



## N.K Rajkumar

Registered Valuer

L&B - IBBI/RV/02/2018/10148

BE (Civil), MIE, FIV, M.Sc (Val),  
MRICS Chartered Engineer

# Meaning of Year's Purchase (yp) - Redefined

### Introduction:

Very often we come across the Valuation of commercial properties, which we need to value by Income approach or Market Approach method.

Whereas for assessing the present market value of leased properties shall be conducted by income capitalization method by adopting suitable capitalization rate. Here the cost approach & market approach are having limited application.

The Valuation of lease hold properties is a real challenging task for valuers, where the rate of return, in-turn depends on type & period of lease & lease conditions. If lease period is short, the rate of return is less and capital value will be more and if lease is of long period, it is vice – versa.

Hence, the capitalization rate is to be wisely judged before adopting the rate of return for assessing Y P and the calculation of Y P again depends on two factors on two occasions, When the income is terminable in short period, then dual rate is adopted and when income is for long period, the investor is satisfied with a single rate, in the form of remunerative rate for his investment. Hence, to assess Lessor's interest, generally YP single rate formula is adopted, and to assess Lessee's interest, generally YP dual rate formula is adopted.

After deciding the proper rate of return, the capital value of the property is fairly assessed. Wrong selection of capitalization rate leads to erroneous value. Actual market cap rate has to be assessed. The market cap rate is derived by many methods.

So, the analysis of rate of return is a vital issue in assessing of lease hold interests in real property. Here, on the outset, it is very essential to understand the real meaning of YP, rather than its definition

### **Meaning of Year's Purchase (YP), beyond its Definition:**

The capital value estimation by income capitalization method mainly depends on assessment of appropriate year's purchase, which intern depends on application of proper capitalization rate or rate of All Risk Yield (ARY) which is derived through the market analysis.

### **Year's Purchase: (YP)**

It is defined as capitalized value/sum required to be paid once and for all in order to receive annual income of Rs. 1/- for specified period of time, at specific rate of return.

The terminology states the formula that to gain an annual income of Rs 1/- at a fixed rate of interest the capital sum should be  $Rs. (1 \times 100) / \text{Rate of interest}$ .

Example: - For 5% interest, year's purchase  $100/5 = 20$ . Y P = Capital Value x Rs. 1  
Rate of Capitalization

Y P when multiplied with net income gives capital value Therefore, C V = Net income x Y P

Let us analyse the real meaning of Year's Purchase through the angle of investment process.

### **Simple analysis of Year's Purchase:**

Most investors seek to obtain a return on their invested money either as an annual income on their invested money, or as capital gain. The investor has a known sum of money to invest on which a particular return is requested.

The income can be readily calculated by a traditional method, by using simple basic formula  $\text{Income} = \text{Capital} \times \frac{100}{R}$

What capital sum should be paid for an investment producing Rs. 8,000 pa, if a return of 8% is required?

$\text{Capital} = \text{Rs. } 8,000 \times \frac{100}{8} = \text{Rs. } 1,00,000/-$

This process is known as "Capitalizing" the income into a capital sum. It is essential that the income capitalized is "net", that is clear of any expenses incurred by the investor under the lease. So, therefore, the formula can be modified to:

$$C = NI \times \frac{100}{R}$$

Where, C – Capital

NI – Net Income

R – Rate of return

For the given rate of return,  $\frac{100}{R}$  will be constant

Rate of return	$\frac{100}{R}$
6%	16.66
8%	12.50
10%	10.0
12%	8.33

This constant is known as the present value of Rs. 1 per Annum, or more commonly in real property valuation, it is called as "Years Purchase (YP)"

The formula can thus be finally modified as  $CV = NI \times YP$  Where, CV – Capital value  
NI – Net Income

YP – Year's Purchase, calculated by using  $100/R$ , will only apply to income in perpetuity, which are those received for freehold's interest let at a full market rent or rack rent.

Hence this is the base formula ( $100/R$ ) to assess YP But the actual Year's Purchase shall be calculated with two different formula's which are applicable on two different occasions, which are explained below:

There are two types of rents, the max rent that property fetches in open market is called as market rental or rack rent and treated as Full Rental Value (FRV) and notional rent estimated for owner occupied portion is called as Estimated Rental Value (ERV).

The comparison method will give rent and capital value, while the investment and residual valuation will give "Capital Value"

The investment method, thus converts the income from a property into capital sum.  
 $Income \times Year's\ Purchase\ (YP) = Capital\ Value$   $Income/Capital\ Value = Yield$   
 $Yield\ OR\ Annuity = 1/YP$

### I. Present Value of an amount of Re.1 per year (Y P Single Rate basis):

Present worth of future annual income flow for given period of time given rate of interest could give us the present market worth of the asset generating such income (this is Y P). This income flow is normally a perpetual income as only remunerative rate of interest for the perpetual income is considered is known as single rate working.

**Formula:** Present value of Rs.1/ year (Y P)

$$Y P = \frac{1 - \frac{1}{(1+R)^n}}{R} \text{ OR } \frac{1 - PV}{R}$$

Hence, Value of Asset =  $C \times YP$

PV – Present Value, R – rate of interest, n – no. of years, YP = Years Purchase, C – capital income (Annuity) receivable per year.

**Note:** The YP single rate formula shall be applied when the income expected from an asset is for long period. It means the freeholders expectation is to get only remuneration for his investment. Hence only rate of return is considered to assess YP on single rate basis.

## II. Present Value of an amount of Re.1 per year (YP Dual Rate Basis)

It is very essential sum invested also in addition to annual yield income from the asset. As two interest rates are considered for terminable income, this working is known as Dual Rate working.

One rate of remunerative interest (yield) rate for capital sum invested and second rate is interest rate for recoupment of capital invested for period after which annual income is likely to cease. In this case the income is terminable & hence provision is made for recoupment of capital has to be made.

Remunerative interest rate is higher & recoupment interest rate is minimum. This is nothing but setting aside sinking fund each year for full period, so as to get back the capital sum invested. This is also known as Redemption of Capital.

**Note:** The YP dual rate based formula shall be applied when the income is terminable for a short period.

Hence the value of lessee's interest is usually assessed by applying YP Dual rate formula. Since the investor lessee expects both remuneration for his capital invested and also intended to redeem back his capital sum, as it ceases (or erodes) after expiry of lease period. Formula: Value of Asset = NI x YP

$$i. \text{ Present Value of Re. 1 per year (YP Dual rate)} = \frac{1}{R+S}$$

$$ii. \text{ S is Sinking Fund} = \frac{r}{(1+r)^n-1}$$

R – Remunerative interest rate (expected rate of return)

r – Interest rate for recoupment of capital

n – No. of years

NI – Net Income per Annum

YP – Years Purchase

(Redemption = Recoupment)

The selection of suitable capitalization rate which directly influences the amount of Year's purchase value. Hence, the capitalization rate shall be properly worked out, which is market driven and varies from property to property in different market situation at different places in different periods. So, suitable capitalization rate or remuneration rate or rate of interests (R) has to be derived more appropriately OR

otherwise it leads to lot of variation in assessing market value. A small variation of 1% cap rate leads to higher of 8 to 10% variation in the value of the property. Hence, one should be very careful in deriving the capitalization rate more appropriately.

## CONCLUSION

Therefore, if the income derived from the property is known for a definite period, its present value can be assessed on market cap rate. So YP is present value of the property of known income derived from the asset for 'N' number of years. This is the meaning of Years Purchase; means if income derived from the asset is known, then its present value can be assessed by applying YP.

The sale instances of exact similar properties are also rarely available or not available. Henceforth, the income capitalization method is more appropriate and relevant to assess the capital value of lease hold property.

