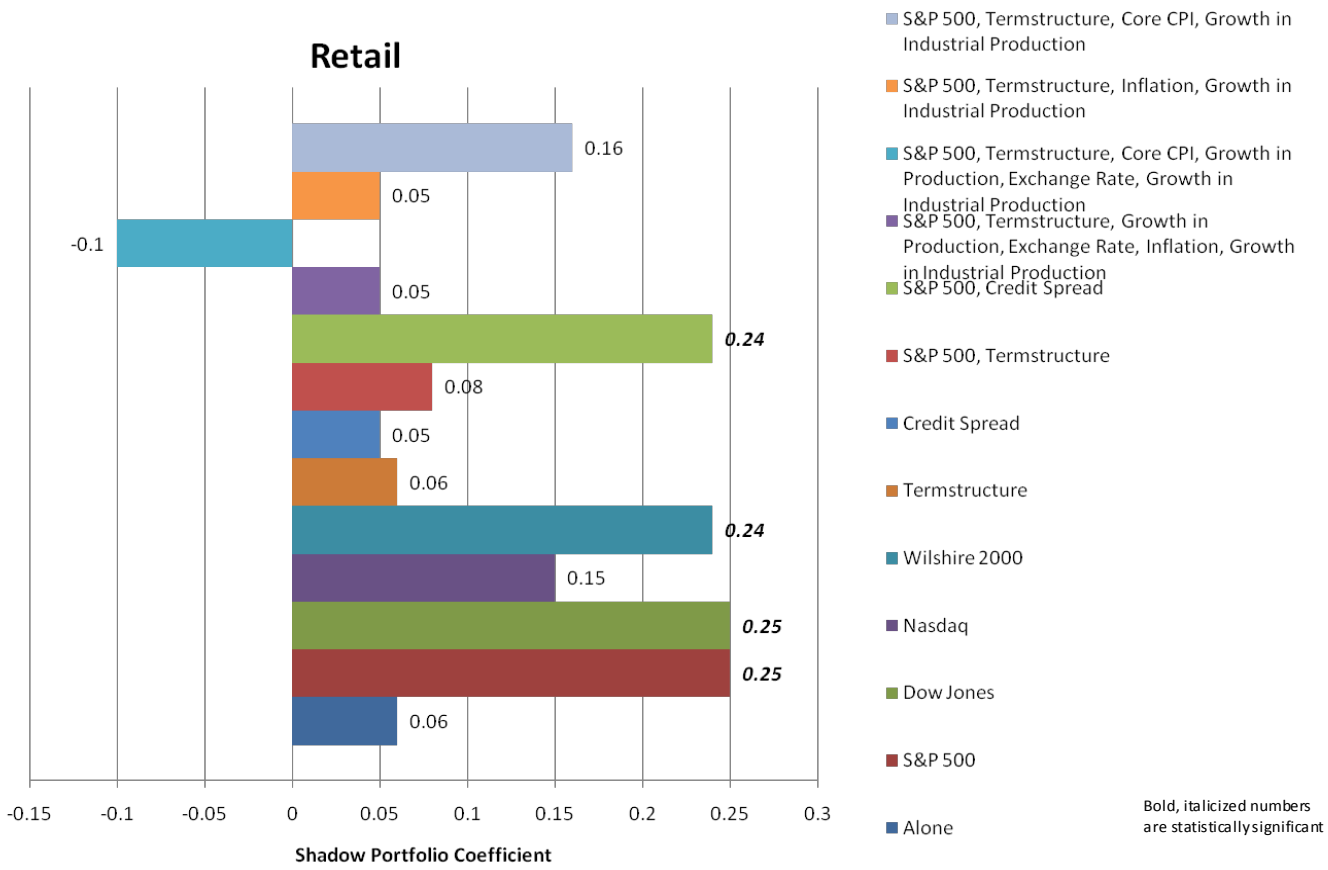
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

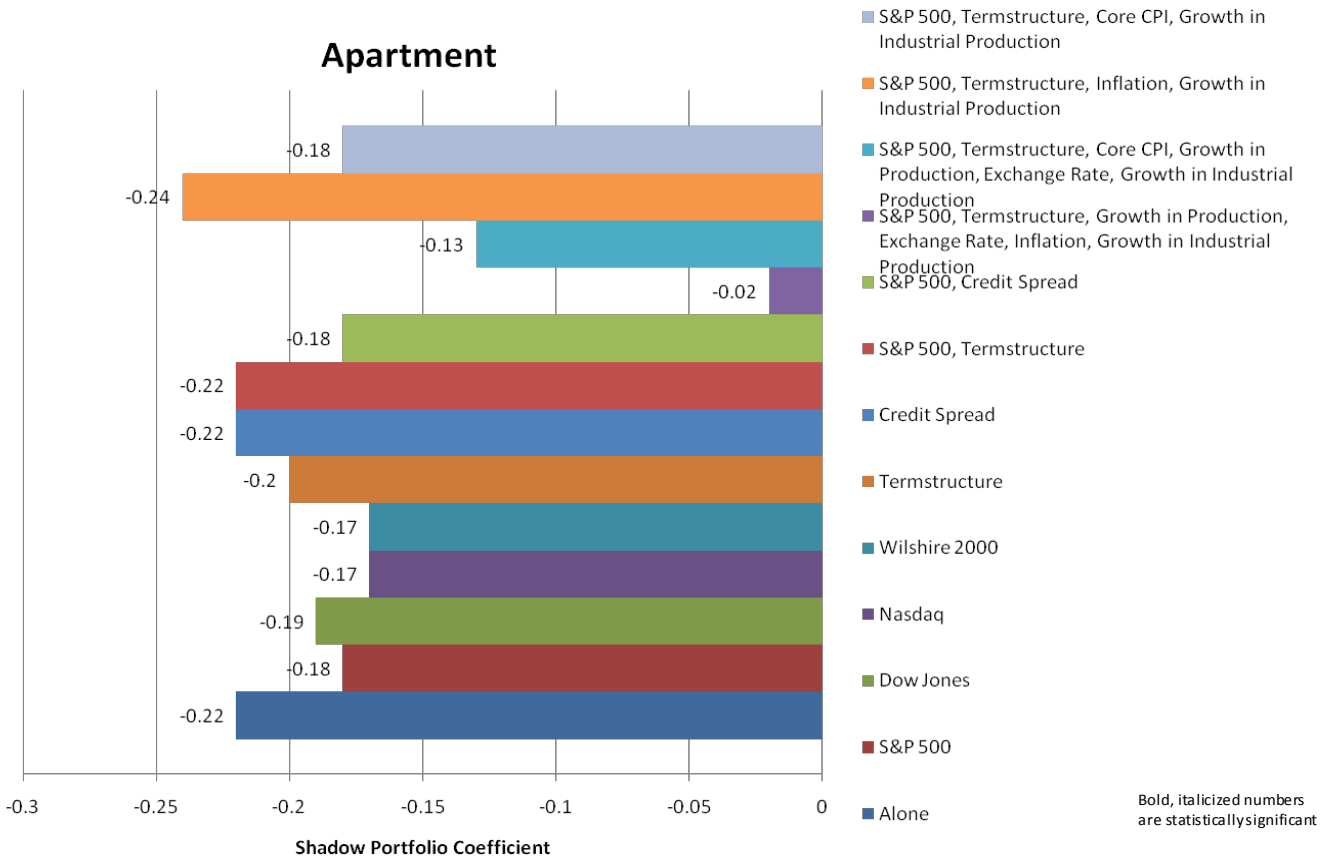
LR_r_f	Shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.14 (.10)												0.01 (.05)
	.10 (.09)												0.00 (.05)
	.21 (.08)	**-.47** (.05)											0.20 (.04)
	.19 (.08)		**-.55** (.05)										0.25 (.04)
	.24 (.08)			**-.25** (.03)									0.15 (.04)
	.22 (.08)				**-.42** (.05)								0.19 (.04)
	.21 (.10)					**-.55** (.22)							0.02 (.05)
	.10 (.09)							.41 (.61)					0.01 (.05)
	.21 (.09)	**-.47** (.06)				.03 (.21)							0.20 (.04)
	.19 (.08)	**-.47** (.05)						.80 (.54)					0.21 (.04)
	.22 (.09)	**-.43** (.07)				**-.62** (.30)			**-1.16** (.48)	**.00** (.00)	-1.01 (.57)	.59 (.61)	0.25 (.04)
	.17 (.09)	**-.46** (.08)				**-1.60** (.61)	**-.01** (.00)		**-1.51** (.44)	.00 (.00)		-.15 (.54)	0.26 (.04)
	.23 (.09)	**-.55** (.07)				-.30 (.24)					**-1.38** (.53)	.28 (.53)	0.22 (.04)
	.17 (.09)	**-.51** (.06)				**-1.58** (.53)	**-.01** (.00)					.11 (.49)	0.23 (.04)

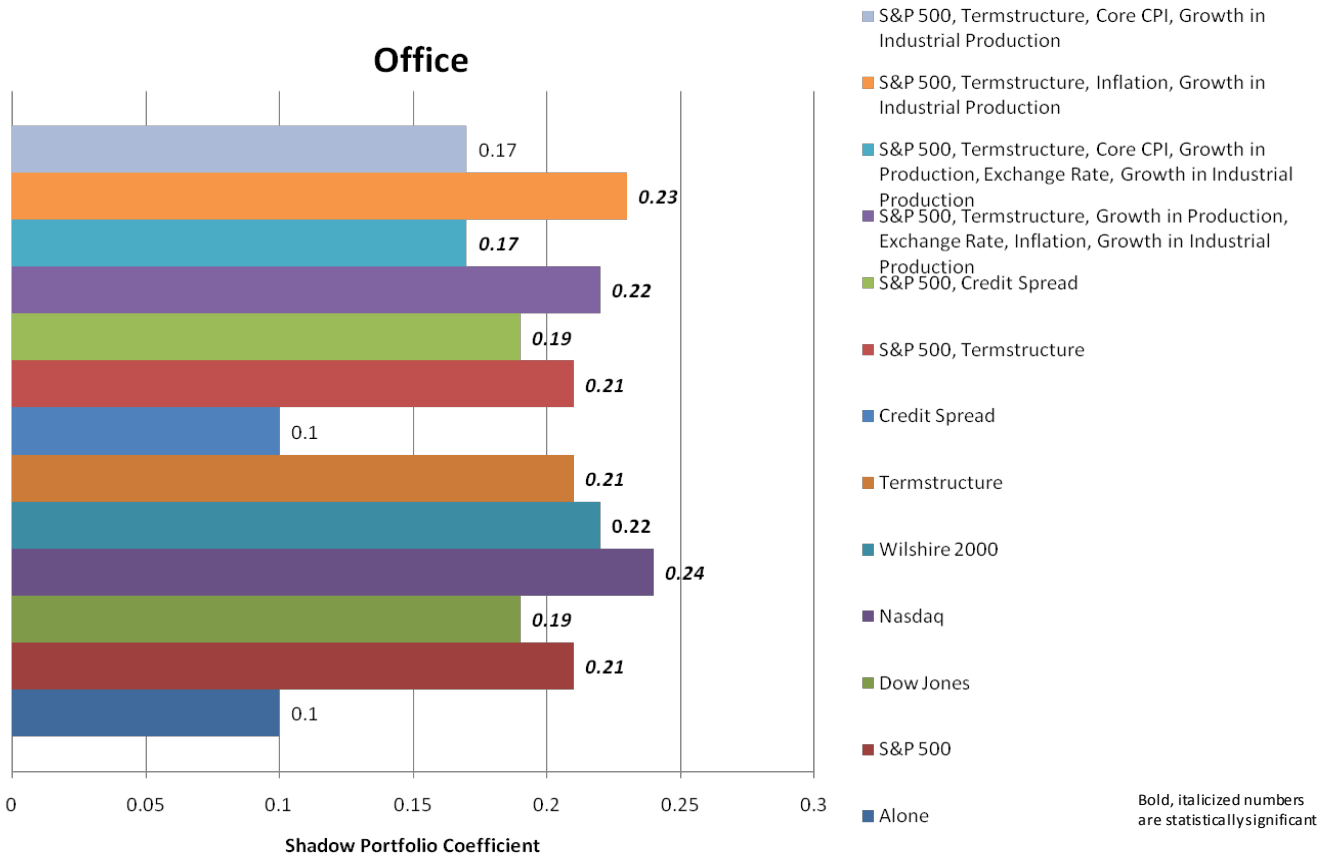
5.4 Industrial Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.11 (.14)												0.01 (.04)
	.01 (.14)												0.00 (.05)
	.22 (.12)	**-.62** (.09)											0.33 (.04)
	.18 (.11)		**-.70** (.09)										0.38 (.04)
	.11 (.13)			**-.30** (.06)									0.20 (.04)
	.22 (.12)				**-.56** (.08)								0.31 (.04)
	.05 (.17)					-.19 (.44)							0.00 (.05)
	.01 (.14)							1.08 (1.05)					0.01 (.05)
	.13 (.14)	**-.65** (.09)				.47 (.37)							0.34 (.04)
	.23 (.12)	**-.64** (.09)						**1.71** (.86)					0.36 (.04)
	.47 (.16)	**-.64** (.11)				**-1.53** (.63)			-1.25 (.74)	**.01** (.00)	**-2.40** (.91)	1.61 (.95)	0.48 (.04)
	.27 (.15)	**-.58** (.12)				-1.49 (.95)	.00 (.00)		**-2.13** (.69)	.00 (.00)		.09 (.84)	0.45 (.04)
	.22 (.14)	**-.78** (.11)				-.160 (.43)					**-2.19** (.85)	.42 (.83)	0.39 (.04)
	.23 (.14)	**-.72** (.10)				-1.91 (.92)	**-.01** (.00)					.06 (.78)	0.39 (.04)


Retail
0.16
0.05
-0.1
0.05
0.24
0.08
0.05
0.06
0.24
0.15
0.25
0.25
0.06
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Apartment
-0.18
-0.24
-0.13
-0.02
-0.18
-0.22
-0.22
-0.2
-0.17
-0.17
-0.19
-0.18
-0.22
-0.3
-0.25
-0.2
-0.15
-0.1
-0.05
0
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
0.17
0.23
0.17
0.22
0.19
0.21
0.1
0.21
0.22
0.24
0.19
0.21
0.1
0
0.05
0.1
0.15
0.2
0.25
0.3
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

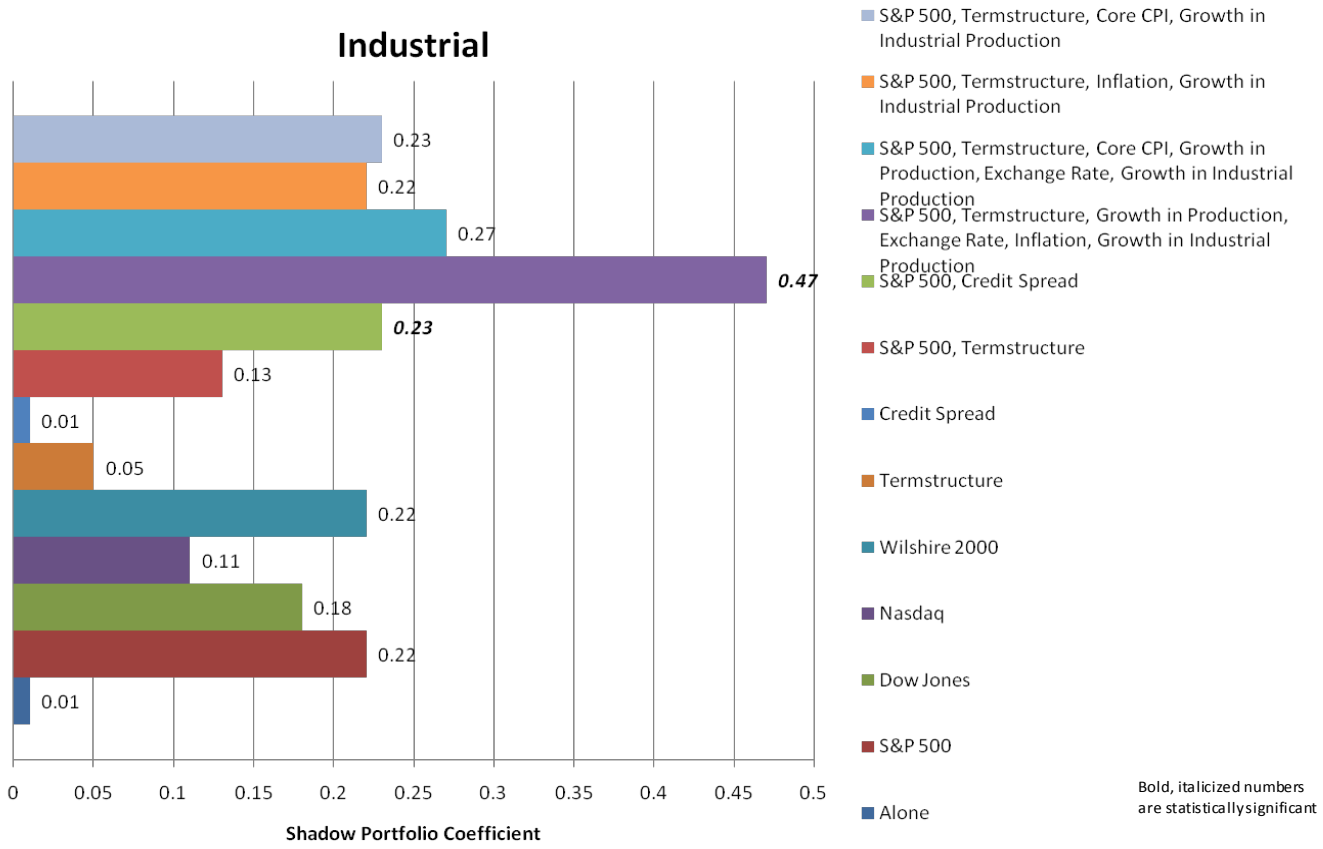

Industrial
0.23
0.22
0.27
0.47
0.23
0.13
0.01
0.05
0.22
0.11
0.18
0.22
0.01
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant

Table 6. Weighting is based on square footage (# units for apps) times average price psf (per unit for apps). Dependent variable: LOG(NAV(t)) - LOG(NAV(t-1)).

6.1 Retail Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return.

LR_r_f	shadportret_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.55 (.39)												0.01 (.19)
	.49 (.30)												0.01 (.19)
	.53 (.31)	-.12 (.25)											0.01 (.19)
	.51 (.30)		-.08 (.26)										0.01 (.19)
	.46 (.30)			.09 (.15)									0.01 (.19)
	.52 (.31)				-.10 (.23)								0.01 (.19)
	.32 (.43)					.64 (1.17)							0.01 (.19)
	.47 (.30)							1.46 (2.89)					0.01 (.19)
	.30 (.43)	-.18 (.26)				.92 (1.24)							0.01 (.19)
	.51 (.31)	-.16 (.26)						1.94 (2.99)					0.01 (.19)
	.47 (.47)	-.26 (.35)				.29 (1.74)			-2.35 (2.28)	.01 (.00)	1.49 (2.60)	-3.91 (2.83)	0.03 (.19)
	.70 (.49)	-.05 (.36)				3.79 (2.86)	.02 (.01)		-1.47 (2.11)	**.01** (.01)		-2.22 (2.50)	0.04 (.19)
	.46 (.44)	-.42 (.33)				.90 (1.29)					.86 (2.38)	-4.33 (2.46)	0.02 (.19)
	.43 (.44)	-.44 (.32)				1.52 (2.67)	.00 (.01)					-4.06 (2.26)	0.02 (.19)

6.2 Apartment Sector

Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	-.09 (.36)												0.00 (.18)
	-.20 (.31)												0.00 (.18)
	-.24 (.31)	.32 (.32)											0.01 (.18)
	-.22 (.31)		.37 (.34)										0.01 (.18)
	-.25 (.32)			.19 (.19)									0.01 (.18)
	-.25 (.31)				.30 (.29)								0.01 (.18)
	.02 (.37)					-1.3 (1.27)							0.01 (.18)
	-.05 (.30)							**-16.66** (4.22)					0.09 (.17)
	.10 (.37)	.58 (.35)				-2.36 (1.41)							0.03 (.18)
	-.15 (.29)	**1.28** (.34)						**-25.83** (4.74)					0.16 (.17)
	-.03 (.44)	.69 (.48)				-1.26 (2.20)			-.20 (2.91)	-.01 (.01)	.00 (3.37)	.24 (3.71)	0.03 (.18)
	.25 (.46)	**1.30** (.55)				4.73 (3.88)	.03 (.02)		-.57 (2.71)	.00 (.01)		1.92 (3.46)	0.05 (.18)
	.13 (.38)	.67 (.45)				-2.65 (1.61)					-.64 (3.10)	2.01 (3.14)	0.03 (.18)
	.11 (.37)	**1.16** (.47)				4.19 (3.64)	.02 (.01)					1.09 (2.93)	0.05 (.18)

6.3 Office Sector

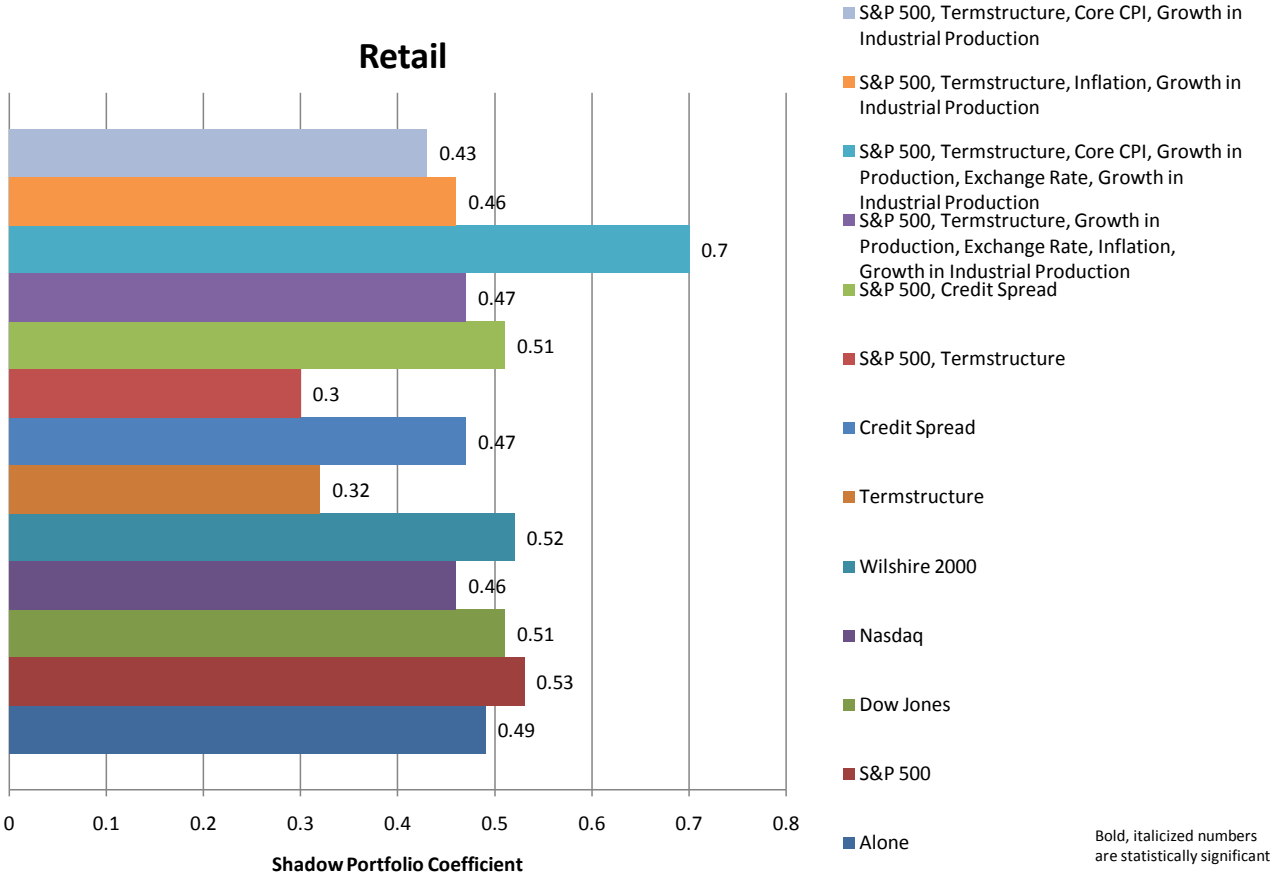
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

LR_r_f	shadport _r_f	SP500_r_f	DowJ_r_f	NASDAQ_ r_f	Wilsh_r_f	Term srtr	CPILFE	Cred Spr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.19 (.31)												0.00 (.14)
	-.14 (.28)												0.00 (.14)
	-.16 (.28)	.09 (.20)											0.00 (.14)
	-.17 (.28)		.16 (.21)										0.00 (.14)
	-.13 (.29)			-.02 (.12)									0.00 (.14)
	-.16 (.29)				.07 (.18)								0.00 (.14)
	.10 (.31)					-1.34 (.72)							0.01 (.14)
	.09 (.27)							**-11.32** (2.42)					0.08 (.13)
	.12 (.31)	.29 (.21)				**-1.77** (.79)							0.02 (.14)
	.03 (.27)	**.54** (.20)						**-14.15** (2.62)					0.11 (.13)
	.17 (.31)	.52 (.28)				.56 (1.10)			-.97 (1.69)	**-.01** (.00)	2.88 (2.04)	-2.20 (2.21)	0.07 (.13)
	.31 (.31)	**.64** (.30)				3.38 (2.25)	.02 (.01)		.08 (1.56)	-.00 (.00)		-.07 (1.99)	0.07 (.13)
	.11 (.31)	.49 (.27)				-1.51 (.92)					1.45 (1.89)	1.27 (1.92)	0.03 (.14)
	.33 (.31)	**.78** (.27)				**4.54** (2.05)	**.02** (.01)					.99 (1.77)	0.07 (.13)

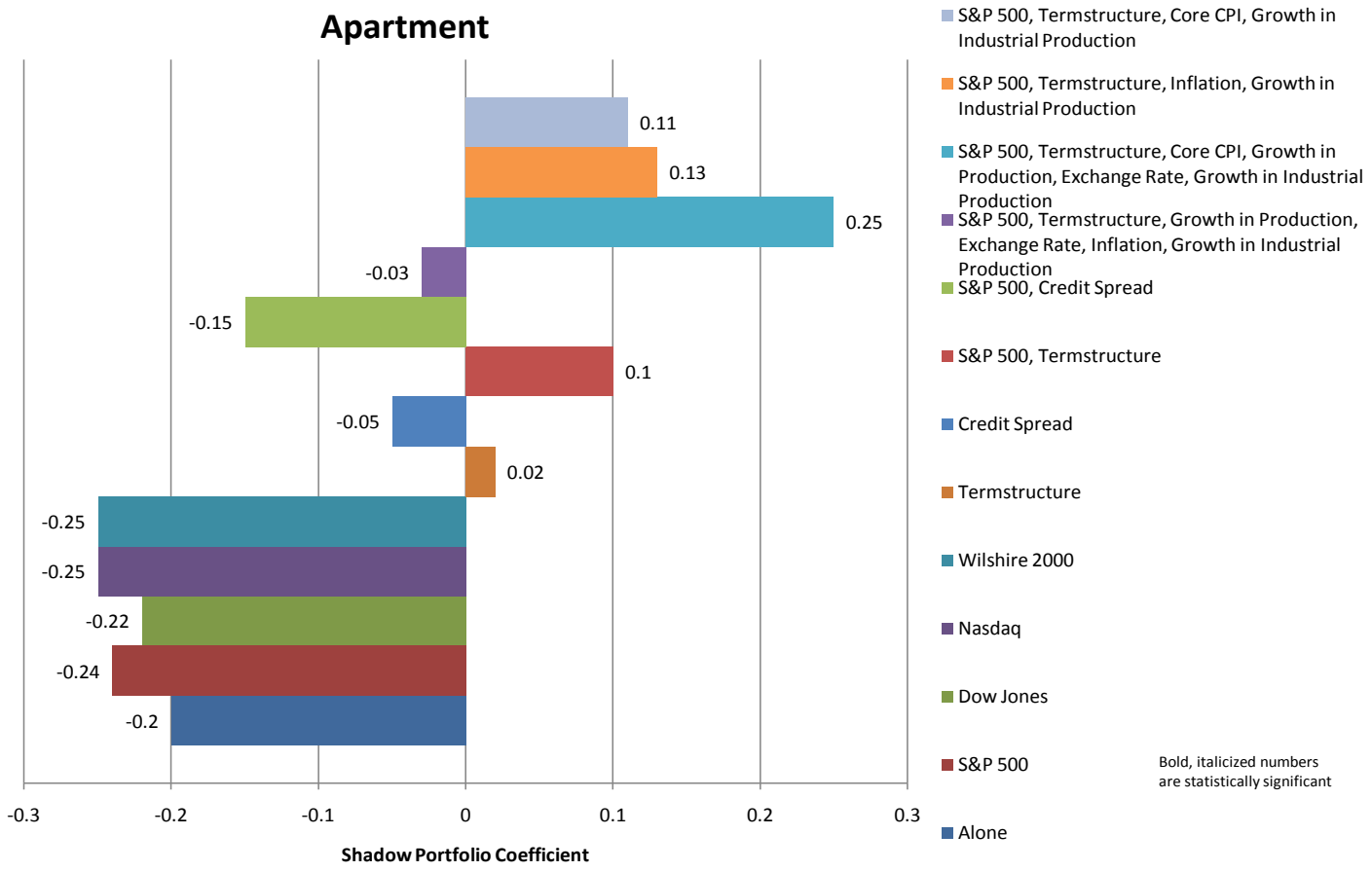
6.4 Industrial Sector

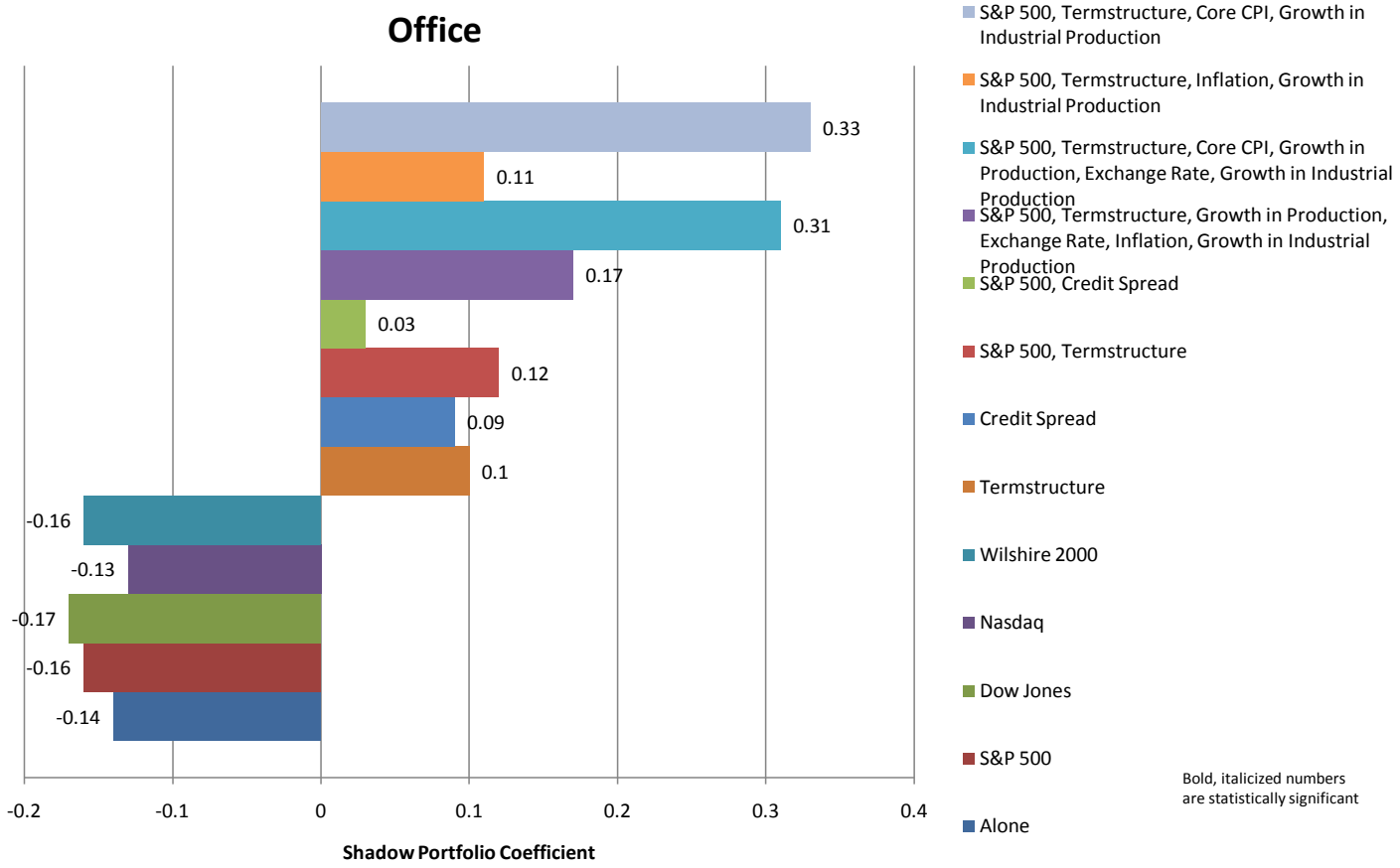
Note: The first line of the table does not subtract the risk-free rate from the REIT return or the shadow portfolio return

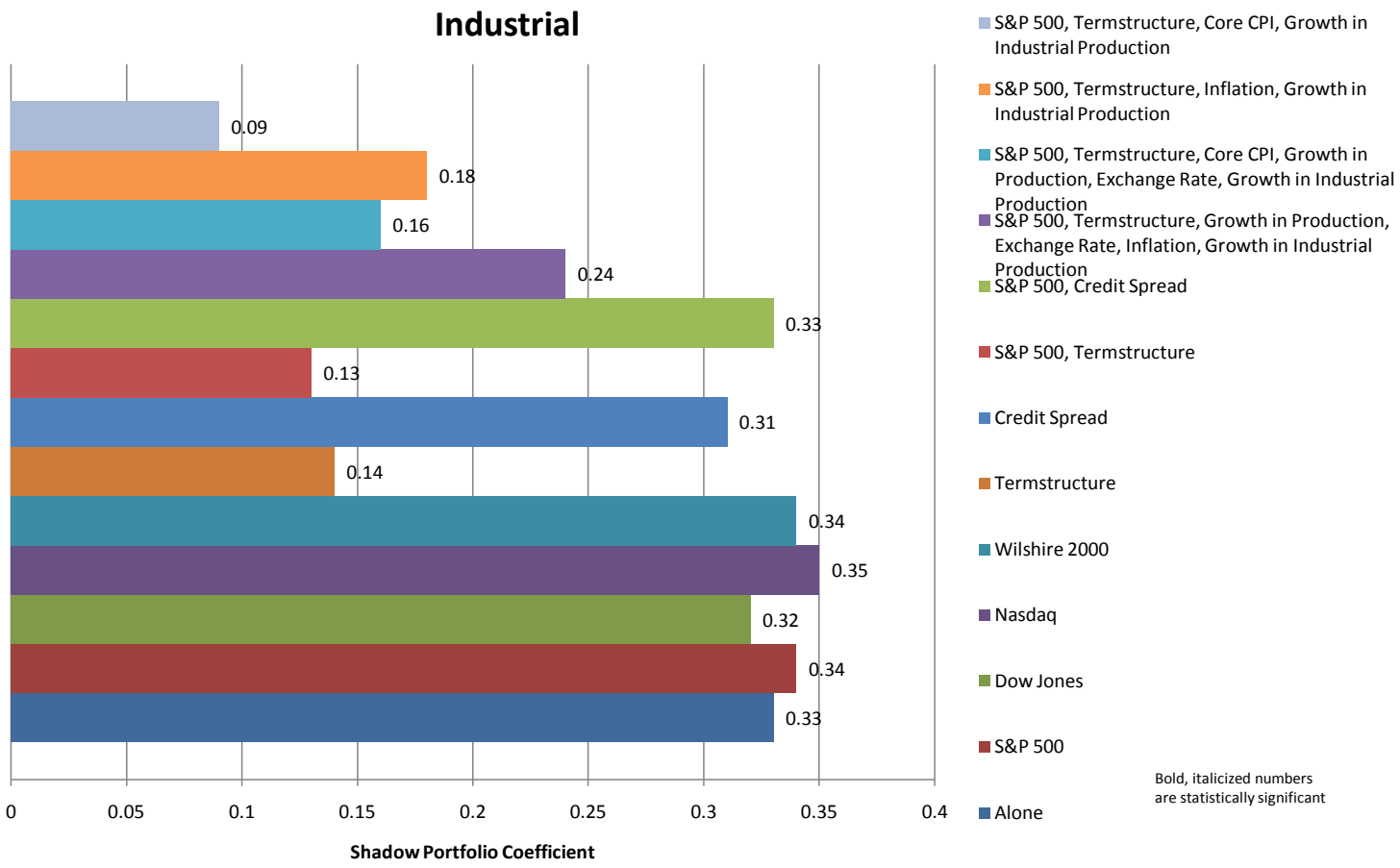
LR_r_f	shadport_r_f	SP500_r_f	DowJ_r_f	NASDAQ_r_f	Wilsh_r_f	Termsrtr	CPILFE	CredSpr	gProd	ExchRate	Inflation	gprodInd	R-Squared Statistic
Regression Coefficient (Standard Error)	.27 (.27)												0.01 (.07)
	.33 (.22)												0.03 (.07)
	.34 (.23)	-.04 (.17)											0.03 (.07)
	.32 (.22)		.04 (.18)										0.03 (.07)
	.35 (.22)			-.07 (.10)									0.03 (.07)
	.34 (.23)				-.06 (.16)								0.03 (.07)
	.14 (.28)					.78 (.72)							0.04 (.07)
	.31 (.22)							1.76 (2.11)					0.03 (.07)
	.13 (.28)	-.13 (.19)				.97 (.77)							0.05 (.07)
	.33 (.23)	-.11 (.19)						2.23 (2.26)					0.04 (.07)
	.24 (.34)	-.11 (.25)				.04 (1.38)			-.50 (1.60)	.00 (.00)	-2.02 (1.98)	2.12 (2.08)	0.07 (.07)
	.16 (.33)	.08 (.27)				1.96 (2.05)	.00 (.01)		-1.15 (1.45)	.00 (.00)		1.23 (1.81)	0.07 (.07)
	.18 (.29)	-.14 (.23)				.42 (.90)					-2.01 (1.69)	1.82 (1.68)	0.07 (.07)
	.09 (.29)	-.02 (.24)				1.62 (1.94)	.00 (.01)					.99 (1.59)	0.05 (.07)



Bold, italicized numbers are statistically significant


Apartment
0.11
0.13
0.25
-0.03
-0.15
0.1
-0.05
0.02
-0.25
-0.25
-0.22
-0.24
-0.2
-0.3
-0.2
-0.1
0
0.1
0.2
0.3
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Office
0.33
0.11
0.31
0.17
0.03
0.12
0.09
0.1
-0.16
-0.13
-0.17
-0.16
-0.14
-0.2
-0.1
0
0.1
0.2
0.3
0.4
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant


Industrial
0.09
0.18
0.16
0.24
0.33
0.13
0.31
0.14
0.34
0.35
0.32
0.34
0.33
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Shadow Portfolio Coefficient
S&P 500, Termstructure, Core CPI, Growth in Industrial Production
S&P 500, Termstructure, Inflation, Growth in Industrial Production
S&P 500, Termstructure, Core CPI, Growth in Production, Exchange Rate, Growth in Industrial Production
S&P 500, Termstructure, Growth in Production, Exchange Rate, Inflation, Growth in Industrial Production
S&P 500, Credit Spread
S&P 500, Termstructure
Credit Spread
Termstructure
Wilshire 2000
Nasdaq
Dow Jones
S&P 500
Alone
Bold, italicized numbers are statistically significant