



# **Technical Guide for OPIC Financial Projections Model Builder Tool**

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## Document Control

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## 1. Overview

The financial projections model builder tool is designed to allow applicants and OPIC personnel to create basic project financial projections quickly and efficiently. This technical guide is for experienced modelers who need to know how every line of the template is programmed in order to be able to make modifications as needed for particular projects.

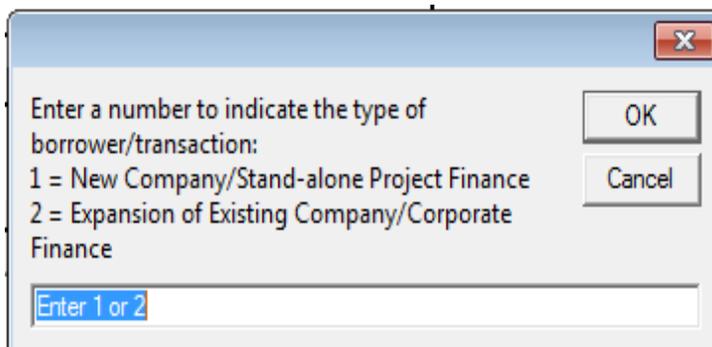
## 2. Start Worksheet

The **Start** worksheet (shown below) requires the input of **three** key pieces of information and includes a “Print” button that will allow the user to print out the workbook output pages at any time.

The screenshot shows a form with the following elements:

- Enter Project/Company Name:** A text box containing "Sample Company".
- Choose Type of Transaction:** A button with a light gray background.
- Enter Today's Date:** A text box containing "3/13/2013".
- Print Workbook:** A button with a light gray background located below the main form.

- Cell C6: The user enters the name of the Project/Company. Entering the information here will cause it to carry over to the top of every worksheet in the workbook.
- **Choose Type of Transaction.** This is a macro button associated with a macro called “Configure for Transaction Type.” The “Configure for Transaction Type” macro combines two other macros: “Hide Historical Data Sheet” and “Unhide Historical Data Sheet.” When the user clicks on the box and runs the “Configure for Transaction Type” macro, a dialogue box will appear that allows the user to choose whether the project/company is new or an expansion. If the user chooses “1” for a new project/company, it will run the “Hide Historical Data Sheet” macro (which also hides any historical data columns and rows on the output worksheets). If the user chooses “2” for an expansion of a company, it will run the “Unhide Historical Data Sheet” macro (which also un-hides any historical data columns and rows on the output worksheets).



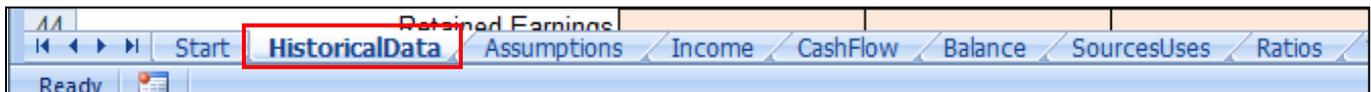
- Cell E13: The user types in the current date on the day the projections are started. This sets the “base year” for the projections by determining the years that will be listed on all other worksheets. If the Historical Data worksheet is used, the three historical years listed will be the three fiscal years (ending with December 31) immediately prior to the current year. On the **Assumptions** worksheet, the first year listed will be the year of the current date. For example, if the user enters 3/27/2013, the three historical years will be 2010, 2011 and 2012 and the base year of the projections will be 2013.

**Tip:** If the user is starting to create the model close to the end of the calendar year, they may want to enter January 1 of the following calendar year in that field since that will be the actual base year in which the OPIC loan origination process occurs.

- **Print Workbook:** This is a macro button associated with the “Print Workbook” macro. The macro is programmed to print the following worksheets: **Assumptions, Income, Cash\_Flow, Balance, Sources\_Uses, and Ratios.**

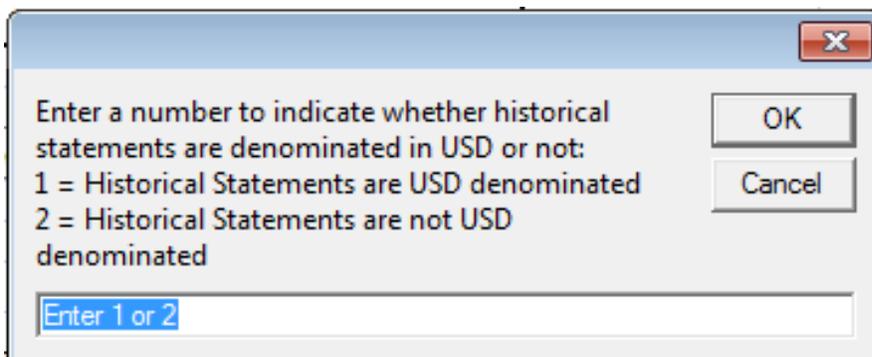
### 3. Historical Data Worksheet

The **Historical Data** worksheet will only be visible if the user has chosen “**Expansion of Existing Company/Corporate Finance**” as the transaction type on the **Start** worksheet. If the transaction type is a “New Company/Stand-alone Project Finance,” then the **Historical Data** worksheet will be hidden.



The **Historical Data** worksheet allows the user to enter up to three (3) years of historical financial statements.

- **Choose Currency of Statements:** This is a macro button associated with the “Configure for Currency” macro. The “Configure for Currency” macro combines two other macros: “Show Exchange Rate Rows” and “Hide Exchange Rate Rows.” When the user clicks on the box and runs the “Configure for Currency” macro, a dialogue box will appear that allows the user to choose whether the historical statements are denominated in USD or not denominated in USD. If the user chooses “1” for historical statements that are denominated in USD, it will run the “Hide Exchange Rate Rows” macro. This macro hides the rows in which the user would have entered exchange rates as well as the rows in which the conversion to USD would have been calculated. If the user chooses “2” for historical statements that are not denominated in USD, it will run the “Show Exchange Rate Rows” macro. This macro un-hides the rows in which the user can enter statement currency/USD exchange rates as well as the rows in which the statement currency accounts are converted to USD.



- In row 4, the worksheet reminds the user to enter data in “thousands” of currency units (no matter which currency the data is in). The rest of the template calculates projections in “thousands of USD,” so it is important to put in any historical data in the same format so that the numbers align from year to year.
- Row 6: The historical years are calculated based on the “current” year entered into cell E13 on the **Start** worksheet.
- Row 7: For each statement entered, the user is asked to choose from the drop-down what type of statement it is (i.e. Audited, Company Prepared, etc.). These drop-down lists are populated from a hidden list typed into cells K12 to K16 on the same worksheet. The user should not change these categories.
- *Row 10: This row will only show if the user is entering statements not denominated in USD. Otherwise it will be hidden. If it is showing, then the user will enter a “statement currency/USD” exchange rate for each year.*
- Rows 14 to 69: The user will type in the amounts (in “thousands” of units) for each line item in the historical balance sheets and income statements.
  - Row 47: Total Assets must equal Total Liabilities and Net Worth in each period. If they don’t, the worksheet will provide an error message in this row.
- **Convert to USD:** *This is a macro button that will only show if the user is entering statements that are not denominated in USD. Otherwise it will be hidden. Pressing this button will run the “USD Conversion” macro. This macro hides the input in rows 14 to 69 and shows only the converted (i.e. USD denominated) numbers in rows 77 to 131.*
- **Re-open Entry Fields:** *This is a macro button that will only show if the user is entering statements that are not denominated in USD. Otherwise it will be hidden. If the user has already run the “USD Conversion” macro but needs to un-hide the input fields in rows 14 to 69 to edit some data, they can push the “Re-open Entry Fields” button to run the “Re-open Entry Fields” macro. This macro will automatically un-hide rows 14 to 69 for editing.*
- **Rows 77 to 131:** *These rows will only be used if the user is entering statements that are not denominated in USD. Otherwise they will be hidden. The cells in these rows contain formulas translating the statement currency into USD using the exchange rates provided by the user. The user should not edit these formulas.*
- Rows 135 to 140: These rows record the year-to-year changes in retained earnings and other equity components (as well as year-to-year changes caused by exchange rate changes, if relevant). If there is a large number in either cell C139 or cell D139, that likely indicates an error in the input of data. For instance, the user may have forgotten to enter information about a dividend or share issuance/equity contribution in rows 64 to 69.

#### 4. Assumptions Worksheet

Users inputting all transactions types will use the **Assumptions** worksheet to enter their assumptions regarding revenues and various types of costs. The first year in the **Assumptions** worksheet is the calendar year of the current date entered on the “Start” worksheet. Including the current year, the **Assumptions** worksheet allows for thirteen (13) years of data

46							
47	<b>US Dollar Costs</b>						
48	Operating Expense (\$000s)			0	0	0	0
49	Operating Expense (\$000s)			0	0	0	0

Excel Tab Bar: Start, **Assumptions**, Income, CashFlow, Balance, SourcesUses, Ratios

## 4.1 Revenue Assumptions

- Cells A5, A11, A17 and A23: The user enters the names of the products/lines of business/revenue categories. Entering the names of the product lines in these cells will create correct labels in cells A9, A15, A21 and A27 (which include a CONCATENATION formula) as well as create correct labels of the different product lines broken out on the **Income** worksheet (cells A6, A7, A8, and A9).
- Rows 6, 12, 18 and 24: The user enters the projected number of units of product expected to be sold in each time period.
- Rows 7, 13, 19 and 25: The user enters the average price per unit in the currency in which it is to be sold (either local currency or USD).
- Cells D8, E8 and F8: The user enters 3 years of projected local currency/USD conversion rates. If the sales are in USD, the user leaves the entry in these three cells at 1.00. Given the volatility of exchange rates, OPIC prefers to project exchange rates for only the first three years of the project and then hold them constant. These same projected exchange rates will be used for other sections where the user is allowed to enter local currency information – see local operating expenses below.
- Rows 9, 15, 21 and 27: These rows contain formulas that multiply the number of units sold by the price per unit, multiply by the exchange rate, and divide by 1000 (since the model is in thousands of USD).
- If the Company/Project has more than 4 distinct products/lines of business, the user may insert additional lines by inserting rows into the **Assumptions** worksheet, copying rows 23 to 27, and ensuring that the rows that contain revenues from each additional line of business are included in the Total Sales Revenues (currently row 29). Moreover, the user must add rows to the **Income** worksheet between rows 9 and 10, copy the formulas in row 9 and make sure that the numbers in the added rows are included in the “sum” formula in the “Gross Revenues” row (currently row 10).
- **If the calculation of revenue for a particular project is much more complex than (units sold) \* (price per unit)\*(exchange rate) ÷ 1000, then an experienced modeler should feel free to replace the inputs and calculations in this section with inputs and calculations that better reflect the revenue generation details of their particular project. They just need to make certain that the result of the calculations is total annual revenues denominated in thousands of USD and that all of the revenue ties over into the revenues section of the Income worksheet.**
- There shouldn't be any reason for the user to change these, but the inputs for the drop-down menus that let the user indicate if a product is “existing” or “new” are over in column “S.”

## 4.2 Operating Cost Assumptions

- Row 33: The user enters the percentage of revenues required to cover the direct cost of goods sold (the materials and labor used directly to produce a product or service rather than “overhead” costs like rent, utilities, marketing, etc.). If there are numerous product lines, this percentage may be a weighted average number derived through a complex analysis of the materials and labor required to produce each line of revenue. If the user feels that it would be helpful to provide this information in the model, then the user should create an additional worksheet for these detailed calculations and in row 33 of the Assumptions worksheet refer to the weighted average percentage calculated on the additional worksheet.
- Cells A38 to A42: The user enters the names of local currency indirect operating expenses. These are “overhead” expenses such as rent, utilities, marketing, insurance, day-to-day legal or accounting services, etc. Entering these names will ensure that they show in the operating expenses section of the **Income** worksheet. **Important note: Do not include depreciation/amortization in this expense**

**section.** Depreciation is an overhead expense that companies would normally include in this section, but OPIC prefers to break it out separately, so it will be calculated in a later section.

- Rows 38 to 42: Enter estimated local currency indirect operating expenses in thousands of local currency units. At present, the model requires the user to enter expense assumptions for each year. This assumes that each line item is not expected to increase or decrease at a constant rate year-to-year. If the user does expect certain line items to increase at a constant rate year-to-year, then:
  - a. enter a “base” expense level in the first column;
  - b. enter a formula in the second column with syntax: (cell reference for base level in first column) multiplied by (1+% of expected annual increase) -- For example, if we want the cell in E38 to be 5% higher than D38, insert the formula =D38\*(1+.05).;
  - c. copy the formula in the second column all the way across the row.
- In Row 45, the model will convert the local currency expenses into USD by multiplying total local currency cost by the exchange rate that the user entered in row 8.
- Cells A48 to A52: Enter the names of USD indirect operating expenses. Note: some of the names may be the same as those in cells A38 to A42. For instance, the Company/Project may pay some salaries in local currency and some in USD. Again, do not include depreciation/amortization in this section.
- Rows 48 to 52: Enter estimated USD indirect operating expenses denominated in thousands of USD. If the user wishes to “inflate” the USD expenses at a constant rate rather than entering assumptions for each year, follow the instructions in point 3 above.

NOTE: If there are certain indirect operating expenses (e.g. legal or other professional fees) that are being incurred in the pre-operating (i.e. construction/startup) period, and those expenses are being counted as part of the project cost, the user should not enter them in this section. Those “development” expenses should be entered into the CAPITAL COSTS section described below.

### 4.3 Capital Cost Assumptions

The Capital Costs section of the **Assumptions** worksheet allows the user to enter up to ten separate capital cost line items.

- Cells A58 to A67: Enter names of project capital cost line items. May include hard asset costs (i.e. building, equipment, furniture, computers) and soft asset costs (i.e. licenses, development costs, legal expenses) incurred in construction/establishment of the project. Entering these names will ensure that they are listed in the non-current assets section of the **Balance** worksheet. If the user needs to add rows for additional capital cost line items, they may insert rows between rows 67 and 68 for this purpose. However, they must ensure that the amounts entered into those rows are included in the sum of capital costs (currently row 68). The user must also ensure that they add rows to the **Balance** worksheet between rows 26 and 27 and copy the formulas from row 26.
- Rows 58 to 67: Enter capital cost amounts in thousands of USD.

Note: **Even if the user considers OPIC interest/fees during construction and start-up working capital as project costs, do not enter them in this section.** Interest/fees and working capital are calculated in later sections.

## 4.4 OPIC Debt Assumptions

- Cell D73: The user enters the proposed amount of the OPIC loan denominated in thousands of USD.
- Cell D74: The user enters the base interest rate (i.e. the cost of funds). OPIC's direct loan product uses rates provided by the U.S. Treasury as the base rate. OPIC's investment guaranty product may use a U.S. Treasury rate (fixed or floating) or a LIBOR-based rate. Please discuss what is appropriate with your OPIC contact.
- Cell D75: The user enters the interest risk spread. OPIC charges a spread above the base interest rate to cover credit risk. Please discuss the estimated potential spread with your OPIC contact to get the appropriate rate.
- Cells D77 and D78: The standard OPIC commitment fee is 0.50% per annum on undrawn amounts. The standard OPIC facility fee (paid up front before or at the first disbursement) is 1%. Under certain circumstances, these fees may be adjusted. Please discuss with your OPIC contact.
- Cells D79 and D80: The user enters the proposed term of the loan (in months) and any grace on principal repayment (in months). For instance, a five-year loan with a grace period of 1 year would be entered as 60 months and 12 months, respectively. OPIC does not offer a grace period on interest payments, though they are often paid from the loan proceeds during this period.
- Cell D81: The user enters the number of payments the Company/Project will make per year -- enter the number 4 for quarterly or the number 2 for semi-annual. These are the two most common payment frequencies for OPIC projects. If the project has a monthly or other payment schedule, the modeler may want to create a debt service schedule on another worksheet and link it in to this section.
- Cell D82: The user enters the estimated date of the first loan disbursement. **Do not use either January 1 or December 31 as a disbursement date.**
- Cell D83: The formula in this cell is very simple. It takes the first disbursement date and adds the length of the grace period to determine the first principal repayment date. Note: In its loan documentation, OPIC generally chooses fixed payment dates (e.g. March 15, June 15, September 15 and December 15) rather than letting payment dates be dictated by the disbursement date and the length of the payment period. So, the model will not exactly replicate the likely payment schedule, but the differences are too minor to be material to the results.
- Cell D84: This is also a simple formula that takes the first disbursement date and adds the term of the loan to determine the loan maturity date. Again, because of the way that OPIC sets payment dates, the actual maturity date is unlikely to be exactly "x" years from the first disbursement date, but the difference is immaterial for modeling purposes.
- Cell D85: The formula uses the first principal payment date, the maturity date and the frequency of payments to determine how many principal payments the Company/Project will make.
- Cell D86: Allows the user to specify if the principal payments should be "straight-line" (equal principal payments, decreasing interest payments) or "mortgage-style" (level P+I payments). OPIC rarely approves mortgage-style since it has the effect of "back-ending" the principal amortization and increasing the total interest paid, but it is an option that can be discussed with your OPIC contact if it is appropriate for a particular transaction.
- Rows 88 and 89: These are complex formulas that determine in each year how many principal payments there would be if the Company/Project is paying quarterly or semiannually, respectively. If the user is not able to activate the "Toolpak" add-in (see Appendix A for help), these formulas will likely not function. If that is the case (which should be very rare), then the user may need to delete these formulas and calculate the principal amortization in row 95 manually.
- Row 90: Lists the actual number of principal payments the Company/Project will be making in each year based on the frequency listed in cell D81 and the number of payments for that periodicity listed in either row 88 or row 89.
- Row 91: Calculates the annual starting balance of the loan. It is "zero" in the first year. Each other year refers to the closing balance from the previous year (in row 97)

- Row 92: The user enters proposed loan disbursements (denominated in thousands of USD) on an annual basis (i.e. if the user expects more than one disbursement in a particular year, add them together and put all in one year). Assume that there will be no disbursements after the grace period is over (i.e. disbursements and repayments can't be happening simultaneously). **The total cumulative amount of the disbursements must equal the loan amount in cell D73.**
- Row 93: The formulas in this row calculate the amount of facility and commitment fees in each period. The facility fee will occur in the first year only, whereas the commitment fees will be calculated so long as there is an undisbursed loan amount.
- Row 94: Cell D94 calculates the interest on the first year's disbursement amount from the date of the first disbursement until the end of the year. **If the "straight-line" principal amortization has been chosen**, all other cells in this row take the average of the beginning and ending balances (from rows 91 and 97) and multiply them by the annual interest rate. This is because it is impossible to know when during the year the disbursements were made. This does not give an exact result since it is unlikely that the year's disbursements occurred exactly halfway through the year, but a greater level of detail is not required in a projections model of this type. **If the "mortgage-style" principal amortization has been chosen**, all the other cells in this row pull interest calculations from a lookup table on a hidden sheet that calculates the mortgage-style P+I payment stream. The detailed calculation sheet has been hidden to make the model look cleaner. If the user wants to see that sheet, go to the "hide and unhide" feature on the "format" menu and choose "unhide sheet."
- Row 95: **If the "straight-line" principal amortization has been chosen**, the cells in this row multiply the amount of a single straight-line principal payment by the number of principal payments in the period listed in row 90. **If the "mortgage-style" principal amortization has been chosen**, all the other cells in this row pull principal calculations from a lookup table on a hidden sheet that calculates the mortgage-style P+I payment stream. The detailed calculation sheet has been hidden to make the model look cleaner. If the user wants to see that sheet, go to the "hide and unhide" feature on the "format" menu and choose "unhide sheet."
- Row 96: Sum of rows 93 through 95.
- Row 97: Calculates the annual ending balance of the loan by taking the starting balance, adding any disbursements and subtracting any principal payments.

WARNING: The formulas in cells D83 to D85, in rows 88 and 89 and on the hidden "mortgage-style" worksheet require that the "Tookpak" add-in be active in Excel. If the user is unable to activate the Tookpak add-in (see Appendix A for help), then the formulas in these rows should be erased, and the interest and repayment schedules in rows 94 and 95 should be entered manually.

## 4.5 Other Senior Debt Assumptions

If there is other senior debt in addition to the OPIC loan, this section will allow the user to enter information about the terms associated with that facility.

- Cell B100: The user enters the name of the lender. If there is more than one other senior lender, the user should enter all names with dashes between them.
- Cell D101: The user enters the annual interest rate on the non-OPIC senior debt facility. If there is more than one such facility, the user should enter the weighted average rate.
- Row 103: Calculates the annual starting balance of the facility. If the user has filled in the **Historical Data** worksheet and the most recent historical year's balance sheet included senior debt, then the first year of this balance will carry over the balance from the historical balance sheet. Otherwise, it will be zero. Each other year refers to the closing balance from the previous year (in row 109).
- Row 104: The user enters proposed loan disbursements (denominated in thousands of USD) on an annual basis (i.e. if the user expects more than one disbursement in a particular year, add them together and put all in one year).

- Row 105: The user enters any non-interest fees expected to be charged by other lender(s).
- Row 106: Calculates the annual interest by taking the average of the beginning and ending balances (from rows 103 and 109) and multiplying them by the annual interest rate in cell D101. This is a rough approximation of the interest because it is impossible to know when during the year the disbursements were made. This does not give an exact result since it is unlikely that the year's disbursements occurred exactly halfway through the year, but a greater level of detail is not required in a projections model of this type.
- Row 107: The user enters expected principal repayments. If it is possible to enter a formula calculating repayments based on the terms of the facility, the user is free to enter one. They should just make sure that the amortization schedule matches the terms of the facility (i.e. the balance doesn't end up negative, etc.).
- Row 108: Sum of rows 105 to 107.
- Row 109: Calculates the annual ending balance of the loan by taking the starting balance, adding any disbursements and subtracting any principal payments.

## 4.6 Short Term Debt Assumptions

Sometimes OPIC may allow a Project/Company to carry short term debt facilities to cover short term liquidity needs. These facilities may be "evergreen" or "revolving" facilities that the Project/Company uses as necessary throughout the life of the project.

- Cell B112: The user enters the name of the lender. If there is more than one short term lender, the user should enter all names with dashes between them.
- Cell D113: The user enters the annual interest rate on the short term debt facility. If there is more than one such facility, the user should enter the weighted average rate.
- Row 115: Calculates the annual starting balance of the facility. If the user has filled in the **Historical Data** worksheet and the most recent historical year's balance sheet included short term debt, then the first year of this balance will carry over the balance from the historical balance sheet. Otherwise, it will be zero. Each other year refers to the closing balance from the previous year (in row 121).
- Row 116: The user enters proposed loan disbursements (denominated in thousands of USD) on an annual basis (i.e. if the user expects more than one disbursement in a particular year, add them together and put all in one year).
- Row 117: The user enters any non-interest fees expected to be charged by other lender(s).
- Row 118: Calculates the annual interest by taking the average of the beginning and ending balances (from rows 115 and 121) and multiplying them by the annual interest rate in cell D113. This is a rough approximation of the interest because it is impossible to know when during the year the disbursements and repayments were made. Because the balance of a revolving facility can be highly variable throughout the year, if the user has a formula that better approximates the average balance and the interest paid on it, they should feel free to replace the formulas in this row.
- Row 119: The user enters expected principal repayments. Again, a revolving facility may be highly variable. The user should enter estimates that give the best reflection of expected average and year-end balances.
- Row 120: Sum of rows 117 to 119.
- Row 121: Calculates the annual ending balance of the loan by taking the starting balance, adding any disbursements and subtracting any principal payments.

## 4.7 Subordinated Debt Assumptions

Sometimes investors may structure certain equity contributions as subordinated debt due to local legal or tax structures, or sometimes OPIC may allow a Project/Company to use a subordinated facility from a third party lender.

- Cell B124: The user enters the name of the subordinated debt investor/lender. If there is more than one, the user should enter all names with dashes between them.
- Row 127: Calculates the annual starting balance of the facility. If the user has filled in the **Historical Data** worksheet and the most recent historical year's balance sheet included subordinated debt, then the first year of this balance will carry over the balance from the historical balance sheet. Otherwise, it will be zero. Each other year refers to the closing balance from the previous year (in row 132).
- Row 128: The user enters proposed loan disbursements (denominated in thousands of USD) on an annual basis (i.e. if the user expects more than one disbursement in a particular year, add them together and put all in one year).
- Row 129: The user enters any fees or interest that OPIC allows to be paid on this facility. OPIC treats subordinated debt as "deeply subordinated" – i.e. it acts like equity. So any fees or interest would likely have restrictions similar to OPIC's restrictions on dividend payments (see below).
- Row 130: The user enters any principal repayments that OPIC allows to be paid on this facility. Again, since OPIC would likely consider this facility to act like equity, there would be restrictions on repayments.
- Row 131: Sum of rows 129 and 130.
- Row 132: Calculates the annual ending balance of the loan by taking the starting balance, adding any disbursements and subtracting any principal payments.

## 4.8 Equity and Dividend Assumptions

- Row 136: Calculates the annual starting equity balance. If the user has filled in the **Historical Data** worksheet and the most recent historical year's balance sheet included equity, then the first year of this balance will carry over the balance from the historical balance sheet. Otherwise, it will be zero. Each other year refers to the closing balance from the previous year (in row 138).
- Row 137: The user enters new cash equity to be contributed denominated in thousands of USD. If this is a start-up project (i.e. there is no **Historical Data** worksheet sheet) and investors have already invested equity, that total should be included in the first year contribution.
- Row 138: Calculates the ending equity balance by taking the starting balance in row 136 and adding any equity contributions from row 137.
- Row 140: Calculates the beginning retained earnings balance. If the user has filled in the **Historical Data** worksheet and the most recent historical year's balance sheet included retained earnings, then the first year of this balance will carry over the balance from the historical balance sheet. Otherwise, it will be zero. In all other years, it takes the ending retained earnings balance from the previous year in row 144.
- Row 141: Records net income for each year from the **Income Statement** tab (row 39).
- Row 142: The user enters the percentage of each year's net income that will be paid out in dividends. Be mindful of the fact that OPIC does not allow borrowers to pay dividends until the project is established (has reached "completion" in OPIC-speak) and that OPIC generally restricts dividend payments to a pre-agreed level (or requires payments over that amount to trigger an equal amount of loan pre-payment).
- Row 143: Calculates the amount of dividends paid in each year by multiplying the net income in row 141 by the dividend percentage in row 142. If net income is negative, it will calculate zero.

- Row 144: Calculates ending retained earnings by taking the beginning retained earnings balance, adding net income for the year and subtracting dividends paid.

## 4.7 Income Tax Assumptions

The Income Tax section of the **Assumptions** worksheet allows the user to input the estimated annual tax rate that will be charged on the earnings of the project (Row 148). This rate is applied to earnings after depreciation and interest (see formula in row 35 of the **Income** worksheet). If the project benefits from any tax credits or exemptions that affect the rate at which the company is taxed or the amount of taxable net income, these effects should be captured by calculating the effective profit tax rate the company faces over all its income. If the exemptions are numerous or complex, it may be advisable to capture all of the tax effects in a separate spreadsheet. This spreadsheet can be used to calculate the annual effective tax rate as a share of all income and linked to this row.

In some cases, a project will have a tax holiday of a certain number of years, and the user will leave the rate at 0% for those periods.

## 4.8 Depreciation/Amortization Assumptions

The Depreciation/Amortization section of the **Assumptions** worksheet allows the user to input assumptions regarding the time period over which the project's "hard assets" will be depreciated.

- Cell D152: Enter the year in which depreciation of project assets will begin. Usually assumed to be the current calendar year for an expansion of an existing company or the calendar year in which operations are expected to begin for a start-up project.
- Cell B154: Row 154 will only be visible if the user has filled in the **Historical Data** worksheet (i.e. it is the expansion of an existing company with existing fixed assets). In this cell, the user will fill in the weighted average number of years over which to depreciate the existing fixed asset base.
- Cells A155-164: The model picks up the names of each asset to be depreciated/amortized from Cells A58 to 67 above.
- Cells B155-164: Enter the approximate number of years over which each asset will depreciate. In some countries, the tax codes are so rudimentary that the user may not know the right number of years for most assets. Getting the level of depreciation just right is only critical if the income tax rate is high because depreciation is a deduction used in calculating taxable income.
- Rows (154) 155 to 164: In columns D through P, the model calculates the annual amount of depreciation for each item by taking the sum of expenditure on each item (from the Historical Data worksheet, if relevant, and from rows 58 to 67) and dividing it by the number of years of depreciation for that item (cells B154/B155 to 164), starting in the year entered in D152 and ending when the number of years of depreciation for each item has completed.
- Row 165: Sum of Rows 154/155 to 164.

## 4.9 Working Capital and Debt Service Reserve Assumptions

Net working capital is the amount of "liquidity" a company/project requires and is generally defined as (receivables + inventory)-(payables). The start-up working capital required by a new company, or a sudden increase in working capital required by an expanding company, can be a significant cash expense during the start-up or expansion period. So, providing a realistic estimate of the magnitudes of receivables, inventory and payables is an important part of the projections.

- Row 168: For each year, the user enters the number of days of receivables that they estimate will be carried on the balance sheet at the end of that year. NOTE: The receivables account on the **Balance** worksheet (Row 9) is calculated by multiplying the number of days of receivables by the average daily revenue of the business (**Income** worksheet, Row 10 divided by 360). It represents the

number of days of revenue that customers owe to the project company at any one time. If customers pay the project company cash at the time of the transaction, receivables may be very low or zero. If the project company allows customers to pay over time, receivables will be higher. Moreover, if the local market is such that many customers are likely to pay late, a higher amount of receivables days should be estimated.

- Row 169: For each year, the user enters the number of days of inventory that they estimate will be carried on the balance sheet at the end of that year. NOTE: The inventory account on the **Balance** worksheet (Row 10) is calculated by multiplying the number of days of inventory by the average daily cost of goods sold (**Income** worksheet, Row 12 divided by 360). It represents the number of days of product that the business expects to have in stock at any one time. This will vary significantly depending upon the type of business. Some types of business carry little to no inventory; others may carry a few months worth.

NOTE: Both receivables and inventories are considered “uses of cash” because they represent output that the project company has provided to customers or has stocked but for which it has not yet been paid. During the start-up or expansion period of the project, these costs may be considered project costs.

- Row 170: For each year, the user enters the number of days of payables that they estimate will be carried on the balance sheet at the end of that year. NOTE: The payables account on the **Balance** worksheet (Row 36) is calculated by multiplying the number of days of payables by the average daily costs (both direct and overhead) of the business (**Income** worksheet, sum of Row 12 and Row 25 divided by 360). It represents the number of days of cost that the project company owes to its vendors, labor, etc. at any one time. If vendors have provided the company with relatively generous payment terms, the days of payables will be larger.

Note: Payables are considered a “source of cash” because they represent goods or services that the project company has received but not yet paid for. Payables are subtracted from the sum of receivables and inventory for the purpose of calculating the net project cost attributable to working capital requirements.

OPIC generally requires that projects maintain a restricted cash account that could be used as an emergency reserve in the event that a short-term liquidity crisis prevents the project from making a debt service payment.

- Row 171: Enter the number of months of debt service that OPIC requires the project company to place in a restricted cash account. This reserve is generally sized to cover several months of projected debt service (6-12 months is common), and it is generally funded at the beginning of the project. Please discuss the potential size of such a reserve with your OPIC contact and when such an account should be established. Currently, the model assumes that the reserve account balance declines gradually with the debt service payments before being entirely released to the project upon loan maturity.

## 4.10 Cost of Capital Assumptions

Finally, the **Assumptions** worksheet calculates the weighted average cost of capital (WACC) that will be used to determine the net present value of the project.

- Cells B174 to B176: References the amount of the OPIC loan (from cell D73), the amount of other senior debt (sum of disbursements in Row 104) and the total amount of subordinated debt and equity (sums of disbursements from rows 128 and 137) in order to calculate the total project capitalization in cell B177.

- Cells C174 to C176: Calculates the % of OPIC debt, % other senior debt and % of equity/subordinated debt that make up the project capitalization.
- Cell B179: Calculates the weighted average cost of senior debt (based on interest rates of OPIC debt – D76 - and other senior debt – D101).
- Cell B180: The user enters the approximate rate of return that sub-debt/equity investors expect to receive.
- Cell B181: Calculates the weighted average cost of capital by multiplying the cost of debt by the % of debt and the cost of equity by the % of equity and adding the two numbers.

## 5. Output Worksheets

Once the user has filled out the relevant sections of the **Assumptions** worksheet (and, if applicable, the **Historical Data** worksheet), the template will build projected financial statements and perform ratio analysis. The user may need to execute small (usually cosmetic) changes to the other worksheets for presentation purposes.

### 5.1 Income Worksheet

The **Income** worksheet shows the income, or profit and loss, statement that has been generated using the assumptions entered on the **Assumptions** worksheet. This worksheet shows the revenues and operating expenses, both in absolute terms (\$000s of USD) and in percentage terms so that the user can readily see what each product line contributes to total revenue, the percentage of total revenue spent on each expense line item, and the net profit margin of the project.

*Note: If the user completed the Historical Data worksheet, then data pulled from that worksheet for the most recent year of actual historical income statement information will show in columns D and E. If not, these columns will be hidden.*

#### **REVENUES**

- Rows 6 through 9: Reference the revenue for each line of business as calculated on the **Assumptions** worksheet (Rows 9, 15, 21 and 27). Note: If any of these lines is blank because the project had less than four lines of business, feel free to “hide” those rows for a neater presentation. Do not delete them as that may produce errors elsewhere. If the project has more than four lines of business, make sure to add new rows for these additional lines of business on the **Assumptions** worksheet and to add a row or rows in this section of the **Income** worksheet that reference the new revenue lines on the **Assumptions** worksheet to ensure that all revenues are captured.
- Row 10: Sum of Rows 6 through 9.

#### **OPERATING EXPENSES**

- Row 12: References the cost of product sold calculated on the **Assumptions** worksheet (row 34).
- Rows 15-19: References the local currency overhead costs from the **Assumptions** worksheet (rows 38 to 42) and translates them into USD using the exchange rate from the **Assumptions** worksheet (row 44). Note: If any of these lines is blank because the project has less than five categories of local currency overhead costs, feel free to “hide” those rows for a neater presentation. Do not delete them as that may produce errors elsewhere. Likewise, if the project has more than five categories of local currency overhead expenses make sure to add new rows for these additional

expense categories on the **Assumptions** worksheet and corresponding new rows in this section of the **Income** worksheet to ensure that all local currency expenses are captured.

- Rows 20-24: References the USD overhead costs from the **Assumptions** worksheet (rows 48-52). Note: If any of these lines is blank because the project has less than five categories of USD overhead costs, feel free to “hide” those rows for a neater presentation. Do not delete them as that may produce errors elsewhere. Likewise, if the project has more than five categories of USD overhead expenses make sure to add new rows for these additional expense categories on the **Assumptions** worksheet and corresponding new rows in this section of the **Income** worksheet to ensure that all USD overhead expenses are captured.
- Row 25: Sum of Rows 15 to 24 (total overhead costs).

### GROSS OPERATING PROFIT/EBITDA

- Row 27: Gross revenues (Row 10) minus Cost of Goods Sold (Row 12) minus total Overhead Expenses (Row 25) equals Gross Operating Profit, also called EBITDA. In many industries, EBITDA is an important benchmark that may be used to gauge operating profitability, and in some instances financial covenants may be based on it. That is why OPIC does not include depreciation/amortization in the summary of other overhead expenses so that EBITDA may be calculated directly.

### DEPRECIATION/AMORTIZATION AND FINANCIAL EXPENSES

- Row 29: References the annual charge for depreciation/amortization calculated on the **Assumptions** worksheet (row 165).
- Row 31: Calculates Earnings before Interest and Taxes (EBIT) by subtracting depreciation/amortization (row 29) from EBITDA (row 27).
- Row 33: Takes the negative of the sum of all of the interest and fees on all of the debt facilities detailed on the **Assumptions** worksheet (rows 93 and 94 for the OPIC loan, rows 105 and 106 for other senior loans, rows 117 and 118 for short term debt and row 129 for subordinated debt). (If there is **Historical Data**, it could be either a positive or negative number.)
- Row 35: Calculates the income taxes payable by multiplying the tax rate from the **Assumptions** worksheet by the taxable income (EBIT minus interest/fees – Row 31 *plus* Row 33, which is a negative number). If the taxable income is negative, the formula returns a result of zero.
- Cell D37: Row 37 will only show if the user has completed the **Historical Data** Worksheet. Cell D37 sums up any other little bits of income or expenses that may have been included on the historical income statement.

### NET INCOME, DIVIDENDS AND ADDITION TO RETAINED EARNINGS

- Row 39: Calculates net income by subtracting interest/fees (*plus* row 33, which is a negative number) and income taxes (row 35) from EBIT (row 31).
- Row 41: References the amount of dividends that are to be paid in each period from row 143 on the **Assumptions** worksheet.
- Row 41: Calculates the addition to retained earnings by subtracting dividends (row 41) from net income (row 39). If net income was negative or dividends were greater than net income in any given period, the “addition” to retained earnings will be negative, reducing the retained earnings balance on the **Balance** worksheet (row 49). In the early years of a project, before it is earning a profit, it is not uncommon for the retained earnings balance to be negative. Moreover, in the later years of a successful project, when OPIC may allow the equity investors to take out larger returns, it might not be unusual for the dividends to be greater than net income.

**General Note:** While many model builders have accounting experience, some do not, so it is worth pointing out here the major expense categories that should **not** appear on an income statement. Capital expenditures (i.e. cash spent on fixed assets), repayment of the principal portion of debt financing, and working capital charges (increases in receivables and inventory) are not part of the “profit and loss” calculation. These are often significant expenditures for the project, but they appear on the cash flow statement only.

## 5.2 Cash Flow Worksheet

The **Cash Flow** worksheet has three output sections. The first section is the cash flow statement. It is a direct cash flow statement generated using the cash-based line items from the **Income** worksheet and the “non-income” cash inflow and outflow assumptions from the **Assumptions** worksheet and the **Balance** worksheet (see section 5.3). Some companies/accountants produce an indirect cash flow statement that starts with net income and adjusts for non-cash items. OPIC prefers the direct format that does not need to include the adjustment of any non-cash items.

*Note: If the user completed the **Historical Data** worksheet, then column D of the **Cash Flow** worksheet will contain a historical cash flow calculated from the historical income statement and balance sheet data provided for the final year on the **Historical Data** worksheet. If not, column D will be hidden. If the actual statement data provided on the **Historical Data** worksheet was in another currency and converted to USD, the historical statement on the **Cash Flow** worksheet will only take account of actual cash movements and will factor out year-to-year translation adjustments.*

### **CASH FROM SALES**

- Row 5: References Gross Revenues (Total Sales) from row 10 of the **Income** worksheet.
- Row 6: Calculation of the adjustment to sales due to the change in receivables – take the receivables balance from the **Balance** worksheet (row 9) for the current period and subtract the receivables balance from the **Balance** worksheet for the period immediately prior. Why is this adjustment required? The sales revenues calculated on the **Income** worksheet are an “accrual.” The company books them when it makes the sale. However, many companies do not receive a full cash payment at the time of sale. They may extend “trade credit” to their customers by allowing them to pay for the product over a certain period of time.<sup>1</sup> Therefore, at any one point in time, a certain portion of the sales revenues are “to be received” and do not contribute to the cash flow (though they are accounted for as a short term asset on the balance sheet – see **Balance** worksheet section below). In any given period, if the level of receivables goes up, cash flow goes down and if the level of receivables goes down, cash flow goes up.
- Row 7: Sum of rows 5 and 6. This is the net or actual cash received from sales.

### **CASH PRODUCTION COSTS**

- Row 9: References Cost of Goods Sold from row 12 of the **Income** worksheet.
- Row 10: Calculation of cash flow impacts of changes in inventory – take the inventory balance from the **Balance** worksheet (row 10) for the current period and subtract the inventory balance from the **Balance** worksheet for the period immediately prior. Why is this adjustment required? Some of the expenditures on inputs are for goods that will be produced and sold immediately, but some of the expenditures are for goods that will be produced and stored for future sale. Storing product for future sale ties up cash in the short term. In any given period, if the level of “inventory” goes up, cash flow goes down and if the level of “inventory” goes down, cash flow goes up.

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<sup>1</sup> Or they may unwillingly extend such credit if customers are unable to pay on time.

- Row 11: Calculation of the adjustment to production costs due to the change in payables – take the accounts payable balance from the **Balance** worksheet (row 36) for the current period and subtract the accounts payable balance from the **Balance** worksheet for the period immediately prior. Why is this adjustment required? The costs calculated on the **Income** worksheet are an “accrual” booked at the time they are incurred (just like the revenues/sales), but they are not necessarily paid when they are booked. Some vendors/creditors may allow the project to pay over time, thus extending short term financing. In any given period, if the level of “accounts payable” goes up, cash flow goes up and if the level of “accounts payable” goes down, cash flow goes down.
- Row 12: The sum of rows 9 through 11. This is the net or actual cost of production.

#### **GROSS CASH PROFITS/OPERATING CASH FLOW**

- Row 14: Row 7 (Cash from Sales) minus Row 12 (Cash Production Costs). This yields the “gross cash profits” or operating cash flow prior to overhead costs.
- Row 16: References the total cash overhead expenses (from Row 25 on the **Income** worksheet).
- Row 18: Row 14 (gross cash profits) minus Row 16 (overhead expenses). This yields the cash after overhead expense and before taxes.
- Row 20: References the income taxes paid (from Row 35 on the **Income** worksheet).
- Row 22: Row 18 minus Row 20. This yields the final **Net Cash after Operations**.

#### **CAPITAL EXPENDITURES/INVESTING ACTIVITIES**

- Row 24: Capital expenditures: References total expenditures on capital assets (from row 68 of the **Assumptions** worksheet).
- *Cell D25: Row 25 will only show if the user has completed the **Historical Data** Worksheet. Cell D25 sums up any other misc. cash items that may have been included on the historical income statement.*
- Row 27: Row 22 (Net Cash After Operations) minus Row 24 plus Row 25. This yields **Net Cash After Investing Activities**

Note: On financial statements of many companies, the investing activities section would also include cash expenditures on purchases of financial assets and cash received from the sale of hard assets and financial assets. This model template assumes a relatively simple business model where purchases or sales of financial assets and liquidation of hard assets are not critical to the project’s cash flow. If they are, then the modeler should add rows on the **Cash Flow** worksheet for those transactions and make sure that the changing balances of those assets are reflected on the **Balance** worksheet as well.

#### **CAPITAL INFLOW/REPAYMENT AND FINANCING EXPENSES**

- Row 29: Interest and fee income/ (expense) -- References the interest and fees paid on all debt facilities (from row 33 of the **Income** worksheet).
- Row 30: Dividends Paid -- References dividends paid to equity investors (from row 41 on the **Income** worksheet).
- Row 31: Short Term Debt Inflow/ (Outflow) – Calculates the net increase or decrease of short term debt on the **Balance** worksheet (row 37). If short term debt increases, that is an inflow (positive number). If it decreases, that is an outflow/repayment (negative number).
- Row 32: Long Term Debt Inflow/ (Outflow) – Calculates the net increase or decrease of long term debt (OPIC and other) on the **Balance** worksheet (rows 38 and 42). If long term debt increases, that is an inflow (positive number). If it decreases, that is an outflow/repayment (negative number).
- Row 33: Subordinated Debt Inflow/ (Outflow) – Calculates the net increase or decrease of subordinated debt on the **Balance** worksheet (row 43). If subordinated debt increases, that is an inflow (positive number). If it decreases, that is an outflow/repayment (negative number).

- *Row 34: Change in other Long Term Liabilities – Calculates the net increase or decrease of other long term liabilities on the **Balance** worksheet (row 44). This row will only show if the user has completed the **Historical Data** worksheet, which allows the user to enter an account for certain long term liabilities such as pension liabilities. At present, there is no mechanism for assuming changes in this account, so this row should always be zero. However, if this type of account is an important line item on the company's balance sheet, and it does fluctuate, then the user would need to edit the template to provide for inputs to that account.*
- Row 35: Equity Inflow/ (Outflow) -- Calculates the net increase or decrease of equity on the **Balance** worksheet (row 48). If equity increases, that is an inflow (positive number). If it decreases, that is an outflow/repayment (negative number).
- Row 37: Row 27 (Cash after Investing Activities) plus Row 29 minus Row 30 plus the sum of Rows 31 through 35. This yields **Net Cash after Financing Activities**. It is also the **Change in Cash** for the period.

### CASH RECONCILIATION

- Row 39: This row references the beginning cash balance for the period. If the user has filled in the **Historical Data** worksheet, then the starting cash balance in the first period will carry over from the historical balance sheet. Otherwise it will be zero. All other cells reference the ending cash from the previous period (row 42).
- Row 40: References the change in cash for the period from Row 37.
- Row 41: Calculates the amount of cash that should be deposited into the debt service reserve account (a negative number) or the amount that may be withdrawn from the debt service reserve account (a positive number). The formula takes the average monthly OPIC debt service for the following year (from row 96 of the **Assumptions** worksheet) and multiplies it by the number of months of debt service reserve (from row 171 of the **Assumptions** worksheet). It then subtracts the cumulative balance that is already in the debt service reserve in order to determine if the balance has a deficit or surplus. If there is a deficit, it takes from the cash stream to deposit into the debt service reserve. If there is a surplus, it takes cash out of the debt service reserve and puts it back in the regular cash stream. Any remaining balance in the debt service account returns to the regular cash stream once the OPIC loan is repaid in full.
  - Note: If the debt service reserve needs to be sized to cover debt service from all lenders, then the user could replace the reference to row 96 of the **Assumptions** worksheet with the sum of rows 96, 108, 120 and 131 of the **Assumptions** worksheet.
- Row 42: Calculates the ending cash by taking beginning cash (Row 39) and adding the change in cash (Row 40) and the deposit to or withdrawal from the debt service reserve (Row 41).
  - Note: Ending cash should never be negative because that would mean that the project is not generating or receiving enough funding to meet all of its cash needs. The change in cash for a particular period may be negative so long as the project has a cash balance to draw on, but the cash balance itself should never go negative. In fact, in some projects, it is a requirement that the project maintain a certain minimum cash balance, so the modeler will build in a warning message if it goes below that balance. This model is equipped with a warning message banner at the top of the **Balance** worksheet if the cash balance in any period is less than zero (cell E4 on the **Balance** worksheet).

### DEBT SERVICE COVERAGE ANALYSIS

The second section of the **Cash Flow** worksheet provides the debt service coverage analysis. The worksheet calculates both Operating Debt Service Coverage and Total Debt Service Coverage. The difference between the two is that Total Debt Service coverage takes into account capital expenditures and external infusions of cash in addition to the operating cash flow.

### Operating Debt Service Coverage

- Row 50: References the net cash flow after operations from row 22.
- Row 53: References the interest and fee expense from row 29
- Row 54: References all principal payments (short term and long term debt) – sum of rows 31 to 33.
- Row 55: Adds rows 53 and 54 to calculate total debt service
- Row 57: Divides the net cash flow after operations (row 50) by the interest and fee expense (row 53) to show the coverage of interest/fees only. The formula also has special programming that returns “N/A” if there is no interest in a particular period (i.e. after principal amortization is complete). This makes the presentation “neater.”
- Row 58: Divides the net cash flow after operations (row 50) by the total principal repayment (row 54) to show the coverage of principal only. Same special programming applies.
- Row 59: Divides the net cash flow after operations (row 50) by the total debt service (row 55) to show the total operating debt service coverage. Same special programming applies.
- Cell E60: Average of the coverage numbers in row 59.

### Total Debt Service Coverage

- Row 63: References the net cash flow for the period from row 37. **Note: This is a more conservative approach than referencing “ending cash” which would take into account any excess cash that the project had built up in previous periods. So, this approach yields inadequate coverage in a period where the net change in cash is negative but the project is able to draw on cash balances from previous periods to cover the shortfall. The thought behind this is that after the initial startup/grace period, a project should be able to generate enough cash each year to meet current operating and capital expenditures. However, there may be some projects where the timing of cash flows is such that ending cash is more appropriate to use for this calculation. Please discuss with your OPIC contact if that is the case.**
- Row 64: Adds back the interest and fee expense from row 29
- Row 65: Adds back all principal payments (short term and long term debt) – sum of rows 31 to 33.
- Row 66: Adds back dividends paid from row 30
- Row 67: Sum of rows 63 to 66 gives the total cash available for debt service. Since net cash flow is after the payment of interest/fees, principal and dividends, those needed to be added back in order to give an accurate value.
- Row 69: References the interest and fee expense from row 64
- Row 70: References all the principal payments (short term and long term debt) from row 65.
- Row 71: Adds rows 69 and 70 to calculate total debt service.
- Row 73: Divides the total cash available for debt service (row 67) by the interest and fee expense (row 69) to show the coverage of interest/fees only. The formula also has special programming that returns “N/A” if there is no interest in a particular period (i.e. after principal amortization is complete). This makes the presentation “neater.”
- Row 74: Divides the total cash available for debt service (row 67) by the principal repayment (row 70) to show the coverage of principal only. Same special programming applies.
- Row 75: Divides the total cash available for debt service (row 67) by the total debt service (row 71) to show the total operating debt service coverage. Same special programming applies.
- Cell E76: Average of the numbers in row 75.

## DISCOUNTED CASH FLOW/NET PRESENT VALUE ANALYSIS

The final section of the **Cash Flow** worksheet calculates the overall return on the project and the return to equity investors. This analysis tells OPIC and the investors if the project is economically attractive given probable project assumptions. The project as whole may have a positive net present value while not earning a high enough return to satisfy equity investors. The return to equity is also affected by any restrictions on dividends or other capital redemptions that may be part of the terms of the financing.

### Project Value

- Row 82: Sum of the total external financing disbursements – both equity and long term debt – from rows 32, 33, and 35. This is captured as a negative value since this is funding being invested in the project. Short term debt disbursements are not included since short term debt facilities are assumed to be for liquidity needs rather than project development/construction costs.
- Row 83: References net cash after operations (row 22). This is the cash that the project is generating overall before any of the funding sources are being compensated. This level of cash does not reflect capital expenditures because the model assumes that most of the capital expenditures are upfront and being funded by the initial external financing. So, counting that would be duplicative with what is in row 82. However, if there are capital expenditures later in the project (e.g. major planned replacement or maintenance of capital equipment) that are being funded by operating cash flow, those should be subtracted from the operating cash flow since that is cash that will not be available to compensate the sources of funding.
- Row 84: Adds together rows 82 and 83. This is the net cash going into and coming out of the project. It will be negative in the beginning as cash is going in and turn positive as the project begins to generate cash.
- Cell E85: References the weighted average cost of capital from cell B181 on the **Assumptions** worksheet. This is the rate that will be used to discount the cash flows in row 84 in order to calculate the project's net present value.
- Cell E86: Calculates the internal rate of return of the cash flows in row 84 using Excel's standard IRR formula. Note: If the internal rate of return is lower than the weighted average cost of capital, the net present value is going to be negative.
- Cell E87: Calculates the net present value of the project by discounting the cash flows in Row 84 using the discount rate in cell E85. **Note: Excel has a well-known "flaw" in that its NPV formula does not take account of the fact that cash flows in year "zero" (i.e. the current year) should not be discounted. So, the calculation takes the cash flow in the current year and adds the NPV of all the following years using the standard NPV formula.**

### Equity Value

- Row 90: References just the equity being invested in the project from row 35. This is captured as a negative value since this is funding being invested in the project.
- Row 91: References dividends paid to the investors from row 30.
- Row 92: This row is a placeholder for the model builder to enter whatever other equity returns or terminal value makes sense for a particular project. There are many theories on how to appropriately determine "terminal value" (i.e. what amount the investor could likely get if they sold the project at the end of the term). Discuss with the investors and your OPIC contact what may be appropriate in this space. If no terminal value is entered, only dividend payments are included in the calculation of the investment's value to equity.
- Row 93: Sum of rows 90 through 92. This is the net cash that equity investors are investing into and receiving back from the project. It will be negative in the beginning as cash is going in and turn positive as investors take returns.

- Cell E94: References the cost of equity from cell B180 on the **Assumptions** worksheet. This is the rate that will be used to discount the cash flows in row 93 in order to calculate the net present value to equity.
- Cell E95: Calculates the internal rate of return of the cash flows in row 93 using Excel's standard IRR formula. Note: If the internal rate of return is lower than the cost of equity, the net present value is going to be negative.
- Cell D96: Calculates the net present value to equity by discounting the cash flows in Row 93 using the discount rate in cell E94. **Note: Excel has a well-known "flaw" in that its NPV formula does not take account of the fact that cash flows in year "zero" (i.e. the current year) should not be discounted. So, the calculation takes the cash flow in the current year and adds the NPV of all the following years using the standard NPV formula.**

### 5.3 Balance Worksheet

The **Balance** worksheet brings together all the flows, cash and non-cash, to show the "accumulation" of each type of asset and liability/equity at the end of each period.

*Note: If the user completed the **Historical Data** worksheet, then column D of the **Balance** worksheet will contain balance sheet data provided for the final year on the **Historical Data** worksheet. If not, column D will be hidden.*

#### **VERIFICATIONS/WARNING MESSAGES**

Most models include programming that will warn the user if basic accounting rules are being violated or if certain line items have gone beyond prescribed tolerances. The **Balance** worksheet contains two such features:

- Cell E4: The formula in this cell will return a bold, red warning message if the cash balance in any cell in row 7 is less than zero. A negative cash balance doesn't necessarily mean that anything has been programmed incorrectly. It just shows that the project is not generating enough cash to cover its costs. If the user has entered all assumptions correctly (this would be something to double check), then it's time to assess the viability of the project. Will a little additional investment get it through a lean period, or is the project just not financially sound?
- Row 55: Subtracts total liabilities and net worth from total assets to make sure that the balance sheet actually balances. If it doesn't (i.e. any number but zero appears in this row), that usually does indicate that a "bug" has somehow been introduced to the model, perhaps because the user added an account to one worksheet and forgot to tie it in on another. The size of the discrepancy will generally give some indication of what the bug is.

#### **CURRENT ASSETS**

- Row 7: References the ending cash balance from row 42 of the **Cash Flow** worksheet.
- Row 8: Calculates the balance in the debt service reserve by adding any deposits or withdrawals (row 41 on the **Cash Flow** worksheet) to the balance from the previous period.
- Row 9: Calculates the accounts receivable balance by taking total revenue from each cell in row 10 of the **Income** worksheet, dividing by 360 to give an approximate daily amount and multiplying by the number of days of receivables from row 168 on the **Assumptions** worksheet.
- Row 10: Calculates the inventory balance by taking the total cost of product sold from row 12 of the **Income** worksheet, dividing by 360 to give an approximate daily amount and multiplying by the number of days of inventory from row 169 on the **Assumptions** worksheet.
- Row 13: Adds rows 7 through 10 to give **Total Current Assets**.

## NON-CURRENT ASSETS

- *Row 16: This row will only be visible if the user has completed the **Historical Data** worksheet. If so, this row will show the gross non-current assets listed in the most recent historical balance sheet. It is assumed that the company will retain these assets throughout the life of the project and that they will continue to depreciate (see section 4.8 above). If the company intends to sell any portion of these assets during the life of the project, the user will need to make adjustments on the **Cash Flow** and **Balance** worksheets. If the user did not complete the Historical Data worksheet, this row will be hidden.*
- Rows 17 through 26: The cells in column “A” reference the names of each type of capital asset listed in cells A58 to A67 on the **Assumptions** worksheet. The cells in the column “D” reference the amounts spent on those capital assets in the first year as entered in cells D58 to D67 on the **Assumptions** worksheet. The rest of the columns add the cumulative total from the previous column and any new capital investments listed in the relevant years in E58 to P67 on the **Assumptions** worksheet. Note: This template allows for 10 categories of capital assets. If all 10 are not needed, feel free to “hide” the rows not used for a “neater” presentation.
- Row 27: Calculates the accumulated depreciation in each period by taking the total from the previous period and subtracting current period depreciation from row 165 on the **Assumptions** worksheet. Accumulated depreciation is always a negative number.
- Row 28: Sum of rows 16 through 27 to give the **Net Non-current Assets**.
- Row 30: Sum of rows 13 and 28 to give **Total Assets**

## CURRENT LIABILITIES

- Row 36: Calculates the accounts payable balance by taking total expenses (both cost of goods sold and overhead) from rows 12 and 25 of the **Income** worksheet, dividing by 360 to give an approximate daily amount and multiplying by the number of days of payables from row 170 on the **Assumptions** worksheet.
- Row 37: References the year-end short term debt balance from row 121 on the **Assumptions** worksheet.
- Row 38: Current Portion Long Term Debt -- This references the principal payments on the OPIC debt and any other senior debt that the borrower will make *in the following year* from rows 95 and 107 of the **Assumptions** worksheet.
- Row 39: Sum of rows 36 to 38 to give **Total Current Liabilities**

## NON-CURRENT LIABILITIES

- Row 42: Long Term Portion of Long Term Debt – This references the amount of the OPIC debt and other senior debt outstanding at the end of each period (from rows 97 and 109 of the **Assumptions** worksheet) and subtracts the “current portion” that was already accounted for above in row 38.
- Row 43: Subordinated Debt – References the year-end subordinated debt balance from row 132 of the **Assumptions** worksheet.
- *Row 44: If the user has completed the Historical Data worksheet and there were any “Other Long Term Liabilities” listed on the final historical balance sheet, this row will reference them. If not, this row will be hidden.*
- Row 45: Sum of rows 42 to 44 to give **Total Non-Current Liabilities**

## NET WORTH/STOCKHOLDERS' EQUITY

- Row 48: References the ending equity balance from row 138 of the **Assumptions** worksheet.
- Row 49: Calculates the cumulative amount of retained earnings by adding the amount from row 43 of the **Income** worksheet to the cumulative amount from prior years.
- Row 50: Sum of rows 48 and 49 to give the total **Net Worth/Stockholders' Equity**.
- Row 52: Sum of rows 39, 45 and 50 to give the **Total Liabilities and Net Worth**, which must equal the total assets calculated in row 30.

## 5.4 Sources Uses Worksheet

The **Sources Uses** worksheet is the only output worksheet that may require more than cosmetic adjustments because there are many circumstances that can affect how the investors and OPIC define “the project” and thus what line items are included in sources and uses. As currently programmed, the worksheet includes:

### USES

- Rows 7 to 16: References the capital expenditures from rows 58 to 67 of the **Assumptions** worksheet.
- Row 17: The formulas in this row scan rows 6, 10 and 11 of the **Cash Flow** worksheet and determine in which year the increase in working capital required is greatest. The increase from that year is included as a project cost.
- Row 18: The formulas in this row scan row 8 of the **Balance** worksheet to determine in which year the increase in the size of the debt service reserve fund is greatest (i.e. it determines when the full funding of the debt service reserve occurs). The amount of funding put into the debt service reserve in that year is included as a project cost.
- Cells D19 and E19: The amount of interest paid in the first year (from cell F33 of the **Income** worksheet) is referenced in cell D19 because the template assumes that the first year of interest is being paid out of project funding. If the grace period listed in cell D80 of the **Assumptions** worksheet is more than one year, then interest paid in the 2<sup>nd</sup> year (from cell H33 of the **Income** worksheet) will be referenced in cell E19 because the template assumes that interest in the 2<sup>nd</sup> year is also being paid out of project funding. If the construction period is more than two years long, and the user wants interest after the 2<sup>nd</sup> year to be included as a project cost, they will need to add a calculation for that in cell F19 and beyond.
- Cell D20: References Cell E42 of the **Cash Flow** worksheet since the template assumes that the net cash left over (or required) after funding the first year of project costs stands as a proxy for “contingency”.
- Row 21: Sum of rows 7 to 20 in each column.
- Cell D22: Sum of all the amounts in Row 21 to give the total uses of funds.

### SOURCES

- Row 27: References disbursements of OPIC debt from row 92 of the **Assumptions** worksheet.
- Row 28: References disbursements of other senior debt and subordinated debt from rows 104 and 128 of the **Assumptions** worksheet.
- Row 29: References equity contributions from cell row 137 from the **Assumptions** worksheet.
- Row 30: Sum of rows 27 to 29.
- Cell D31: Sums all the amounts in row 30 to give the total sources of funds

If the pre-programmed line items don't accurately describe the sources and uses for a particular project, then the user/OPIC officer can adjust them as needed. For instance, sometimes it is assumed that cash earned by the project will cover a portion of the project cost, so the total of the debt and equity contributions is less than the "uses" listed in the first section. The user may add a row to the sources section to incorporate a representation of sufficient retained cash to make the sources and uses match.

## 5.5 Ratios Worksheet

The **Ratios** worksheet calculates standard ratios and other measures that OPIC reviews. This includes Liquidity Ratios, Leverage Ratios, Debt Service Coverage statistics, Profitability statistics and Return statistics.

The liquidity and leverage measures come from items on the **Balance** worksheet.

**Quick Ratio:** 
$$\frac{\text{Current Assets (Row 13)} - \text{Inventory (Row 10)}}{\text{Current Liabilities (Row 39)}}$$

**Current Ratio:** 
$$\frac{\text{Current Assets (Row 13)}}{\text{Current Liabilities (Row 39)}}$$

**Debt to Equity Ratio:** 
$$\frac{\text{Total Current Liabilities (Row 39)} + \text{Total Non-Current Liabilities (Row 45)}}{\text{Total Net Worth (Row 50)}}$$

**Senior Debt to Subordinated Debt and Equity Ratio:**

$$\frac{\text{Total Current Liabilities (Row 39)} + \text{Total Non-Current Liabilities (Row 45)} - \text{Subordinated Debt (Row 43)}}{\text{Subordinated Debt (Row 43)} + \text{Total Net Worth (Row 50)}}$$

The cash flow, debt service coverage and return measures come from items on the **Cash Flow** worksheet. Please see the detailed explanation of these calculations in section 5.2 above.

The profitability statistics come from items on the **Income** worksheet:

**Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) – USD:**

Gross Revenues (Row 10) – Cost of Goods Sold (Row 12) – Total Operating Expenses (Row 25)

**Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) – %:**

$$\frac{\text{Gross Revenues (Row 10)} - \text{Cost of Goods Sold (Row 12)} - \text{Total Operating Expenses (Row 25)}}{\text{Gross Revenues (Row 10)}}$$

**Net Income – USD:**

Gross Revenues – (COGS + OPEX + Depreciation + Interest and Fee Expense + Income Taxes)  
 Row 10 - Row 12 - Row 25 - Row 29 + Row 33<sup>2</sup> - Row 35

**Net Income – %:**

$$\frac{\text{Gross Revenues} - (\text{COGS} + \text{OPEX} + \text{Depreciation} + \text{Interest and Fee Expense} + \text{Income Taxes})}{\text{Gross Revenues}}$$

(Row 10 – Row 12 - Row 25 - Row 29 + Row 33 - Row 35)/ Row 10

<sup>2</sup> Reminder: Row 33 is a negative number.

## Appendix A: Updating Excel Settings

### VBA Macros

The IT management of some organizations restricts users' access to macros because macros from unknown/non-trusted sources can contain malicious code. To enable the macros in OPIC's template, you may need to change your Excel Macro Settings (or ask your IT department to change your settings). Below are the instructions from Microsoft for changing Macro Settings.

#### Excel

1. Click the **Microsoft Office Button** , and then click **Excel Options**.
2. Click **Trust Center**, click **Trust Center Settings**, and then click **Macro Settings**.
3. Click the options that you want:
  - **Disable all macros without notification** Click this option if you don't trust macros. All macros in documents and security alerts about macros are disabled. If there are documents with unsigned macros that you do trust, you can put those documents into a [trusted location](#). Documents in trusted locations are allowed to run without being checked by the Trust Center security system.
  - **Disable all macros with notification** This is the default setting. Click this option if you want macros to be disabled, but you want to get security alerts if there are macros present. This way, you can choose when to enable those macros on a case by case basis.
  - **Disable all macros except digitally signed macros** This setting is the same as the **Disable all macros with notification** option, except that if the macro is digitally signed by a trusted publisher, the macro can run if you have already trusted the publisher. If you have not trusted the publisher, you are notified. That way, you can choose to enable those signed macros or trust the publisher. All unsigned macros are disabled without notification.
  - **Enable all macros (not recommended, potentially dangerous code can run)** Click this option to allow all macros to run. This setting makes your computer vulnerable to potentially malicious code and is not recommended.
  - **Trust access to the VBA project object model** This setting is for developers and is used to deliberately lock out or allow programmatic access to the VBA object model from any Automation client. In other words, it provides a security option for code that is written to automate an Office program and programmatically manipulate the Microsoft Visual Basic for Applications (VBA) environment and object model. This is a per user and per application setting, and denies access by default. This security option makes it more difficult for unauthorized programs to build "self-replicating" code that can harm end-user systems. For any Automation client to be able to access the VBA object model programmatically, the user running the code must explicitly grant access. To turn on access, select the check box.

**TIP** You can open the macro security settings dialog box from the **Developer** tab in the Ribbon, which is part of the Microsoft Office Fluent user interface. If the **Developer** tab is not available, click the **Microsoft Office Button**

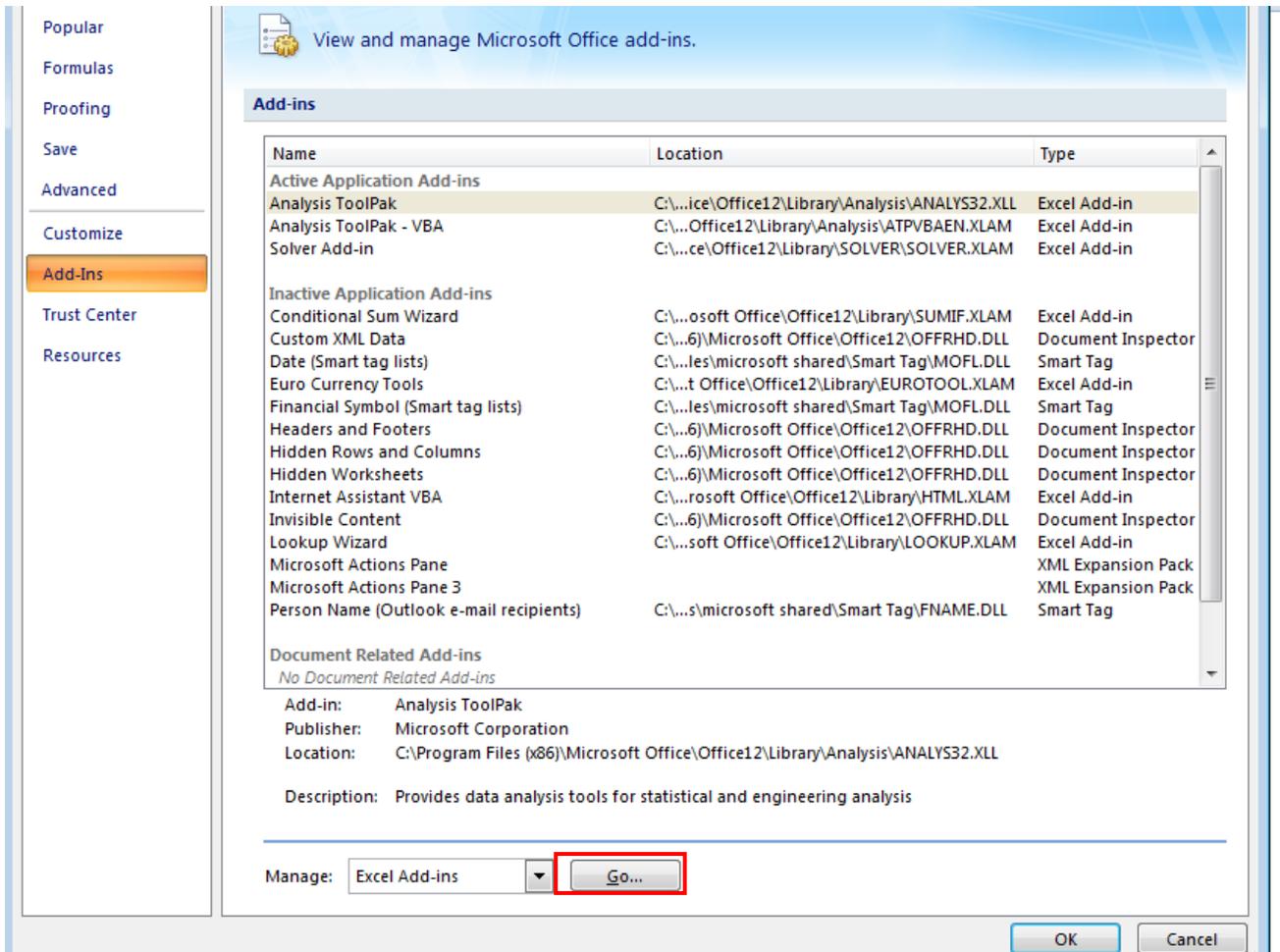


, and then click **Excel Options**. Click **Popular**, and then select the **Show Developer tab in the Ribbon** check box.

### Analysis Toolpak Add-In

Some of the formulas in the template require the Analysis Toolpak add-in to function properly. To check whether that add-in is active (or to activate it), perform the following steps:

1. Click on the **Microsoft Office Button**  and then click **Excel Options**.
2. Click on **Add-Ins**.
3. If the **Analysis Toolpak** and the **Analysis Toolpak – VBA** add-ins are in the “active” list (as shown below), nothing else is needed. If they are in the inactive list, then click on the **Go** button next to “Manage Excel Add-ins.”



4. The add-ins dialogue box (shown below) will appear. Check the boxes next to all the add-ins you want. Then click **OK**, and then click **OK** again when you get back to the Add-Ins screen.

