

# Comparing Value: U.S. Government Office Leases vs. Credit Tenant Leases

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THE MARKET HAS BEEN SLOW TO RECOGNIZE CHANGING conditions. When investors estimate the value of leased fee interest in government offices, they need to understand how market participants may periodically change their perceptions of risk for these investments, based on market conditions that influence these changes.

The major impetus for this article is that there is a surprising contrast between: 1) economic information that clearly reflects increasing risks to government agency tenants in the near future, as well as risks to bond ratings; and, 2) the absence of discernible reactions from investors and lenders dealing with these government leases. For unknown reasons, the economic information is not yet impacting market participants in the federal leasing arena. This article signals that the risks are present; the risks can be illustrated and quantified and should be considered by both market participants. The authors are attempting to play the role of the canaries in the mine.

Single tenant properties are the focus of this article for simplicity of analysis. Many of the same categories of issues apply to federal agency tenants in multi-tenant buildings, but the impacts are somewhat lessened by the presence of other tenants.

## WHAT IS A CREDIT TENANT?

There is no single definition of a credit tenant in the *Dictionary of Real Estate Appraisal* or similar sources. However, in reviewing websites of various lenders that specialize in credit tenant loans, we find the characteristics of a credit tenant are reasonably well defined. A credit tenant is typically one whose bond issues fall within the investment grade levels set by one of the three major rating agencies: Moody's, Fitch and Standard & Poor's. These tenants are usually among the strongest national

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or regional firms in the country. Their creditworthiness is based on review of each company's income statements and balance sheets to evaluate the ability to pay debt and other long-term obligations. Tenants that fall into the investment grade categories have a substantially lower rate of default on their corporate debt obligations than other tenants. In the leasing arena, this logically means minimal risk of non-performance during the lease term. Credit tenant loans rely on the creditworthiness of the tenant and are considered to have some similarities to a bond in terms of reliability of cash flow.

### CREDITWORTHINESS IS NOT STATIC

Typically, only very strong public companies are rated by the major rating agencies mentioned above. Periodically, agencies either downgrade or upgrade a company's rating based on current and forecast financial data for the company. A significant revision in ratings can influence whether a company is viewed as a strong credit tenant, a weaker credit tenant or a non-credit tenant. Informed investors monitor these changes in considering what leased fee investments to make and how to price them.

The major credit rating agencies use multiple categories of ratings. As an example, Standard & Poor's has more than 20 rating categories ranging from the highest rating of AAA to the lowest rating at C. The upper half of these ratings are considered investment grade and the lower half are considered speculative investments with a somewhat higher default risk. All rated companies are considered credit tenants. Non-rated companies are generally, but not always, considered non-credit tenants. Some credit tenants are privately held companies with very strong revenues and balance sheets.

### CREDITWORTHINESS IS AN IMPORTANT QUESTION WITH FEDERAL AGENCIES, TOO

According to studies carried out from 1920–2009, the average default rate for the Moody's equivalent of corporate AAA bonds (a Moody's AAA bond) is 0.00 percent, or statistically zero. This does not mean such defaults never occur. It simply means that such defaults are so rare that it is statistically zero.

It is typically assumed that the federal government is the ultimate credit tenant, earning the highest credit rating of AAA. The federal government's AAA bond rating has been largely unquestioned since 1941, when the rating was first assigned to the federal government for the world's number one economy. Organizations that specialize in financing federal government leased facilities continue to

take the traditional view that the federal government is the ultimate creditworthy tenant. On that basis, for single tenant buildings, these specialty lenders continue to loan 100 percent of market value of the property with a 1.00–1.05 debt coverage ratio as long as the loan is amortized within the lease term.

Over the past two years there have been several factors that point toward a need for careful reconsideration of two issues: 1) whether the federal government is still a credit tenant; and, 2) if the federal government is a credit tenant, whether it deserves the highest credit tenant rating. These factors, listed below, indicate that the credit rating is likely to undergo changes, unless serious debt reduction plans are in place:

- Of ten U.S.-based credit rating agencies, two (Standard & Poor's and Egan-Jones) have downgraded the rating of U.S. debt during June through August of 2011.<sup>1,2</sup>
- Of three of the most well-known credit rating agencies (Standard & Poor's, Moody's and Fitch), one agency, Standard & Poor's, has downgraded the credit rating of U.S. debt, and the other two agencies have threatened to carry out a downgrade in the future if the U.S. does not begin to take steps to lower its debt ratio.<sup>3</sup>
- One German credit rating agency and one credit rating agency in China have downgraded U.S. debt.<sup>4,5</sup>

Credit ratings applied to sovereign debt (a country's debt) consider a wide range of economic, financial and political factors. Each of the rating agencies involved gives substantial attention to U.S. debt as a percentage of U.S. gross domestic product. During August of 2011, U.S. debt was roughly equivalent to 100 percent of gross domestic product, and on a continuing upward trend. This high ratio of debt to gross domestic product is considered sustainable for only a brief period of time. Therefore, it is considered essential to bring the debt ratio down to much lower long-term levels. The rating agencies also have expressed concern about the inability of the U.S. Congress to take action to reverse the trend toward increasing debt.<sup>6</sup>

Today an informed investor should possibly consider the following contemporary factors regarding risk of default or early lease termination:

- There has been a consistent discussion in the press about the diminished quality of the U.S. dollar and U.S. Treasury bonds and risk of a broader rating downgrade.

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- Some recent Treasury bond issues have not sold as well as anticipated, so there has been heavy participation by the Federal Reserve in buying Treasuries to maintain low required Treasury yields.<sup>7</sup> It is unknown whether that practice, which also increases U.S. debt, will continue. If not, future Treasury issues may require higher interest rates to reflect higher risk perceptions.
- China has been the largest purchaser of U.S. Treasury issues in recent years. Within the past year, China has expressed the intention of slowing its purchases of Treasury issues and plans to continue with diminished purchases of Treasury issues in the future.<sup>8</sup> However, this change has been temporarily delayed by weaknesses in the euro, one alternative investment.
- The underlying problem recognized by economists on a worldwide basis is excessive debt or deficit spending by the U.S. government.

Each of the factors above points to a period of greater-than-normal government uncertainty—and greater-than-normal government risk—for government agency leases over the next two to four years.

### FACTUAL HISTORICAL DATA AND RELEVANCE

As of November 2011, the termination rate for U.S. Government Services Administration (GSA) leases was 3.1 percent or significantly more than the typical AAA corporate default rate, which is virtually zero (source: GSA rollover data as of November 2011). The average length of stay per lease was 16.7 years during 2010. That is an average figure which does not give an indication of how short some lease durations may be.

Furthermore, on the website *capitalmarkets.com*, a May 25, 2012 article entitled “GSA’s Dwindling Lease Term” reports the GSA average lease term has been dramatically reduced since 2005, and many federal agencies are moving toward shorter leases because of lack of an approved budget and budget uncertainties. In the view of the authors, this is an important further indication of uncertainty regarding federal leases. The article cited addresses the issue as of May 2012 (prior to sequestration being implemented) as follows:

*The government right now is, well, it’s in turmoil. That’s voiced as an opinion but it feels like actual, quantifiable fact. The United States is still fighting its way out of a deep and prolonged recession, the government has been operating under a series of continuing resolutions for*

*nearly two years, the budget faces sequestration, Congress is applying strict space utilization limits to approved prospectuses and agencies are expected to freeze their real estate inventory at current levels, with the anticipation that deep discretionary spending cuts are on the horizon.*

*All of this has conspired to create an uncertain environment leading many agencies to abandon long-term real estate planning in favor of kicking the can down the road with short-term lease extensions. Or, perhaps, agencies are engaging in short-term renewals until they can come up with a viable long-term plan. In either case, it’s bad news for property investors because lease terms, overall, are getting shorter, and shorter lease terms damage property values and create significant financing dilemmas.*

These are indicators of federal agency past performance only. It is important to realize the limitations of such historical data. The U.S. economy and the government budget are going into a period of unprecedented uncertainty. History was not a good guide in 1929. It is important to be aware of the specific changing market conditions that lay a foundation for the scenarios above. Any income approach with a discounted cash flow analysis requires an evaluation of changing market conditions to structure the assumptions. The present value of any lease is the sum of future anticipated cash flows and risks. That is what is being evaluated here.

Each of the factors discussed above points to a period of greater-than-normal uncertainty and risk for government agency leases over the next two to four years. Based on that premise, there are essentially two scenarios that appear most likely to the authors:

### Scenario 1 – Congress acts to make a meaningful

**reduction in the budget:** It is conceivable that Congress could structure a reduced budget between the existing budget level and the 2008 level. Such a cut would generate federal budget reductions ranging from 10–30 percent. Many government agencies could be required to reduce their workforces and terminate lease agreements through potential consolidations. So far, this scenario has not materialized. While these percentages seem large, they reflect the scale of cuts needed even if phased over 10 to 15 years. The budget cuts targeted in the fallback process called sequestration are universally considered inadequate. Sequestration implementation began March 1, 2013. The sequestration process targets virtually all programs other than Medicare and Social Security with 7.5 percent or greater cuts annually.

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**Scenario 2 – Congress fails to act:** If Congress is unsuccessful in taking steps to curb the deficit, major purchasers of U.S. Treasuries are likely to reduce purchases further (unless other economies remain less attractive in the long term). If U.S. debt becomes less attractive, U.S. Treasuries will have to pay higher returns to promote sale. Either way, this scenario will effectively force deficit reduction because of reduced federal government borrowing capacity and higher interest rates. Forced deficit reduction on a significant scale leads to mandatory layoffs and reduced need for facility space.

Either of the scenarios discussed above could trigger some early termination clauses in government leases. This is discussed in the following description of lease structure.

### OPTIMUM CHARACTERISTICS OF SINGLE TENANT INVESTMENT GRADE LEASES

When financing a single tenant lease, there are several elements to the lease structure that are optimum to obtaining favorable credit tenant financing. They include the following:

- *Long term* – Normally lenders like to see leases in the 10- to 30-year range to see reliable cash flow for the period of a loan. Where lenders are not involved, this same term is typically found for credit tenant leases.
- *No early termination* – Normally the lease requires performance (payment of rent and expenses) for the full term of the lease regardless of whether the lessee continues to occupy the premises or “goes dark.” In fact, these leases also are called “hell or high water leases,” which require performance regardless of casualty or condemnation.
- *Triple net or absolute triple net lease* – This structure is designed to minimize the expense and capital cost obligations of the lessor. With an absolute triple net lease, known as a bond lease, the lessor is essentially a coupon clipper with no expenses other than management fees during the lease term for some of these leases. The absolute triple net lease also includes responsibility for capital improvements and a requirement to rebuild and continue to pay rent after a casualty. Additionally, an absolute triple net lease requires payment of rent after condemnation. A triple net lease requires payment of repairs and maintenance, property insurance and property tax and may include additional fees for management. A triple net lease does not typically include structural or capital improvement responsibilities.

- *Periodic rent increases* – Rents are adjusted to address inflation.
- *Multiple renewal periods* – This reduces the likelihood of a vacancy period following the lease expiration.

### SPECIALIZED GOVERNMENT LEASE CLAUSES THAT INCREASE THE UNCERTAINTY OF FUTURE CASH FLOW

There are two major lease clauses in typical government-required leases that tend to decrease the certainty and duration of the cash flow when compared to the optimum lease characteristics discussed above. They are as follows:

- *Risk of vacancy before lease termination* – Many federal government leases have a clause for early termination for government convenience. These types of clauses allow the lessee to terminate the lease at any time for the government’s convenience with little notice. The practical impact of this clause is basically similar to the impact of a non-appropriation clause for municipal leases, but is a much broader right to terminate. (A non-appropriation clause allows a municipal government to terminate a lease if its appropriating body does not appropriate funds for the lease payments.) For the lessor, the impact of a clause for early termination is the potential for a vacancy during the lease term (unlike in a “hell or high water lease”). This can be particularly damaging for buildings used as government offices that have many special purpose and customized features not present in typical commercial offices. The resultant vacant building is often filled with features substantially beyond what the market will pay in rent and in increased monthly operating costs.
- *Uncertainty about operating expenses covered* – As previously mentioned, in a private corporation’s absolute triple net lease (a bond lease), the lessee covers all operating expenses and capital repairs with the exception of a management fee. In contrast, a GSA federal government lease includes an estimated allowance for operating expenses, established at the front end of the lease, which is periodically adjusted for inflation. So the burden of estimating future operating expenses accurately falls on the lessor. If this allowance falls short of actual expenses during any year, the lessor is responsible for the difference. Estimating these expenses accurately can be particularly challenging in an office building with many special purpose features and systems typically

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not found in commercial buildings. These unfamiliar features and systems require additional maintenance burdens that can be difficult to forecast.

### **SPECIALIZED GOVERNMENT LEASE CLAUSES THAT AFFECT PAYMENT TIMING AND DISPUTE RESOLUTION**

Federal government leases are paid in arrears rather than in advance, which changes the timing of the cash flows to reduce present value in a significant way. If pricing were based only on discounted cash flow analysis, this difference would be addressed and fully understood. However, these investments often are analyzed by dividing the annual net operating income by an overall cap rate. The same overall cap rate is applied to the income stream for both corporate credit and federal agency tenants. So the difference in timing is not explicitly addressed in pricing of these two different investments or in the overall capitalization rate. This is a flaw in the analytical process by market participants, which slightly overstates value.

Other clauses also provide different and more complex rules for federal government agency leases. These include clauses that govern holdovers after lease expiration and dispute resolution. In many cases, dispute resolution may require expensive and lengthy legal action to enforce—a scenario less common with typical commercial leases.

### **QUANTIFYING THE ECONOMIC IMPACTS OF DIFFERENCES IN GOVERNMENT LEASES**

The potential economic impact of each of these clauses is unique to the property and the lease specifics. An example is provided to illustrate the order of magnitude of the impacts, in a sample cash flow or present value analysis.

#### **Payment in Arrears – Economic Impact Illustration**

This impact can be analyzed either on a simplified basis or by looking at differences in present value in a 240-month (20-year) cash flow. The results are virtually identical. Using the simplified approach, let us assume cash flows are discounted at an eight percent rate. The difference in cash flows is as follows:

$$1 - (1+.08)^{1/12} = 1 - 0.9936 = 0.0064\% \text{ or } 0.6\% \\ \text{after rounding}$$

If pricing were based only on discounted cash flow analysis, this difference would be addressed and fully understood by the market. However, these investments often are analyzed by dividing the annual net operating income by an overall cap rate. The same overall cap rate is applied to the income stream for both corporate credit tenants (paid in advance) and for federal agency

tenants (paid in arrears). So, the difference in timing is not explicitly addressed in pricing of these two different investments. The equation above addresses cash flows only during the period of the lease, without inclusion of reversion cash flows.

#### **Early Termination Clause – Economic Impact Illustration**

According to studies carried out from 1920–2009, the average default rate for the Moody's equivalent of corporate AAA bonds (a Moody's AAA bond) is 0.00 percent or statistically zero. Since 1941, U.S. government bonds have been rated AAA as well. This section is intended to illustrate the economic impact of a three to five percent early termination rate for federal government leases. Some may ask whether a three to five percent early termination rate is appropriate, even as a "what if" scenario for illustration only. The selection of that range is reasonable based on the following factors:

- During 2012, federal government revenues were 35 percent below federal government spending. Even with spreading cuts over multiple years, when cuts occur they ultimately could be substantial enough to support the early termination scenarios considered in this article.
- There is deep resistance on the part of many taxpayers against making significant cuts to Social Security, Medicare, Medicaid and other entitlements that make up the majority of the federal budget.
- There also is deep resistance on the part of many taxpayers against significant tax increases to increase revenue.
- Therefore, elements of the federal budget other than those listed above are more likely to take somewhat deeper cuts.
- We already have seen the federal government closing large numbers of owned facilities in agencies, including the U.S. Postal Service and the Defense Department working toward cutbacks. So, it is not difficult to imagine the federal government taking similar actions by terminating leases.
- There is evidence, previously discussed, that GSA leases during 2011 experienced a three percent early termination rate, before significant cuts have occurred.
- Even though sequestration was implemented March 1, 2013, it will still leave most of the spending gap unaddressed, with more substantial cuts needed.

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Before presenting the cash flow illustrations, it is important to discuss the types of risks to the lessor if an early termination occurs. The potential risks and damages from early termination are described below:

- *Some partial protection for termination during the first five years* – With a typical federal agency lease, the lessor has some level of protection only if the lease is terminated “at the convenience of the government” during the first five years of the lease. This specific termination requires government payments under a complex set of regulations. The lessor has the right to go beyond a settlement process to litigation in the courts only if the government permits. Whether the amount recovered makes the lessor whole for the equivalent of the remaining term for both rent and operating expenses is an unknown that varies based on specific circumstances. The bottom line is that if termination occurs in the first few years, the lessor still is faced with some risk/uncertainty about the amount of lost revenue and reimbursements that are recoverable.
- *Typically no protection for termination after the fifth year* – If the lease is terminated “at the convenience of the government,” typically after the fifth year, the lessor has no recourse and is left with a vacant single tenant building. Some may argue that not all buildings leased to federal agencies are difficult to lease to another tenant. Buildings that are built to meet government specifications can have the appearance of a standard structure and yet contain many components built to a much higher standard. These components include electrical, air handling, security and structural components. The end result can be an average building that costs substantially more to operate and requires a higher investment in order to recover costs. It is not uncommon to see office buildings built to government specifications that exceed standard building costs by 50 percent or more. The average corporate user filling a vacancy may not be willing to pay the higher cost for better design that it does not need. Or, in some cases, the lessor is left with an obvious specialty building that has fewer potential users. The result is extended vacancy, particularly during a recessionary period. These risks are most likely to occur with government facilities that are either special use or built to special specifications. Proper improvement analysis should reveal this issue and should be addressed in an upward adjustment to the risk rate/discount rate to reflect superadequacies.

As discussed previously, defaults of AAA corporate bonds historically are so infrequent that, statistically, they averaged 0.00 percent over the period 1929–2009. Figures 1, 2 and 3 compare a AAA rated corporate lease which has essentially zero early termination risk with the following:

- A government agency lease with a three percent early termination risk for years six through 20 of a 20-year lease (Figure 2). During the first five years, government compensation for lease termination is assumed to be available. The present value is 6.31 percent less than the zero early termination risk scenario.
- A government agency lease with a five percent early termination risk for years six through 20 of a 20-year lease (Figure 3). During the first five years, government compensation for lease termination is assumed to be available. The present value is 9.18 percent less than the zero early termination risk scenario.

It should be noted that annual rent payments were used because of greater simplicity of illustration. In fact, for a monthly payment analysis over the same 20-year period, the results are 6.54 percent present value loss for the three percent early termination risk scenario, and 9.54 percent for the five percent early termination risk scenario. These are reasonably similar results.

The differentials or increments in the discount rate of 1.0 percent and 1.5 percent above the rate for the AAA rated tenants are drawn from the current market. This is the typical differential found in cap rates in both the office and retail markets when comparing the highest grade tenants to those in the upper- to mid-tier B-rated tenants.

The principle behind the higher discount rates is as follows: both long-term bonds and credit tenant leases are long-term, fixed-rate obligations of much higher reliability than a lease with a non-credit tenant. With a bond, the greater the default risk, the higher the cap rate and discount rate to reflect higher risk. With a credit tenant lease, the greater the lease termination risk, the higher the cap rate and discount rate to reflect higher risk. The bond default risk is simply used as a reasonable proxy for lease termination risk, which is not as easily measured. Bond default rates are regularly tracked by multiple rating agencies.

Because of current and possible future conditions in the federal government sector, a three to five percent risk of early termination is assumed as an illustration. If these percentages become a reality, it is easy to see the basis for

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a decrease in present value of the six to nine percent range compared to AAA rated corporate leases, based on figures 1, 2, 3 and 4 that follow.

The cash flows illustrated in figures 1, 2 and 3 address the period of the lease only. Figure 4 is presented simply to indicate the rough scale of the reversion in comparison to the leased fee interest presented in Figure 1. In that way, the loss in present value from the lease cash flow in figures 2 and 3 can be adjusted downward to reflect their proportion to the total leased fee value. At reversion, the rent converts to market value which, for purposes of the illustration, is assumed to be 10 percent lower than contract rent at the inception of the original lease. In this case, the present value of lease cash flow represents 74 percent of leased fee value, while the reversion represents approximately 26 percent of leased fee value.

Lost present value to the lease cash flow was 6.31 percent for a three percent rate of early termination, and 9.18 percent for a five percent rate of early termination.

When compared to the total leased fee value (lease cash flow plus reversion), after rounding, the results are in

the range of: 1) a present value loss of 4.6 percent for a three percent rate of early termination; and, 2) a present value loss of 6.7 percent for a five percent rate of early termination.

Note: The reversion component was provided for illustration and ease of calculation. It was assumed to be the same for each scenario. However, modeling the impact of early termination on reversion can be complex. It is possible that early termination also has an adverse impact on the value of the reversion for the following reasons:

- Contract rent may substantially exceed market rent for a non-government tenant in a somewhat customized building. This differential in rent can be well in excess of 10 percent, in the authors' experience.
- Other costs and impacts could be incurred during the reversion that could lower the value of the reversion. The reversion analysis also does not address other costs of renting to a new tenant: 1) possible above-average tenant improvement costs (modifications to address standard users); and, 2) possible lengthy loss of market rent during a vacancy period necessary to

Year	Rent \$/Sq. Ff.	Vacancy Allowance	Effective Gross Income	Mgmt Fee	Cash Flow	Present Value Factor	Present Value	Assumptions:  Rent Per Sq. Ft./Yr.           \$30.00  Discount Rate           8%  5 Yr. Rent Increase   15.93% Yrs. 6, 11, 16  Annualized Rent Increase   3.0%  Management Fee       2.0%  Default Rate During Yrs. 1-10   0.0%
1	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	1.0000	\$29.40	
2	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.9259	\$27.22	
3	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.8573	\$25.20	
4	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7938	\$23.34	
5	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7350	\$21.61	
6	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6806	\$23.19	
7	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6302	\$21.48	
8	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5835	\$19.89	
9	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5403	\$18.41	
10	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5002	\$17.05	
11	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4632	\$18.30	
12	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4289	\$16.95	
13	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3971	\$15.69	
14	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3677	\$14.53	
15	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3405	\$13.45	
16	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.3152	\$14.44	
17	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2919	\$13.37	
18	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2703	\$12.38	
19	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2502	\$11.46	
20	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2317	\$10.61	
Present Value of Lease Cash Flow Per Sq. Ft.							\$367.97	

Source: Sonneman and Yerke, 2013

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Figure 2 Federal Agency with 3% Early Termination Rate During Years 1–10								Assumptions:
Year	Rent \$/Sq. Ff.	Vacancy Allowance	Effective Gross Income	Mgmt Fee	Cash Flow	Present Value Factor	Present Value	
1	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	1.0000	\$29.40	Rent Per Sq. Ft./Yr. \$30.00  Discount Rate 8% Yrs. 1–5 Minimal Risk Govt. Payment Govt. Pmt. For Remaining Lease  Discount Rate 9.0% (1.0% Higher For Risk)  5 Yr. Rent Increase 15.93% Yrs. 6, 11, 16  Annualized Rent Increase 3.0%  Management Fee 2.0%  Early Termination Rate During Yrs. 1–10 3.0%
2	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.9259	\$27.22	
3	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.8573	\$25.20	
4	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7938	\$23.34	
5	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7350	\$21.61	
6	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6499	\$22.15	
7	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5963	\$20.32	
8	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5470	\$18.64	
9	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5019	\$17.10	
10	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.4604	\$15.69	
11	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4224	\$16.69	
12	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3875	\$15.31	
13	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3555	\$14.05	
14	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3262	\$12.89	
15	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.2992	\$11.82	
16	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2745	\$12.57	
17	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2519	\$11.54	
18	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2311	\$10.59	
19	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2120	\$9.71	
20	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.1945	\$8.91	
Present Value of Lease Cash Flow Per Sq. Ft.							\$344.75	
Early Termination Risk % Lower Present Value							-6.31%	

Source: Sonneman and Yerke, 2013

Figure 3 Federal Agency with 5% Early Termination Rate								Assumptions:
Year	Rent \$/Sq. Ff.	Vacancy Allowance	Effective Gross Income	Mgmt Fee	Cash Flow	Present Value Factor	Present Value	
1	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	1.0000	\$29.40	Rent Per Sq. Ft./Yr. \$30.00  Discount Rate 8.0% Yrs. 1–5 Discount Rate Years 1–5  Discount Rate 9.5% Yrs. 6–20 (1.5% Higher For Risk)  5 Yr. Rent Increase 15.93% (Yrs. 6, 11, 16)  Annualized Rent Increase 3.0%  Management Fee 2.0%  Early Termination Rate During Yrs. 1–10 5.0%
2	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.9259	\$27.22	
3	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.8573	\$25.20	
4	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7938	\$23.34	
5	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7350	\$21.61	
6	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6352	\$21.65	
7	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5801	\$19.77	
8	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5298	\$18.06	
9	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.4838	\$16.49	
10	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.4418	\$15.06	
11	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4035	\$15.94	
12	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3685	\$14.56	
13	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3365	\$13.30	
14	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3073	\$12.14	
15	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.2807	\$11.09	
16	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2563	\$11.74	
17	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2341	\$10.72	
18	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2138	\$9.79	
19	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.1952	\$8.94	
20	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.1783	\$8.17	
Present Value of Lease Cash Flow Per Sq. Ft.							\$334.19	
Early Termination Risk % Lower Present Value							-9.18%	

Source: Sonneman and Yerke, 2013

## Comparing Value: U.S. Government Office Leases vs. Credit Tenant Leases

**Figure 4: Leased Fee Value (Same as Figure 1 with Reversion Analysis Added)  
AAA Rated Corporation Lessee with Zero Early Termination Risk**

Year	Market Rent \$/Sq. Ft.	Contract Rent \$/Sq. Ft.	Vacancy Allowance	Effective Gross Income	Mgmt Fee	Cash Flow	Present Value Factor	Present Value	Assumptions:																								
1	\$27.00	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	1.0000	\$29.40	<table border="0"> <tr> <td>Market Rent Per Sq. Ft./Yr.</td> <td>\$27.00</td> </tr> <tr> <td></td> <td>10% Below Contract Rent</td> </tr> <tr> <td>Contract Rent Per Sq. Ft./ Yr.</td> <td>\$30.00</td> </tr> <tr> <td>Stabilized Vacancy at Market Rent (For Reversion)</td> <td>5.0%</td> </tr> <tr> <td>Discount Rate</td> <td>8.0%</td> </tr> <tr> <td>Going in Cap Rate</td> <td>6.5%</td> </tr> <tr> <td>Terminal Cap Rate</td> <td>7.5%</td> </tr> <tr> <td>5 Yr. Rent Increase Yrs. 6, 11, 16</td> <td>15.93%</td> </tr> <tr> <td>Annualized Rent Increase</td> <td>3.0%</td> </tr> <tr> <td>Annual Rent Inflation</td> <td>3.0%</td> </tr> <tr> <td>Management Fee</td> <td>2.0%</td> </tr> <tr> <td>Default Rate</td> <td>0.0%</td> </tr> </table>	Market Rent Per Sq. Ft./Yr.	\$27.00		10% Below Contract Rent	Contract Rent Per Sq. Ft./ Yr.	\$30.00	Stabilized Vacancy at Market Rent (For Reversion)	5.0%	Discount Rate	8.0%	Going in Cap Rate	6.5%	Terminal Cap Rate	7.5%	5 Yr. Rent Increase Yrs. 6, 11, 16	15.93%	Annualized Rent Increase	3.0%	Annual Rent Inflation	3.0%	Management Fee	2.0%	Default Rate	0.0%
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Default Rate	0.0%																																
2	\$27.81	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.9259	\$27.22																									
3	\$28.64	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.8573	\$25.20																									
4	\$29.50	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7938	\$23.34																									
5	\$30.39	\$30.00	\$0.00	\$30.00	\$0.60	\$29.40	0.7350	\$21.61																									
6	\$31.30	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6806	\$23.19																									
7	\$32.24	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.6302	\$21.48																									
8	\$33.21	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5835	\$19.89																									
9	\$34.20	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5403	\$18.41																									
10	\$35.23	\$34.78	\$0.00	\$34.78	\$0.70	\$34.08	0.5002	\$17.05																									
11	\$36.29	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4632	\$18.30																									
12	\$37.37	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.4289	\$16.95																									
13	\$38.50	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3971	\$15.69																									
14	\$39.65	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3677	\$14.53																									
15	\$40.84	\$40.32	\$0.00	\$40.32	\$0.81	\$39.51	0.3405	\$13.45																									
16	\$42.07	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.3152	\$14.44																									
17	\$43.33	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2919	\$13.37																									
18	\$44.63	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2703	\$12.38																									
19	\$45.97	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2502	\$11.46																									
20	\$47.34	\$46.74	\$0.00	\$46.74	\$0.93	\$45.81	0.2317	\$10.61																									
Terminal Year	\$48.77	\$48.77	\$2.44	\$46.33	\$0.98	\$45.40			<table border="0"> <tr> <td>Present Value of Lease Cash Flow Per Sq. Ft.</td> <td>\$367.97</td> </tr> <tr> <td>Terminal Year Net Operating Income</td> <td>\$45.40</td> </tr> <tr> <td>Terminal Cap Rate</td> <td>7.5%</td> </tr> <tr> <td>Terminal Year Sale Price</td> <td>605.33</td> </tr> <tr> <td>Les Closing Cost @ 6%</td> <td>36.32</td> </tr> <tr> <td>Terminal Year Sale Proceeds</td> <td>569.01</td> </tr> <tr> <td>Present Value Factor</td> <td>0.2317</td> </tr> <tr> <td>Reversion Per Sq. Ft.</td> <td>\$131.84</td> </tr> <tr> <td>Leased Fee Value Per Sq. Ft.</td> <td><u>\$499.81</u></td> </tr> <tr> <td>Lease Cash Flow: % of Leased Fee Value</td> <td>73.6%</td> </tr> <tr> <td>Reversion: % of Leased Fee Value</td> <td>26.4%</td> </tr> </table>	Present Value of Lease Cash Flow Per Sq. Ft.	\$367.97	Terminal Year Net Operating Income	\$45.40	Terminal Cap Rate	7.5%	Terminal Year Sale Price	605.33	Les Closing Cost @ 6%	36.32	Terminal Year Sale Proceeds	569.01	Present Value Factor	0.2317	Reversion Per Sq. Ft.	\$131.84	Leased Fee Value Per Sq. Ft.	<u>\$499.81</u>	Lease Cash Flow: % of Leased Fee Value	73.6%	Reversion: % of Leased Fee Value	26.4%		
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Source: Sonneman and Yerke, 2013

find a replacement tenant. These same problems can occur with corporate leases of highly specialized buildings, when vacant and available, for a new tenant.

### Operating Expense Estimate Risk: Economic Impact Illustration

With a normal bond lease, there is no risk of the lessor absorbing any operating expenses; however, in a federal government lease, the lessor risks incurring operating expenses when if the future annual expense is underestimated. That risk is higher than the risk of overestimating the operating expenses—because few lessors are intimately familiar with the operating expenses of systems in federal buildings. Therefore, let us make the following assumptions to quantify the impact: 1) operating expense allowance is estimated at 30 percent of effective

gross income; 2) there is a 70 percent chance that the operating expense allowance is underestimated, which requires that the lessor absorb that difference; and 3) if there is an underestimate, it is a modest underestimate in the five to 10 percent range.

*Five Percent Operating Expense Underestimate* — On the average for each year of the cash flow, the underestimate as a percent of cash flow is as follows for a five percent underestimate:

$$70\% \text{ of EGI} \times 5\% \text{ underestimate} \times (100\% - 2\% \text{ mgmt. fee}) \times 50\% \text{ probability} = 0.735\% \text{ or } 0.7\% \text{ of annual cash flow after rounding}$$

However when offset by the 30 percent chance of an overestimate, this impact is reduced by approximately 0.2 percent to a net of 0.5 percent of annual cash flow.

## Comparing Value: U.S. Government Office Leases vs. Credit Tenant Leases

*10 Percent Operating Expense Underestimate* – On the average for each year of the cash flow, the underestimate as a percent of cash flow is as follows for a 10 percent underestimate of operating expenses:

30% of EGI x 10% underestimate x (100% - 2% mgmt. fee) x 50% probability = 1.47% or 1.5% of annual cash flow after rounding

However when offset by the 30 percent chance of an overestimate, this impact is reduced by approximately 0.45 percent to a net of roughly one percent of annual cash flow.

The preceding discussion indicates a potential for a roughly 0.5–1.0 percent loss in present value of the lease cash flows from underestimating operating expense risks. If the reversion is included in a AAA tenant annual cash flow structured as in Figure 1, then the reversion represents 26.4 percent of total present value and the cash flow is 73.6 percent of total present value. So when looking at the total leased fee value, including reversion, the present value loss is in the range of 0.4 percent to 0.7 percent after rounding.

### CONCLUSION: MAGNITUDE OF ECONOMIC IMPACT FROM DIFFERENCES IN LEASE CLAUSES

On page two, the multiple categories for rating corporate bonds were discussed. For bonds that have less than investment grade ratings, the default ratings are significant. In the private sector, default rates for speculative (non-investment grade) bonds are an average of 1.08 percent for Moody's Ba rated bonds, 3.44 percent for B rated bonds and 13.84 percent for Caa-C rated bonds. These default rates are based on the period from 1920 through 2009. If the federal government experiences the three to five percent early termination rates estimated in our illustrations during the coming federal debt reduction period, these early terminations are more equivalent to speculative (non-investment grade) bonds.

Depending on the property and the lease, it appears that federal government leases contribute to a loss of present value as compared to AAA rated corporation leases. That loss of present value is summarized as follows:

### Present Value Loss Components:

Payment in arrears	0.6%
Early termination/default risk	4.6% to 6.7%
Operating expense underestimate risk	<u>0.4% to 0.7%</u>

**Preliminary range of present value loss from federal government lease**     **5.6% to 8.0%**

The present value loss from a federal agency lease, in the analysis presented by the authors, is on the rough order of five to eight percent. This is a substantial difference in present value between federal agency leases and corporate AAA leases. Based on the magnitude of the difference, it appears that the federal government agency lease under changing market conditions would not be a reasonable equivalent of a AAA credit tenant lease.

Over the next five to 10 years, the economic impact of these differences can reasonably be expected to increase as a result of greater risk of early termination of leases. That early termination risk appears to be increasingly present, regardless of what political policies are in place and which approach to the federal debt is taken.

In the authors' view, going forward, single tenant federal agency lease status as a credit tenant should be revaluated year by year, based on actual early termination experience.

### AREAS BEYOND THE SCOPE OF THIS ARTICLE

Each investment has a market rate return which is essentially the risk-free rate plus an additional risk increment or spread to account for risk. Traditionally, the long-term Treasury rate has been considered the risk-free rate. However, if U.S. Treasuries are being downgraded (as indicated in this article) where do investors go to find a new proxy for the risk-free rate? Do we use the rates applied to other countries' AAA bonds such as Canada, Germany and Switzerland—countries with strongest ratings? Or do we consider the strongest AAA corporations like Johnson & Johnson or Microsoft as an alternate risk-free rate benchmark? This question has already been introduced in contemporary business valuation literature. Like it or not, each investor eventually must wrestle with the issue. This article leaves such questions to the market and the fundamental research of analysts to decide. ■

## Comparing Value: U.S. Government Office Leases vs. Credit Tenant Leases

### ENDNOTES

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