**Earnings Power Value Calculation**

The earnings power value is calculated through the following steps:

**Step 1: Compute average Earnings Before Interest and Tax (EBIT) margin. Use 5-year average.**

EBIT/ Revenue = EBIT Margin

Ans : Ebit margin is a intrinio tag “ebitmargin” and we calculated avg 5 year

**INTRINIO TAG**  
**EBIT Margin**    
   
**Step 2: Normalize the EBIT and calculate after-tax earnings.**

The normalized earnings represent the earning capacity of the company that an investor can expect in the future.

1. **Calculate Normalized EBIT = Current Operating Revenue \* Average EBIT margin**
2. Calculate After Tax Normalized EBIT = Normalized EBIT \* (1 – Effective Tax Rate)

Ans:

1. Average Ebit Margin = Ebit margin is a intrinio tag “ebitmargin” and we calculated avg 5 year
2. Current Operating Revenue is calculated from intrinio tag “operatingrevenue” and we calculated avg 5 year
3. Effective Tax Rate is calculated from intrinio tag “efftaxrate” and we calculated 5 year avg
4. Normalized Ebit Margin = current operating revenue \* Average Ebit Margin
5. Narmalized Ebit Margin after tax = Normalized Ebit Margin \* (1 – Effective Tax Rate)

**INTRINIO TAGS**  
Nopat = (1- tax rate)   
Current Sales = Operating revenue

**Step 3: Add depreciation.  
  
Calculate Normalized profit** = After Tax Normalized EBIT + Adjusted Depreciation  
Adjusted Depreciation = (0.5 \* Effective Tax Rate) X Average Depreciation (5 years)

Ans :

1. Average Depriciation is calculated from intrinio tag “depreciationexpense” we calculated 5 year average
2. Adjusted Depriciation = (0.5 \* effective tax rate) \* Average Depriciation
3. Normalised Profit = after tax normalized ebit margin + Adjusted Depriciation

**TAGS**  
EBIT   
Depreciation   
Effective Rate

**Step 4: Calculate Average Maintenance CAPEX.**

1. Calculate Maintenance Capex = Total Capex X (1 – % Income Growth Rate)
2. Use Average Maintenance Capex = Average of Maintenance Capex in the last 5 years

Ans :

1. Average CAPEX is calculated from intrinio tag “capex” we calculated 5 year avg
2. Income Growth Rate is calculated from intrinio tag “netincomegrowth” we calculated 5 year average.
3. Average maintainance Capex = Average CAPEX \* (1-%income growth)

**TAGS**  
  
(Capex) capital expenditures   
Income growth rate: use net income growth or net income Q/Q growth   
  
**Step 5: Compute Gross Earnings Power Value.**

1. Adjusted Earnings = Normalized Profit – Average Maintenance Capex
2. Gross Earnings Power Value = Adjusted Earnings / WACC
3. Calculate WACC = E / (E+D) \* Cost of equity + D / (E + D) \* cost of debt \*(1-tax rate)

**TAGS**

* E = Diluted shares outstanding \* Price per share
* D = Total Debt
* Calculate cost of debt = last year end interest expense / avg. last two years of debt

Ans:

1. Adjusted Earnings calculated from (normalized Profit – average maintainance capex ) already calculated above
2. Diluted shares outstanding is calculated from intrinio tag “weightedavedilutedsharesos” 5 year avg
3. Price per share is calculated from intrinio tag “open\_price”
4. E = Diluted shares outstanding \* price per share
5. D = Total Debt is calculated from intrinio tag “debt”
6. cost of debt = last year end interest expense / avg. last two years of debt

**TAGS  
Interest expense  
debt**

* Calculate Cost of Equity = Risk free rate + One year beta of investment \* (Market Return - risk free rate)

Ans:

1. Risk Free Rate is calculated from intrionio URL “indices/economic/$DGS10/historical\_data/level”
2. One year of beta of investment is calculated from intrinio tag “one\_year\_beta”
3. Market Return is calculated from intrinio tag “ten\_year\_beta”
4. WACC = E / (E+D) \* Cost of equity + D / (E + D) \* cost of debt \*(1-tax rate)

**TAGS  
  
risk\_free\_rate  
Beta  
VTI = “market return” use 2-year average.**

* Tax rate

**TAGS  
Effective rate (average the last 2 years)**

1. The calculated average tax rate is limited to between 0% and 100%.
2. If the calculated average tax rate is higher than 100%, it is set to 100%.
3. If the calculated average tax rate is less than 0%, it is set to 0%.
4. If the latest Two-year Average Tax Rate is less than 0%, and it's set to 0%.

**Step 6: Compute Earnings Power Value per share.**

1. Gross Earnings Power Value = Adjusted Earnings / WACC
2. Earnings Power Value = Gross Earnings Power Value + Excess Net Assets – Debt.
3. Earnings Power Value per Share = Earnings Power Value/ Number of Shares Outstanding

Net assets are the value of a company's assets minus its liabilities. It is calculated ((Total Fixed Assets + Total Current Assets) – (Total Current Liabilities + Total Long-Term Liabilities)).  
  
**Calculate net assets = Total Assets – total liabilities**   
 **TAGS  
Total Debt  
Total assets  
Total liabilities  
Shares outstanding**

**ALTERNATE** **EPV**  
  
1. Start with "Earnings" not including accounting adjustments (one-time charges not excluded unless policy has changed). "Earnings" are "[Operating Income](https://www.gurufocus.com/term/Operating+Income/NYSE:DB/Operating-Income/Deutsche-Bank-AG).  
 **TAG: Total operating income  
TAG: Operating margin (use 5-year average)**   
**TAG: Operating revenue (use 5-year average)**  
3. Multiply average margins by sustainable revenues and then adjust for maintenance SGA. This yields "normalized" EBIT:   
 **(Average operating margin \* average 5-year operating revenue) +.25 SG&A**

1. **CALCULATE NORMALIZED EBIT to normalized EBIT as well and lets compare them.**  
   FIRST **= Current Operating Revenue \* Average EBIT margin**

SECOND **= Operating revenue\* Average EBIT margin**

**TAGS:**   
**Operating revenue**  
**Ebit Margin (5-year average)  
NOPAT** **= (1-tax rate) Use 5-year average  
  
STOP HERE AND LETS COMPARE TO KNOW BEST TO USE**  
  
**CONTINUE WITH NORMALIZED EBIT AFTER TAX**  
  
\* Calculate Normalized EBIT after tax = Multiply by one minus Average Tax Rate (NOPAT) to get   
  
**Calculation**= "Normalized" EBIT \* (NOPAT average)

5. Add back Excess Depreciation. This yields "normalized" Earnings:  
  
Excess Depreciation = Average DDA \* % of Excess Depreciation (after tax at 1/2 average tax rate)   
  
**TAG: depreciation and amortization (5-year average)  
TAG: depletion (5-year average)  
TAG: Effective tax rate**  
**Calculate Normalized Earnings = After-tax "Normalized" EBIT + Excess Depreciation**

**6. Adjusted for Maintenance Capital Expenditure:**

Maintenance Capex = Total Capex X (1 – % Income Growth Rate) use 5-year average  
  
**TAG: Capex = capital expenditure**   
**TAG: Income growth rate: use net income growth**   
1. Calculate the revenue change from the previous year. If the revenue decreased from the previous year, then the Maintenance Capital Expenditure = Capital Expenditure (positive).  
  
**TAG:** **: Capex = capital expenditure**  
  
If the revenue increased from the previous year, then calculate Net PPE as percentage of Revenue.   
  
**TAG: netppe**

7. Investors require a return of "WACC" for the risk they are taking: WACC   
  
WACC = E / (E+D) \* Cost of equity + D / (E + D) \* cost of debt \*(1-tax rate)  
  
**TAGS**

* E = Diluted shares outstanding \* Price per share
* D = Total Debt
* Cost of Equity = Risk free rate + One year beta of investment \* (Market Return - risk free rate)
* For market return use 2-year average return of VTI (VTI is an investment and you can find its returns).
* 1- Effective tax rate)  
     
  **TAG = risk\_free\_interest\_rate**
* Cost of debt:

1. Divide last fiscal year end [Interest Expense](https://www.gurufocus.com/term/InterestExpense/NYSE:DB/Interest-Expense/Deutsche-Bank-AG) by the latest two-year average debt to get the simplified cost of debt

* Tax rate: Use **NOPAT TAG** - the latest two-year average tax rate to do the calculation. The calculated average tax rate is limited between 0% and 100%.   
    
  If the calculated average tax rate is higher than 100%, it is set to 100%.   
    
  If the calculated average tax rate is less than 0%, it is set to 0%.   
    
  If the latest Two-year Average Tax Rate is less than 0%, and it's set to 0%.

**Calculate Interest bearing debt**

**TAGS:**  
**Long term debt + short term debt (should include capital lease obligations for each)  
Cash and cash equivalents  
Diluted average shares outstanding**

**Formula**  
EPV = ((Norm. Earnings – Maint. CAPEX) /Wacc + Cash and Equiv – Int. Bearing debt) / Diluted shares outstanding   
  
EPV Margin of safety = (EPV- Current price) / EPV

 Since earnings power value considers only the current profit levels of the companies, the growth stocks will be valued for much less. Furthermore, if a company is not able to maintain the current level of earnings in the future, the earnings power value method will overestimate the company’s intrinsic value.

### Earnings Power Value vs. Discounted Cash Flow

The discounted cash flow (DCF) approach of valuation assumes a growth rate to estimate a company’s future cash flows. However, different analysts may assume different growth rates; thus, the company value calculated using the DCF method varies widely.

Conversely, the earnings power value approach does not require any such assumptions and hence eliminates any speculation work. It uses numbers directly from the company’s financial statements for calculating the intrinsic value of the company.

The earnings power value approach depends on the company’s ability to maintain constant profits. Therefore, the method helps to overcome the challenges associated with the assumptions of profit margins, future growth, and cost of capital. However, the earnings power value method does not consider any variations affecting business operations.

INTRINO TAGS  
EBIT = Yes

1. EBIT is a company's operating profit without interest expense and taxes.

Maintenance Capex = Total Capex X (1 – % Income Growth Rate)  
Average Maintenance Capex = Average of Maintenance Capex in the last 5 years

Adjusted Earnings = Normalized Profit – Average Maintenance Capex  
Gross Earnings Power Value = Adjusted Earnings / WACC

**INTRINIO TAGS**  
Capex = capital expenditures = Yes  
Income growth rate: use net income growth or net income Q/Q growth = Yes  
Normalized operating profit after tax margin  
Normalized operating profit after taxes

WACC (Weighted average cost of capital).

INTRINIO TAGS  
1. Intrinio does not provide a WACC tag because it is a difficult calculation.   
2. Use intrinio industry tag   
3. Assign WACC according to industry from database.   
  
Example:

Start with "Earnings" not including accounting adjustments (one-time charges not excluded unless policy has changed). "Earnings" are "[Operating Income](https://www.gurufocus.com/term/Operating+Income/NYSE:T/Operating-Income/ATT).

2. Look at average margins over a business/Industry cycle: Average Operating Margin = 15.49%  
  
To normalize margins and eliminate the effects on profitability of valuing the firm at different points in the business cycle, it is usually best to take a long-term average of operating margins. Ideally this would be as long as 10 years and include at least one economic downturn. However, since most of companies do not have as long as 10-year history, here GuruFocus uses the latest 5 years data to do the calculation. To smooth out unusual years but reflect recent developments, we take an average of the 5 year margin.

3. Multiply average margins by sustainable revenues and then adjust for maintenance SGA. This yields "normalized" EBIT:   
  
To be conservative, GuruFocus uses an average of the 5 year revenues as the sustainable revenue.   
EPV analysis recognises that part of SG&A expenditure is made to maintain and replace the existing assets, while part is made to grow sales. Since EPV is only interested in what it costs a going concern to maintain its existing asset base, it adds back a percentage of SG&A (between 15% and 50% - this is a matter of judgment and industry knowledge) to make up for the fact that some of this expenditure went to fund growth and shouldn't be accounted for. To start off, we assume 25% for the sake of prudence.   
Sustainable Revenue = $ Mil, Average Operating Margin = 15.49%, Average Adjusted SGA = 9,382,   
therefore "Normalized" EBIT = Sustainable Revenue \* Average Operating Margin + Average Adjusted SGA = 170,624 \* 15.49% +9,382 = $35814.789096 Mil.

4. Multiply by one minus Average Tax Rate (NOPAT):

Same as average operating margin calculation, GuruFocus takes an average of the 5 years tax rates.   
Average Tax Rate = 101.23%, and "Normalized" EBIT = $35814.789096 Mil,  
therefore After-tax "Normalized" EBIT = "Normalized" EBIT \* ( 1 - Average Tax Rate ) = 35814.789096 \* ( 1 - 101.23% ) = $-440.70097982628 Mil.

5. Add back Excess Depreciation (after tax at 1/2 average tax rate). This yields "normalized" Earnings:  
  
Excess Depreciation = Average DDA \* % of Excess Depreciation (after tax at 1/2 average tax rate) = 26,482 \* 0.5 \* 101.23% = $13404.132966 Mil.  
"Normalized" Earnings = After-tax "Normalized" EBIT + Excess Depreciation = -440.70097982628 + 13404.132966 = $12963.431986174 Mil.

6. Adjusted for Maintenance Capital Expenditure:  
  
First, calculate the revenue change regarding to the previous year. If the revenue decreased from the previous year, then the Maintenance Capital Expenditure = Capital Expenditure (positive).  
Second, if the revenue increased from the previous year, then calculate the percentage of Net PPE as of corresponding Revenue.   
Third, calculate Capital Expenditure (positive) - percentage of Net PPE as of corresponding Revenue \* revenue increase.  
If [Capital Expenditure (positive) - percentage of Net PPE as of corresponding Revenue \* revenue increase] was negative, then the Maintenance Capital Expenditure = Capital Expenditure (positive).  
If [Capital Expenditure (positive) - percentage of Net PPE as of corresponding Revenue \* revenue increase] was positive, then the Maintenance Capital Expenditure = Capital Expenditure (positive) - percentage of Net PPE as of corresponding Revenue \* revenue increase.  
Fourth, GuruFocus uses an average of the 5 year maintenance capital expenditures as maintenance CAPEX.  
AT&T's Average Maintenance CAPEX = $15,937 Mil \*.

Investors require a return of "WACC" for the risk they are taking: WACC = 9%

8. AT&T's current cash and cash equivalent = $21,169 Mil.   
AT&T's current interest bearing debt = [Long-Term Debt & Capital Lease Obligation](https://www.gurufocus.com/term/Long-Term+Debt/NYSE:T/Long-Term-Debt--Capital-Lease-Obligation/ATT) + [Short-Term Debt & Capital Lease Obligation](https://www.gurufocus.com/term/Short-Term+Debt/NYSE:T/Short-Term-Debt--Capital-Lease-Obligation/ATT) = 174,081 + 25,875 = $199956 Mil.   
AT&T's current [Shares Outstanding (Diluted Average)](https://www.gurufocus.com/term/Shares+Outstanding/NYSE:T/Shares-Outstanding-Diluted-Average/ATT) = 7,205 Mil.