

Guide to Using the **Free Rent Calculator**

Peng Liu, Luoyi Su, and Jan deRoos

EXECUTIVE SUMMARY

In this step-by-step guide, we show you how to use the Free Rent Calculator, which provides an accurate, visual means to quantify the impact of concessions in commercial leases based on the market conditions and landlord's risk profile. The calculator allows both landlords and tenants to benchmark the impact of free rent, tenant improvements, and moving allowance on a given set of the asking and offering rents. The calculator determines the resulting effective rent, which is equivalent to the tenant paying a constant base rent over the entire lease term.¹ The effective rent serves as a comparison benchmark, allowing users to quickly see the impact of changes to the asking rent and concession package. The tool works by allowing users to specify the structure of the rental payments, tenant improvements (TIs), and the moving allowance, and then computes the maximum free rent period in light of the specified lease terms and concessions.

Landlords can use the tool to fine-tune the concession package by determining the appropriate level of free rent that seems attractive without increasing exposure to tenant default. Tenants can use the tool to optimize the free rent and concession structure to create the most desirable pattern of monthly cash outflows from the available options.

¹ The use of "effective rent" as a comparison benchmark is well documented in the real estate literature, as evidenced by its use in the classic real estate textbooks. For example, see: chapter 9, "Income-Producing Properties: Leases, Rents and the Market for Space," in W.B. Brueggeman and J.D. Fisher, *Real Estate Finance and Investments*, 14th edition (New York: McGraw Hill/Irwin, 2011), pp. 273-277.

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Before you start, please enable macros, which allow the tool to run properly.² There are two worksheet tabs in the spreadsheet, “Free Rent” and “Cal,” that handle user input and calculations.

The “Free Rent” tab is the main tool component where you adjust leasing assumptions and get real time feedback on the suggested amount of free rent; the grey fields are for input, the yellow fields are output, and a green box indicates that the input field on its left is a dropdown menu. The “Cal” tab performs background calculations while you are entering data; you only need to use this tab in two situations: (1) to see the more precise number for the free rent period (without rounding), and (2) to change the defaults for Indexed leases (CPI or Porter’s Wage).

Below we outline the three steps to navigate through the tool. The steps are (1) finding a benchmark, (2) entering data, and (3) interpreting the results.

Three Steps to Using the Tool

Step 1. Finding Benchmark via “Market Information”

Market Information	
Property Location	New York, NY
Property Type	Office
Year	2013
Market Rent (\$/SF)	\$62.12

The top panel, “Market Information,” presents the market rent for your property’s submarket, type, and year using a REIS commercial real estate lease database. The tool automatically updates itself on a quarterly basis. The Market Rent output (in yellow) serves as a helpful reference and benchmark during negotiation process and is used to calculate the optimal amount of free rent.

² To enable Macros manually in Excel 2010 for the PC, click the “File” Tab, then “Options”, then “Trust Center”, then “Trust Center Settings”, then click the “Enable All Macros” button.

Step 2. Entering Data via “Lease Contract Information”

Lease Contract Information	
Size of Premises (SF)	10,000
Lease Term (Month)	60
Commencement Date	1/1/2013
Payment Timing	Beginning of Month
Lease Type	Step-up
Annual Escalation	5.00%
Asking Rent (\$/SF)	\$62.12
Offering Rent (\$/SF)	\$58.00
Discount Rate	10.00%
Free Rent Timing	Beginning of the Lease
Upfront Concession Options	Additional Lump-sum

The “Lease Contract Information” panel is the main input section to the Free Rent Tool. Here you change the default input parameters based on your own lease provisions. The following are the descriptions for the input variables. Note that the inputs change, depending on the various options chosen to specify the lease structure and the concessions.

- Size of Premises: the size of space to be leased, in square feet.
- Lease Term: the length of the lease, in months.
- Commencement Date: the start date of the lease.
- Payment Timing: specifies whether rent payment is at the beginning or end of each month.
- Lease Type: specifies the annual rent adjustment method with the three options detailed below:
 - “Flat” means the same monthly or annual rent over the entire lease term;
 - “Step-up” means the rent is increased each year by the percentage specified by the “Annual Escalation”; and
 - “Indexed” provides two index options—CPI and Porter’s Wage.

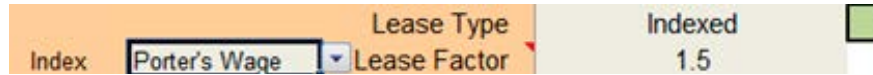
For the CPI index:

Index	CPI	Lease Type	Indexed
		Lease Factor	100.00%

The “Lease Factor” specifies the percentage adjustment of the index (e.g., 100% indicates the multiple of change in the index, meaning that if CPI increases by 2% then rent increases by $2\% \times 1 = 2\%$); to change the default CPI, please find the CPI Index Settings in the “Cal” tab and adjust CPI annual change percentages (Year 1 is the base line and should always be blank as shown below).

CPI Index Settings	
Year	% Change
1	—
2	1.93
3	1.89
4	1.86
5	1.82

For the Porter's Wage index:



“Lease Factor” specifies the pennies per penny (e.g., 1.5 means 1.5 times the penny change in wage, meaning that if porter’s hourly wage increases by 1 penny then rent increases by $1 \times 1.5 = 1.5$ pennies per foot); to change the default porter’s wage, please find Porter’s Wage Index Settings in the “Cal” tab and adjust the hourly wage for each year accordingly.

Porter's Wage Index Settings

Year	Hourly Wage
1	\$22.94
2	\$23.39
3	\$23.89
4	\$24.33
5	\$24.78

- **Asking Rent:** Landlord’s asking base rent in dollars per square foot per year. You can simply use the market rent from the “Market Information” panel if the asking rent is not available.
- **Offering Rent:** Tenant’s offered base rent in dollars per square foot per year with no concessions offered (i.e., no TI, no move-in allowance, and no free rent). Note that the difference between asking rent and offering rent serves as the foundation of the free rent calculations. In essence, the free rents and other concessions are designed such that the cost of the lease is equivalent with tenant offering rent.
- **Discount Rate:** Tenant’s borrowing rate or the potential yield for other investments with similar risk in the capital market over the lease term (also known as the opportunity cost of capital). The discount rate is used to compute the present value of the lease and its effective rent. The tool assumes the same discount rate for both landlord and tenant.
- **Free Rent Timing:** By default the free rent period is given upfront, but it can be pushed back to the end of the lease term by changing it to “End of the Lease,” or it can be spread out in alternate months by selecting “In Alternate Months.”
- **Upfront Concession Options:** The default option “Additional Lump-sum” assumes free rent is the major concession offered in the lease. Because the free rent period uses integers, the residual will be stated as the additional concession amount in a lump sum.

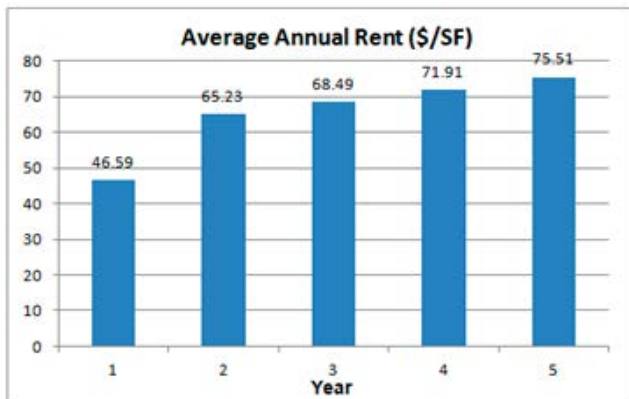
Step 3. Interpreting the Results

Cash Flow Table

The cash flow table on the top right panel (shown at right) shows the monthly net cash flow of the lease beginning at the specified commencement date for the specified space.

Average Annual Rent

The bottom left panel shows the average net rent per square foot for each year over the lease term, considering free rents, as shown below.



Date	Year	Month	Cash Flows
1/1/2013	1	1	-\$70,000.00
2/1/2013		2	\$0.00
3/1/2013		3	\$51,766.67
4/1/2013		4	\$51,766.67
5/1/2013		5	\$51,766.67
6/1/2013		6	\$51,766.67
7/1/2013		7	\$51,766.67
8/1/2013		8	\$51,766.67
9/1/2013		9	\$51,766.67
10/1/2013		10	\$51,766.67
11/1/2013		11	\$51,766.67
12/1/2013		12	\$51,766.67
1/1/2014	2	13	\$54,355.00
2/1/2014		14	\$54,355.00
3/1/2014		15	\$54,355.00
4/1/2014		16	\$54,355.00
5/1/2014		17	\$54,355.00
6/1/2014		18	\$54,355.00
7/1/2014		19	\$54,355.00
8/1/2014		20	\$54,355.00
9/1/2014		21	\$54,355.00
10/1/2014		22	\$54,355.00
11/1/2014		23	\$54,355.00
12/1/2014		24	\$54,355.00
1/1/2015	3	25	\$57,072.75

Free Rent Results

The center panel of the tool shows three results: (1) the computed free rent periods, (2) additional upfront concessions, and (3) the effective rent following free rent implementation.

The free rent computation report shown here corresponds to the selection in “Upfront Concession Options.” If you select “Additional Lump-sum,” the suggested upfront concession amount will be given along with free rent to resolve the rounding error problem, because free rent period is always given as an integer. Finally the effective rent (per square foot) is computed, taking into consideration all lease features including free rent, step-up, and lease term.

If you also want to include and customize other concession types such as TIs or move-in allowance, you can incorporate them into free rent calculations by just clicking the “Upfront Concession Options” to “Let Me Specify.” Then specify tenant improvements in dollars per square foot and the aggregate amount of move-in allowance. You will get the maximum (rounded) free rent period in response to your additional specified concessions. Please note that the free rent period is then calculated assuming that the tenant is indifferent between paying asking rent with free rent, Tis, and move-in allowance, and paying offering rent without any concessions.

Free Rent Period (Month)
3
Additional Upfront Concession
\$24,309
Effective Rent (\$/SF)
\$64.09

Upfront Concession Options	Let Me Specify	<input type="checkbox"/>
Tenant Improvement (\$/SF)	\$5.00	
Total Move-in Allowance	\$20,000.00	

Free Rent Period (Month)
2
Effective Rent (\$/SF)
\$63.61

Calculation Concept

The computational method embedded in the “Cal” tab for calculating the number of free rents is illustrated with the following example. Consider a 5-year (60 month) flat lease for a 10,000 s.f. store with landlord’s asking rent of \$60/SF per year (\$5/month/SF) and tenant’s offering rent of \$54/SF per year (\$4.5/month/SF). Assume an annual discount rate of 12% (1% monthly), and rental payment occurs at the end of each month. The goal of using free rent is to keep the \$60 nominal rate while eventually having \$54 as the effective rent. We assume the free rent is scheduled at the beginning of the lease.

Let N_1 be the number of lease months; N_2 , the number of free rent months; C_1 , the amount of monthly cash flow based on landlord’s asking rent; C_2 , the amount of monthly cash flow based on tenant’s offering rent; i , the monthly discount rate; and PV , the present value of an annuity. With the rental offer described above, $N_1=60$, $C_1=5$, $C_2=4.5$, and $i=1\%$,

$$PV_{C_1} = \sum_{n=1}^{N_1} \frac{C_1}{(1+i)^n} = C_1 \left[\frac{1 - (1+i)^{-N_1}}{i} \right] = 5 \left[\frac{1 - (1+.01)^{-60}}{.01} \right] = 224.78$$

$$PV_{C_2} = \sum_{n=1}^{N_1} \frac{C_2}{(1+i)^n} = C_2 \left[\frac{1 - (1+i)^{-N_1}}{i} \right] = 4.5 \left[\frac{1 - (1+.01)^{-60}}{.01} \right] = 202.30$$

Essentially, the amount of PV_{C_1} in excess of PV_{C_2} is the present value of free rents, or PV of free rents or $PV_f = PV_{C_1} - PV_{C_2} = 22.48$.

Here, the free rent N_2 is equivalent with the number of months of landlord’s asking rent at the beginning of lease that would yield the PV_f . This means that

$$PV_f = \sum_{n=1}^{N_2} \frac{C_1}{(1+i)^n} = C_1 \left[\frac{1 - (1+i)^{-N_2}}{i} \right] = 5 \left[\frac{1 - (1+.01)^{-N_2}}{.01} \right] = 22.48$$

We then get

$$N_2 = \frac{[\ln C_1 - \ln(C_1 - PV_f * i)]}{\ln(1+i)} = \frac{[\ln 5 - \ln(5 - 22.48 * .01)]}{\ln(1+.01)} = 4.62$$

Therefore the free rent period is 4 months (rounded down to the nearest integer). The additional upfront concession is computed using 0.62, the residual value between actual free rent of 4.62 months and the rounded calculation of 4 months. With 10,000 s.f. leased space, the tenant should receive additional upfront concession of \$29,701 or \$2.97 per square foot.

$$10,000 \times \left(PV_f - \sum_{n=1}^4 \frac{C_1}{(1+i)^n} \right) = 10,000 (22.48 - 19.51) = 29,701$$

Because the lease type in this example is a flat lease, the effective rent is essentially the tenant’s offering rent, \$54/SF per year.

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Center for Real Estate and Finance Reports,
Vol. 3, No. 2 (February 2014)

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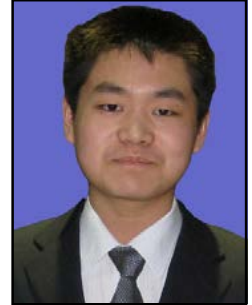
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