



## USER MANUAL

### BASE MODEL

SPREADSHEET  
PRINCIPLES  
COMPLIANT



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## Introduction

### 1.1. General information

FinRobot is an automatic assembler of financial Models in Microsoft Excel. It allows you to set online parameters for your project or business and download a financial Model with working formulae and input fields in Microsoft Excel.

When ordering your Model online, sensitive financial data about your business does not need to be inputted, if you prefer not to. Your Model will be delivered with dummy operating and financial data, which can be replaced with your own inputs off-line as needed.

Your Model can be further modified off-line. Unlike the black box solutions, the code and type of formulae are intentionally simple and transparent.

Currently, FinRobot provides six customisable templates or models called 'Base Model', 'Case Builder Model', 'TopLine Model', 'Manufacturing', 'Quick IRR Model' and 'Quick RE Development Model'.

This Manual describes the functionality of the Base Model. To read more about our other Models please refer to their respective manuals (available on-line and as a download in pdf).

An initial understanding of the Model's layout and templates can be achieved by viewing screenshots of the Model from the Models' section of our site. Note that **yellow fields** are **data input fields** which can be re-populated with data off-line without any risk of unintentionally altering the functionality or structure of the Model.

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The Institute of Chartered Accountants in England and Wales (ICAEW) has recognised FinRobot's Base Model as being compliant with [ICAEW's Twenty Principles for good spreadsheet practice](#). The purpose of these Principles is to help reduce the amount of time wasted, and the number of errors caused, by businesses

(including accountancy practices) as a consequence of the way they and their employees use spreadsheets.

#### ! Attention

In compliance with Principle 20 of the Principles, all worksheets of the Model **are locked** except for designated **data input fields**. If you need to change working areas of the Model you can unlock any tab by going to the Review menu at the top of Excel and clicking on 'unprotect sheet' button. Default password is **finrobot**, but you may wish to substitute a password of your own choice in place of the default. We recommend the Model is locked again after any planned changes to avoid accidental overwrites by end users.

Please ensure you make a back-up after downloading your Model.

*\* Users should be aware that the Base Model does not cover all aspects of good spreadsheet practice and therefore should ensure that they follow the best practice appropriate to their specific circumstances when relying upon spreadsheets.*

## **1.2. Software requirements**

Our Models have been successfully tested for Microsoft Office Excel 2007-2010. If your installation of Microsoft Office is different, you may wish to use free Microsoft Office converters. However, we do not guarantee that the Model will retain all of its functionality and graphical representations if opened in a different version of Microsoft Office. We recently tested our Models for Excel 2013 and found no immediate compatibility issues.

## **1.3. Base Model functionality**

FinRobot's Base Model allows you to -

- Set your own calendar for forecast periods: years, quarters, or months;
- Rename key items of the balance sheet, current and investment expenses, and debt instruments depending on the specific nature of your project/business;
- Set initial operating and financial positions of the existing business using the opening (initial) balance sheet;
- Simulate dynamics of revenues and direct expenses by five product categories with individual cost profiles;
- Simulate and choose types of overhead expenses;
- Set the schedule of capital investments by varying parameters of up to five classes of fixed assets, each with its own amortisation profile;
- Vary the number of debt instruments, simulate up to five sources of debt financing;
- Calculate income tax by taking into account potential loss carry forwards;
- Calculate working capital requirements;
- Simulate three reporting forms: balance sheet, profit and loss statement, and cash flow statement;
- Calculate NPV and IRR for business or a project.

The Base Model provides more additional flexibilities and built-in functionality. Please read more below.

## 2. Inputting data when assembling the Model online

Once you are a registered and logged-in user, you can click 'Assemble' button within the description box for the Base Model on the Models' page of the site.

Data input is completed in 5 stages, or Steps. Inputs such as labels for line items, financial and operational assumptions can be changed later off-line. However, structural parameters of the Model cannot be easily altered once the Model is purchased.

Hence, there are no default settings for structural parameters. The user needs to consider the options provided and to decide what configuration is desired. Structural data is entered at Step 1 and, partially, at Steps 2 and 3. Please read more below.

When assembling a model - to proceed to the next Step click 'Next' or return to previous Step by clicking 'Back'. 'Save' button remembers all entered data. After saving you can leave the assembler and continue later by clicking 'Continue' button at the top of the User Account page.



If you wish to globally restore default dummy values for assembled Model navigate 'Back' to Step 1 and click 'Restore Default' button. 'Reset' button restores default values locally for any current Step.

You can always refer to on-line version of the Manual for more details by pressing 'Help' button.

### 2.1. Step 1. Setting the Base Model's structure

Step 1 configures key settings and parameters of your Model. Your assumptions inputted at this Step is what makes your Model unique and adapted to your modelling requirements. Your choices of language, timeline, number of product lines, debt elements and fixed asset classes are structural and cannot be easily altered once the Model is purchased.

The following table summarise the choices available to users at Step 1:

Input field	Comment
Select your language	Current available in English or Russian. Note that switching Model's language would completely reset

	<p>your language environment including entry forms and commentary fields.</p>
<p>What is the start date?</p>	<p>This is not a structural input and can be easily changed off-line in the purchased copy of the Model.</p> <p>The Model assembler would only allow a first date of any month to be the Model's start date. Non-conforming day of the month entry will automatically revert to the first day of the month chosen by user.</p> <p>Note that, if your start data is not January 1st, then your reporting periods and annual summaries would not fall on calendar quarter and year ends.</p>
<p>What is the step interval?</p>	<p>Step interval can be set to year, quarter or month. By definition, the combination of the number of periods and periods' step would set the timeline for your Model.</p>
<p>How many periods do your require?</p>	<p>Can be set to any integer value between 3 and 60. By definition, number of periods and periods' step would set the timeline for your Model. For example, 20 monthly periods means your Model has a five year forecast horizon.</p> <p>Please note that if a model is set up to run monthly or quarterly periods, you are not restricted to make the number of periods match full number of years. For example, your model's timeline can have 38 monthly periods, or equivalent to 3 years and 2 months. The annual summary for year 4 would pick up two last months of projections only.</p> <p>If your selected timeline is very short (less than two years) or does not end at full year, additional consideration should be given to Terminal Value and IRR calculations. Please refer to section 3.12 of the Manual for details.</p>
<p>How many product lines in the</p>	<p>Any integer value within the allowed range of between 1 and 5. This is a structural feature provided for</p>

model?	independent revenue and COGS assumptions for each product line. Please see details on revenue and COGS assumptions required to complete Step 2.
How many Fixed Assets Items in the model?	Can be any integer value between 1 and 5. This is a structural input and cannot be reversed once the Model is purchased. For each class of Fixed Assets you can create its own amortisation profile as described in Step 5 below. Once you download the Model you can populate data for your forecast capital expenditure (CapEx) program. However, CapEx profile of your Demo version would not contain any values or calculations.
Currency, select from list Customise currency	Sets your Model's currency. The Model does not conform to any currency coding standard so you can input any name or currency code as needed by typing a text value or a symbol of your choice. For example, your currency can be GBP or £. Alternatively, select most common currency codes from the pull down menu provided. This is not a structural input and can be easily changed off-line in the purchased copy of the Model.
Currency Unit	Label for scales of your monetary units. Default value is in thousands, or 000s. Please note that this is a text label and not an automated feature of the Model. Default assumption is that pricing data is inputted per unit of sales whilst revenues and unit volume sales are assumed to have the same scale or factor. E.g. if your model is set to be in millions of currency units, then it is assumed that volume of sales is in millions of product units.
How many Debt Instruments Items in the model?	Any integer value within the allowed range of between 1 and 5. Please note that the first debt element is an automatic cash sweep, or an overdraft facility. This balances your cash flows irrespective of whether your project or business is cash-generative or cash-

	consuming at any forecast period. All additional debt elements have manual repayment schedules. You can populate these in accordance with your repayment terms once the Model is purchased.
Your Corporate Tax Rate	Sets the income (corporate) tax rate. The default (dummy) value is 20%. This is not a structural input and can be easily changed off-line.

## 2.2. Step 2. Populating revenue and operating costs assumptions

Step 2 has a combination of structural and non-structural elements. The structural elements refer to your choice of fixed vs. variable drivers for cost elements (see detailed description below). The assumptions for your sales forecasts and the values assigned to selected drivers are not structural and can be modified off-line.

Step 2 is broken into the number of sub-steps equivalent to the number of product lines selected upfront. Hence, if you only select one product line, only one screen will appear. If you select more than one product line, then you should expect to see Step 2A for product A followed by B, C, D or E depending on your selection for the number of product lines.

The following step-by-step guide is referring to one product only as each product input screen is identical to the others except for editable labels for each COGS line item. Labels can only be changed or edited at Step 2A.

Note that Step 2 headers react to your choice of inputs from Step 1. For example, if you configured the Model to be in USD and in 000's, headers for Step 2 would incorporate your choices as shown in the table below (legends dependent on Step 1 are shown in [square brackets]).

At this Step you can (repeated for each product line):

Input field	Comment
Revenue Assumptions <i>For First Forecast Period</i> Volume, ['000s] Average Price, [USD] Revenue, ['000s USD]	Captures forecasts for physical sales volume and product pricing assumptions. Note that data for the first forecast period is entered in absolute terms as the base level for driving subsequent periods by growth rates.  If you do not wish to have independent drivers for volume and pricing, then set the volume of sales and



<p><i>For [N] Next Forecast Periods</i></p> <p>Volume Growth, % per annum</p> <p>Price Growth, % per annum</p>	<p>its growth factor to 1 and 0 respectively. Your pricing and revenue lines will then show identical data for all forecast periods.</p>
<p>Cost of Goods Sold Assumptions</p> <p>[Raw Materials] * 5 elements</p> <p><i>For First Forecast Period</i></p> <p>['000s USD]</p> <p><i>For [N] Next Forecast Periods</i></p> <p>Fixed / Variable Driver</p> <p>Input, %</p>	<p>Captures forecasts for cost of goods sold assumptions. Note that data for the first forecast period is entered in absolute terms as the base level for driving subsequent periods by growth or margin rates.</p> <p>The fixed/variable driver input requires user to identify the type of driver for each cost element: fixed cost element will forecast out at growth rates set by user; variable cost element is modelled as a percentage of revenue (e.g. margin driven). This choice is structural and cannot be reversed once the Model is purchased.</p> <p>By default, all COGS elements are preset to be variable costs, while all overhead elements (next Step) are fixed costs. You can change COGS' fixed-variable assumption on item-by-item basis. Fixed-variable variation is unique for each product line. The choice does not have to be universally applied to all products.</p> <p>Finally, note that you can edit names for each COGS element by typing over default labels. This can be done at Step 2A for Product A only and will apply to all product tabs. You can always change your COGS labels off-line or by going back to Step 2A of the online assembly process.</p>

Please note that the on-line entry form allows flat (over time) growth (margin) rates assumption only. This should not be a cause for concern. You purchases Model allows applying COGS growth / margin assumptions for each forecast period as needed. Please refer to working with the Model section below.

Separately, it is worth highlighting that the growth rates are set on annual basis for ease of reference. For example, if your Model is quarterly you do not have to apply a fraction of the year growth rate; the Model will do it for you automatically: for quarterly

model inserting 10% annual growth rate for rental costs will translate in rental costs growing 2.5% quarter-on-quarter.

### 2.3. Step 3. Populating overhead assumptions

Please note that this Step has a combination of structural and non-structural elements. The structural elements give you an option of assigning fixed or variable drivers for each overhead cost elements (see detailed description below). Input values and editable labels for each driver are not structural and can be modified off-line.

Unlike Step 2, Step 3 is not broken into the number of product lines. The assumption is that overheads are whole at corporate level and are not allocated to or driven by separate product lines.

Note that Step 3 headers react to your choice of inputs from previous Steps. For example, if you configured the Model to be Quarterly, USD and in 000's, headers for Step 3 would incorporate your choices as shown in the table below (legends dependent on Step 1 are shown in [square brackets]).

Input field	Comment
Overhead Assumptions [Administration] * 5 elements <i>For First Forecast Period</i> [‘000s USD] <i>For [N] Next Forecast Periods</i> Fixed / Variable Driver Input, %	<p>Captures forecasts for overhead assumptions. Note that data for the first forecast period is entered in absolute terms as the base level for driving subsequent periods by growth or margin rates.</p> <p>The fixed/variable driver input requires user to identify the type of driver for each cost element: fixed cost element will forecast out at growth rates set by user; variable cost element is modelled as a percentage of revenue (e.g. margin driven). This choice is structural and cannot be reversed once the Model is purchased.</p> <p>By default, all overhead elements are preset to be fixed costs. You can change this assumption on item-by-item basis as well as edit labels by typing over default names in the left column of the entry form.</p>

Please note that the on-line entry form allows flat (over time) growth / margin rates assumption only. This should not be a cause for concern. Your purchased Model allows applying overhead growth and margin assumptions for each forecast period as needed. Please refer to Section 3 of the Manual.

Separately, it is worth highlighting that the growth rates are set on annual basis for ease of reference. For example, if your Model is quarterly you do not have to apply a fraction of the year growth rate; the Model will do it for you automatically: for quarterly model inserting 10% annual growth rate for rental costs will translate in rental costs growing 2.5% quarter-on-quarter.

#### **2.4. Step 4. Populating opening balance sheet positions and related assumptions**

At this step you can customise labels for balance sheet items shown in editable fields as well as replace default values for opening balance sheet positions and related drivers with your own inputs. Alternatively, you can skip this step and change labels and values off-line in purchased copy of the Model. If you want to change the number of debt instruments present in the capital structure of your Model please go back to Step 1. Please refer to the Manual for more details by pressing the Help button at the top of the screen.

The following table summarises the choices available to users at Step 4 of the assembly (items shown in [\*] are editable at this Step):

Input field	Comment
'Clear Balance' button	Opening balance sheet can be set to zero wholesale by clicking on the Clear Balance button on the right hand side of the input form. It will null all balance sheet items with one click. This may be useful if your project or business is a green field and has no prior history.
Long Term Assets	Allows populating data for your opening balance sheet items. The balance sheet structure is fixed (except for number of debt elements selected at Step 1) and cannot be changed.
Gross PP&E	
Accumulated Depreciation	
Net Fixed Assets	
Financial Investments	Note that Step 4 field legends react to your choice of inputs from previous Steps. For example, if you configured your Model to have two debt facilities and

Deferred Tax Assets [Other Long Term Assets]	custom named them, Step 4 would incorporate your choices (legends dependent on previous Steps are shown in [square brackets]).
Current Assets	
Cash	If your historic balance sheet has more items than what is provided for by the assembler, we suggest you analytically aggregate these to match the number of items allowed in the Model.
[Debtors]	
[Inventory]	
[Other CA]	This step also allows for entry of interest rates assumptions for cash/debt items and days turnover ratios for calculating the working capital requirements.
Current Liabilities	
[Creditors]	These are not structural changes and can be changed later off-line.
[Short Term Revolver]	
[Other CL]	To change interest rates assumptions directly in the Model go to the opening balance sheet tab. Working capital drivers can be found in the working capital tab of the Model.
Long Term Liabilities	
[Bank Debt Tranche A – D]	
[Other Long Term Liabilities]	
Equity & Reserves	
Check	You cannot proceed to the next input step if the total assets and liabilities values do not match. The check field at the bottom of the input screen would indicate if there is an input error.

### **2.5. Step 5. Populating depreciation assumptions and reviewing your Model**

At this final assembly step you can customise labels for CapEx classes as well as replace default values for depreciation and amortisation rates expressed in years of useful life, or remaining useful life for existing assets.

You can skip this Step and change labels and values off-line in purchased copy of the Model. If you want to change the number of CapEx classes present in the CapEx program of your Model please go back to Step 1.

Input field	Comment
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Existing Fixed Assets	Please note that the existing fixed assets are considered as one single group of assets with one average value for their remaining life.
[Buildings] * [5]	The number of classes for new assets should match your configuration entered in Step 1 and you can provide useful life assumptions for each class separately.

Please note that the input form does not allow for entry of your CapEx programme. It should not be a cause of concern that the demo version does not show any investments going forward throughout the forecast periods. These can be populated off-line when working with the Excel file as described in the following section of the Manual.

You are done customising your Model. You can now request a Demo or buy a full version of the model on the next screen. Click 'Next'.

## **2.6. Requesting free demo and purchasing options**

After completing Step 5 you can click 'Next' and select 'Request Demo' button. The demo version of the Model would be assembled and appear in your User Account available for download. You will receive a notification via email that your Demo is ready. Requesting a demo is free.

Demo version of the Model would not have any live formulae or links. Otherwise all structural elements, formats, settings and labels would be exactly as profiled by you during the on-line assembly stage. Please study the demo to ensure that all the structural and labelling elements come out as desired.

If something is not right at this stage, you can assemble a new model with revised input parameters. Alternatively, you can proceed to Buy options and get a fully functioning Model delivered to your User Account. You can always convert any of your Demos stored in the User Account to a live working Model by clicking on Buy option in your User Account next to the Demo Model you wish to purchase.

You can download your Demo version or a full purchased version of the Model from your User Account page as many times as you like.

### 3. Working with the Excel file of the Base Model

Please note that in the Excel file of the Model, fields marked with yellow background are **data input fields** which you can re-populate with your assumptions without any risk to altering the structural layout of the Model.

#### ! Attention

In compliance with Principle 20 of [ICAEW's Twenty Principles for good spreadsheet practice](#), all worksheets of the Model **are locked** except for designated **data input fields**. If you need to change working areas of the Model you can unlock any tab by going to the Review menu at the top of Excel and clicking on 'unprotect sheet' button. Default password is **finrobot**, but you may wish to substitute a password of your own choice in place of the default. We recommend the Model is locked again after any planned changes to avoid accidental overwrites by end users. Please ensure you make a back-up after downloading your Model.

#### 3.1. 'Navigation' tab

'Navigation' tab allows clickable navigation between all tabs in the Excel file of the Model. By clicking on the block with any tab name, you will be instantly 'jumped' to the respective tab.

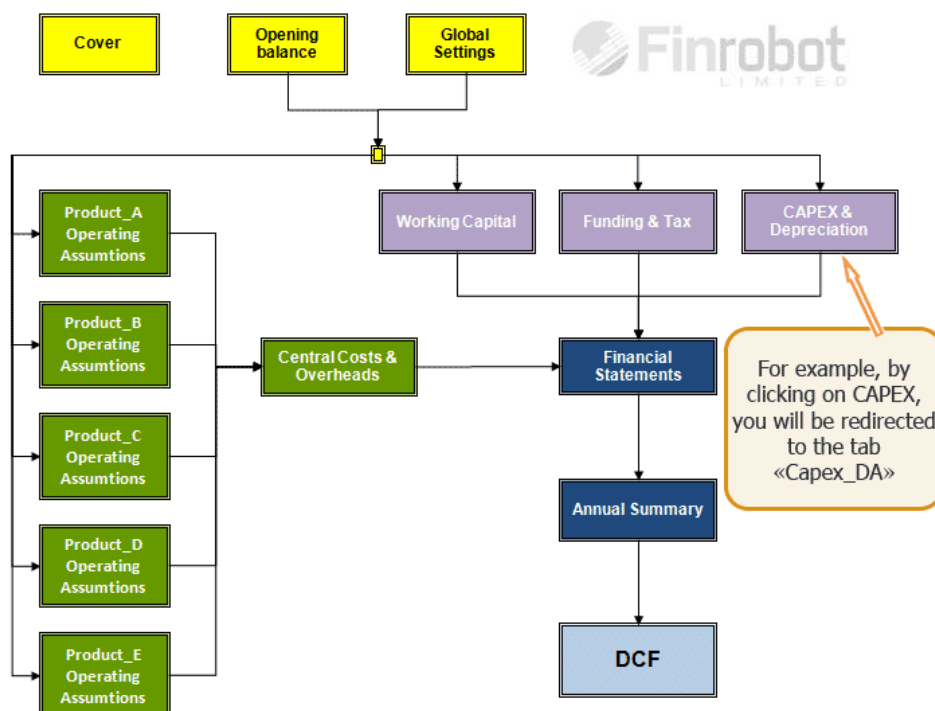
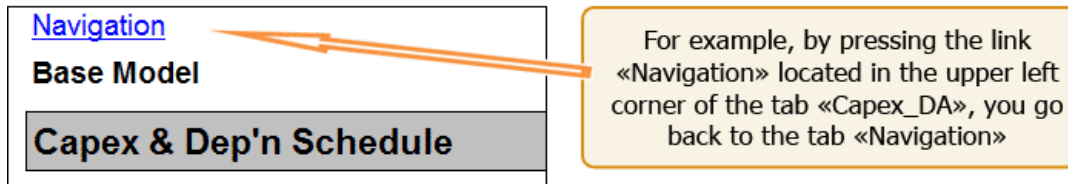


Figure 3.1. Navigation in the Excel file of the Model

Navigation hyperlink is located in the upper left corner of each tab. Clicking it will return you to 'Navigation' tab.

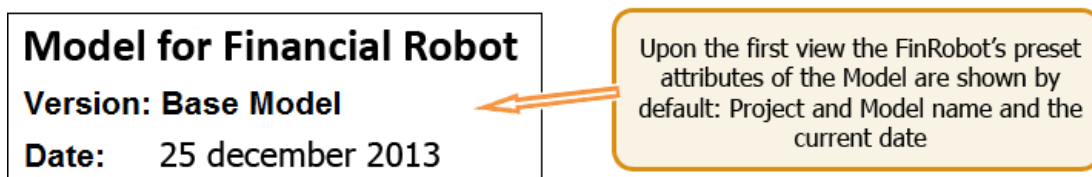


**Figure 3.2. Upper left corner of 'Capex\_DA' tab showing 'Navigation' link**

**NB:** To make hyperlinks work cell A1 of all tabs has a hidden marker containing tab's name. Although cell A1 in each tab appears empty, it is essential for the Model's navigation to work properly. Do not remove this cell.

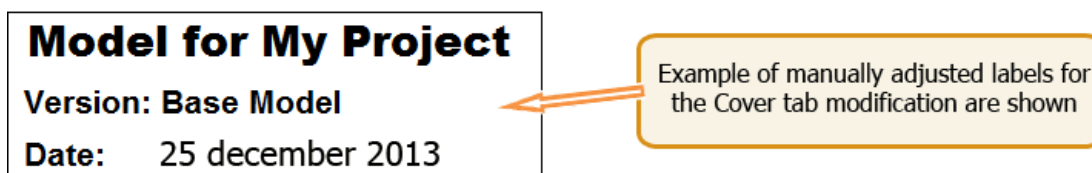
### 3.2. 'Cover' tab

There are three fields at the centre of the tab. When the Model is opened for the first time the fields show the following:



**Figure 3.3. Centre of 'Cover' tab showing default values**

You can change the above references on the cover page by going to the tab called 'General Settings' ('Global'). At the top of 'Global' tab you can assign your own labels for the cover page, including the project name, version or date. The latter, unless manually overridden, will always show the current date whenever the file is re-opened.



**Figure 3.4. Centre of 'Cover' tab showing new project name**

### 3.3. 'Global' tab

In addition to Cover settings (as per above), 'Global' tab contains general data inputs required by all other tabs of the Model to function properly.

If you populated all fields when assembling the Model on-line there is nothing in the Global tab that requires your immediate attention. However, if you left the on-line form with dummy or default values, 'Global' tab would be a good place to start populating the Model with your own data as follows:

Input Area	Comment
Project & Model attributes	Your project or business name, model version and date (as illustrated immediately above) in section 3.2 'Cover' tab
Calendar	<p>The next block of cells deals with the calendar and periodicity of the Model. We generally do not recommend changing these. If, however, it is absolutely necessary, please consider that:</p> <ul style="list-style-type: none"><li>• Any changes to the Model's calendar and its periodicity should match with the period counters in lines 14 to 16 (counters of months, quarters, years) and cell G17 (number of periods).</li><li>• If not done properly, some or all period dependent functions and calculations including interest charges, amortisation schedules and annual summaries may not perform as expected and should be checked for errors.</li></ul>

#### Attention

Resetting the Model's calendar and/or periodicity is for advanced users only. FinRobot does not guarantee the Model will respond to change and work correctly.



Period Start Date	Date_BoP		01 Sep 13	01 Sep 14	01 Sep 15
Period End Date	Date_EoP	31 Aug 13	31 Aug 14	31 Aug 15	31 Aug 16
Month Counter	Month_Count		12.0	24.0	36.0
Quarter Counter	Quarter_Count		4.0	8.0	12.0
Year Counter	Year_Count		1.0	2.0	3.0
Number of Periods Flag	Nperiod	1.0			
Time step duration, Days	step_d	365.0			
Time step name	step_name	Years			
Income Tax	CT	20.0%			
Currency	FX	USD			
Currency Unit	X	000s			

**Figure 3.5. Inputs for the Model's calendar and periodicity**

Income tax field is located immediately below the calendar items.

Input Area	Comment
Income Tax	Default value for Corporate or Income tax rate is 20% unless changed during the assembly stage

All remaining editable areas of 'Global' tab - as described below - are labels for various line items used elsewhere in the Model. Unless changed during the assembly stage these will show default values. You can replace any default label with something more suitable for your business. Your inputs will be picked up throughout the Model automatically.

COGS Items	
Name or Name Range	Assign Value
COGS1	Raw Materials
COGS2	Personnel
COGS3	Fuel & Utilities
COGS4	Rent & Leases
COGS5	Other COGS

Any labels present in the fields with yellow background can be changed

**Figure 3.6. Relabeling COGS items**

Input Area	Comment
Currency	Type in your own currency code in the field provided. The field is pure text and is not restricted to any currency code. For example, you may opt for GBP or £
Currency Unit	Currency unit or scale is set to 000s by default. The field is pure text label, so if you wish to scale your Model in millions, etc. your volume and pricing per unit assumptions should be scaled accordingly
Cost of Goods Sold Items	Shows labels for your Cost of Goods Sold items. These labels are picked up in Product tabs of the Model.
Central Cost Items	Shows labels for your central costs and overhead items applied to Overhead's tab of the Model
Capex & Dep'n Items	Shows labels for your fixed assets picked up by CapEx and Depreciation tab of the Model
Working Capital Items	The next input area shows labels for current assets and liabilities picked up by the Working Capital and Financials' tabs. Please note that there are logical limitations for renaming working capital items. First three items are driven by days' ratios, whilst the last two are extras for booking manual adjustments such as one-offs and non-recurring items (for details please see the section on 'Working Capital' tab below).
Debt & Long Term Balance Sheet Items	Contains labels for your debt financing and long term balance sheet positions picked up by Funding and Financials' tabs. The total number of debt items shown would depend on the choice made during the on-line assembly.


### **3.4. 'Opening balance' sheet tab**

If you entered financial data for your opening balance sheet positions during the online assembly stage, then it will be present in the purchased Model and can be changed in this tab as required. If your project or business is a greenfield, then your opening balance sheet positions could be set to zero. Rates for your opening and forecast debt financing are inputted in this tab alongside respective balance sheet position.

The labels for the balance sheet items in this tab should match data provided during the on-line assembly stage and/or changes made to 'Global' tab as explained above.

If balance sheet structure for your business is more detailed or itemised than what is provided for in the Model, we advise you to group similar line items.

If the total amounts of assets and liabilities match, then the check field at the bottom of the tab will be green and show 'OK'. If there is an input error, the check field will be red and show the amount of discrepancy between the total assets and the total liabilities.

 **Attention**

There is one more 'OK'/'Error' check field at the top of 'Opening balance' sheet tab. 'OK' status indicates that all forecast balance sheets in the financial statements of the Model are balancing properly for all forecast periods. This integrated all-period balance sheet check is reproduced in all tabs of the Model to alert users if a new input makes balance sheets 'going off'.

### 3.5. 'Product A' – 'Product E' tabs

The number of tabs for product revenues and cost of goods sold (COGS) is determined by user choice made during the on-line assembly stage. The tabs are marked with letters from A to E. If only two product lines were ordered on-line then only 'Product A' and 'Product B' tabs will be present in the Model.

All product tabs are identical structurally. However, note that COGS drivers differ between fixed and variable depending on the choice made during the assembly stage for each product line. Unless user specific data was submitted on-line the tabs will be populated with dummy numbers.

Input Area	Comment
Revenue assumptions	Shows volume of sales (in units) and average prices for each product line for the first forecast period followed by computed volumes and prices based on growth drivers for all subsequent forecast periods. The Revenue line is computed automatically.  Please, make ensure that the scale of your units and currency matches what is required. E.g. 000s of units and price per 000s units will result in revenues expressed in millions.

COGS	Absolute amount for each COGS element for the first forecast period (base) followed by computed COGS driven by growth rate or margin (% of revenues) assumption depending on choice made during the online assembly of the Model. Please refer to section 2 of the Manual for further consideration
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**! Attention**

Note that when the downloaded Model is opened for the first time, growth and margin drivers are set flat over time but can be changed to any desired trajectory for each driver. For example, annual revenue growth may decelerate whilst costs as % of revenue may demonstrate improvements.

Note that the Model takes in growth rates expressed in annual terms. If your Model is quarterly or monthly, the Model will calendarise growth rates accordingly. For example, input of 10% annual growth rate in a quarterly model will compute as 2.5% for quarter-on-quarter calculations. There is no need for manual adjustments.

Finally, if you do not require revenues driven by both volume and pricing assumptions, you can set sales volume to 1 and assign 0% growth rate to the volume factor going forward. The price line will then equal revenues.

Product_A Operating Assumptions		Projected Fiscal Period Ending		
		aug.14	aug.15	aug.16
(USD in 000s, except otherwise stated)				
Volume	000s	800.0	832.0	865.3
Annual Growth Rate	% per annum		4.0%	4.0%
Average Price	USD	55.0	56.7	58.3
Annual Growth Rate	% per annum		3.0%	3.0%
Revenue	USD 000s	44 000.0	47 132.8	50 488.7
Annual Growth Rate	% per annum		7.1%	7.1%

**Figure 3.7. Inputs for sales volume and average product pricing**

Product_A Operating Assumptions					
(USD in 000s, except otherwise stated)		Projected Fiscal Period Ending			
		aug.14	aug.15	aug.16	aug.17
<b>COGS</b>					
Raw Materials	USD 000s	18 000.0	18 853.1	20 195.5	21 633
Raw Materials / Revenue	%	40.9%	40.0%	40.0%	40

Enter total cost of raw materials in the 1<sup>st</sup> period, thousand USD

Enter raw materials assumption as % of revenues for all subsequent forecast periods

**Figure 3.8. Example of Inputs for variable COGS element**

Base Case - Operating Assumptions					
(USD in 000s, except otherwise stated)		Projected Fiscal Period Ending			
		Mar-14	Jun-14	Sep-14	Dec-14
Leases	USD 000s	1 000.0	942.7	1 009.8	1 081
Annual Growth Rate	%		2.0%	2.0%	2

Enter total costs of Leases in the 1<sup>st</sup> period, thousand USD

Enter Leases assumption as annual growth rate for all subsequent forecast periods

**Figure 3.9. Example of Inputs for fixed COGS element**

### 3.6. 'Central Costs' tab

'Central Costs' tab contains all inputs in connection to various overhead items such as administrative and marketing expenses.

The structure and computations should match the assumptions provided during the on-line assembly stage – please refer to Section 2 of the Manual for details. If no business specific data were provided during the on-line assembly stage the Model would show dummy numbers. You should change them accordingly –

Input Area	Comment
Central Costs	Provide absolute amounts for each Central Cost element for the first forecast (base) period followed by computed costs driven by growth rate or margin (% of revenues) assumption depending on choice made during the online assembly. Please refer to section 2 of the Manual for further consideration.

### ! Attention

Note that when the downloaded Model is opened for the first time, growth and margin drivers are set flat over time but can be changed to any desired trajectory for each driver. For example, annual revenue growth may decelerate whilst costs as % of revenue may demonstrate improvements.

Note that the Model takes in growth rates expressed in annual terms. If your Model is quarterly or monthly, the Model will calendarise growth rates accordingly. For example, input of 10% annual growth rate in a quarterly model will compute as 2.5% for quarter-on-quarter calculations. There is no need for manual adjustments.

### 3.7. 'Capex & Dep'n Schedule' tab


'Capex & Dep'n (depreciation) Schedule' tab contains all inputs and workings necessary to drive investment and depreciation fed into financials. The tabs' structure and inputs are determined by the on-line assembly stage – please refer to Section 2 of the Manual for details.

When adding or changing assumptions in this tab you should note the following:

Input Area	Comment
Capex Input	<p>Any class of fixed assets can be renamed or re-labelled in 'Global' tab and the number of classes shown at the top of the tab should match on-line configuration.</p> <p>Input area to change depreciation assumptions for each class.</p> <p>Input area for manual entry of your CapEx programme going forward. Each class of assets may have individual investment profile. The totals will be picked up to calculate funding and cash flows for the business</p>
Depreciation – Existing PP&E	<p>The existing fixed assets are considered as one single group of assets with one average input for their remaining life. Gross value and accumulated depreciation amounts are picked up from 'Opening balance' sheet tab</p>
Depreciation – New Assets	<p>No additional input or assumptions required. The workings compute depreciation charges for each asset class for each period. The totals are picked for by tax computations and financials</p>

The key input fields are illustrated on the following page.

Input amortisation rate for new investments expressed in years

Navigation			
Base Model	Ok		
<b>Capex &amp; Dep'n</b>			
Capex Input			
(USD in 000s, except otherwise stated)			
<b>Capex &amp; Dep'n</b>		<b>Depreciation period, Years</b>	
Buildings		50.0	years
Machines		11.0	years
Equipment		7.0	years
Land		-	years
Other FA		5.0	years
<b>Total amount</b>			
<b>Period Depreciation Schedule</b>			
(USD in 000s, except otherwise stated)			
<b>Existing PP&amp;E</b>			
Gross Amount	USD 000s	140 000.0	BoP for Net Existing PP&E ▶
Accumulated Dep'n	USD 000s	(20 000.0)	Period Dep'n ▶
Remaining Life	years	7.5	EoP for Net Existing PP&E ▶

Input amortisation rate for fixed assets from opening balance sheet (if present)

**Figure 3.10. Inputs required for computing depreciation charges**

<b>Capex &amp; Dep'n Schedule</b>		Projected Fiscal Period Ending			
(USD in 000s, except otherwise stated)		Aug-14	Aug-15	Aug-16	Aug-17
<b>CAPEX Input</b>					
<b>Capex Input</b>					
Buildings	USD 000s	-	(10 000.0)	-	-
Machines	USD 000s	-	-	(5 000.0)	(4 000.0)
Equipment	USD 000s	-	-	(3 000.0)	(2 500.0)
Land	USD 000s	(6 000.0)	-	-	-
Other FA	USD 000s	-	-	(1 500.0)	(1 500.0)
<b>Total amount</b>	USD 000s	(6 000.0)	(10 000.0)	(9 500.0)	(8 000.0)

Enter your investment program going forward

**Figure 3.11. Investment program input schedule**

### 3.8. 'Working Capital' tab

'Working Capital' tab calculates working capital requirements for your business or project. Any data were provided during the on-line assembly stage with respect to working capital items will appear in this tab. Otherwise the tab will be populated with dummy numbers.

Please note that the principles behind working capital computations are as follows:

Input Area	Comment
Debtors	Driven by % of Revenue expressed in days. Opening value picked up from 'Opening Balance' sheet tab, name can be changed in 'Global' tab
Inventory	Driven by % of COGS and is expressed in days. Opening value picked up from 'Opening Balance' sheet tab, name can be changed in 'Global' tab
Creditors	Driven by % of Total Costs and is expressed in days. Opening value picked up from 'Opening Balance' sheet tab, name can be changed in 'Global' tab
Other CA and Other CL	Other items do not have explicit drivers. These are extras for manual adjustments if needed. For example, if there is a one-off settlement item in the future which needs to be booked into accounts without disrupting regular receivables and payables

#### Attention

The Model default layout assumes that drivers expressed in terms of days do not vary over time. If you operate under a different assumption, override the formula cells to the right of the yellow inputs (as per illustration below)



Working Capital		Projected F	
(USD in 000s, except otherwise stated)		Aug-14	Aug-15
<b>Revenue</b>	USD 000s	122 500.0	135 936.6
<b>COGS</b>	USD 000s	103 750.0	114 169.6
<b>CC &amp; Overheads</b>	USD 000s	11 800.0	12 422.0
<b>Working Capital</b>			
Debtors - Days of Revenue	Days	30.0	30.0
Inventory - Days of COGS	Days	40.0	40.0
Creditors - Days of Total Costs	Days	50.0	50.0
Changes in Other CA	USD 000s	-	-
Changes in Other CL	USD 000s	-	-

Enter days turnover ratio for accounts receivable, inventory and accounts payable

Manual entry fields for adjusting other short-term assets/liabilities

**Figure 3.12. Inputting date for working capital assumptions.**

### 3.9. 'Funding & Tax' tab

'Funding & Tax' tab contains workings for financing and corporate tax computations. The structure should match the assumptions provided during the on-line assembly stage – please refer to Section 2 of the Manual for details.

Similar to other balance sheet items the opening positions for debt elements and their respective labels are picked up from 'Opening Balance' sheet tab and 'Global' tab respectively.

The interest rates are set and can be changed in 'Opening Balance' sheet tab. Rates are expressed in annual terms and automatically calendarise depending on the chosen periodicity of the Model. There is no need to adjust anything if your model is quarterly or monthly.

By default, any period interest charge for any debt obligation is calculated based on the opening position. If there are large fluctuations due to borrowing and/or repayments this method can skew the computed result from what is actually expected.

**! Attention**

The Model allows more accurate calculations of interest charges by switching to computing interest charges based on average debt positions. This would require the Model to go

circular by turning on the cyclical interest calculation switch. The switch is located in the upper left corner of 'Financials' tab. Note, that if the switch is on, then Excel settings (options) should have iterations (cyclical) options turned on too.

To complete your debt schedule of 'Funding & Tax' tab you may set the minimum amount of cash required in the business at each forecast period (as shown below). Entered as a negative minimum cash requirement restricts cash on books becoming available for debt repayments.

<b>Funding and Tax Calculations</b>				
Debt Schedule		Projected Fiscal Period Ending		
(USD in 000s, except otherwise stated)		Aug-14	Aug-15	Aug-16
Beginning Cash Balance	USD 000s	200.0	-	-
Required Minimum Cash Balance	USD 000s	-	-	-
Cash From Operations	USD 000s	(3 845.6)	(5 868.4)	(4 232.7)
Less: Net Mandatory Debt (Repayment)	USD 000s	-	-	-
Less: Dividend Payments	USD 000s	-	-	-
<b>Funds Available to Repay Debt</b>	<b>USD 000s</b>	<b>(3 645.6)</b>	<b>(5 868.4)</b>	<b>(4 232.7)</b>

Enter minimum cash balance for each forecast period as a negative

**Figure 3.13. Minimum Cash Balance**

Each debt element except for overdraft facility would have its own repayment profile (as shown below).

<b>Funding and Tax Calculations</b>				
Debt Schedule		Projected Fiscal Period Ending		
(USD in 000s, except otherwise stated)		Aug-14	Aug-15	Aug-16
<b>Bank Debt Tranche A</b>				
Annual Cost of Facility	6.0% %			
Beginning Balance	USD 000s	20 000.0	21 000.0	22 000.0
Mandatory (Repayment)	USD 000s	1 000.0	1 000.0	-
Discretionary Borrowings / (Repayment)	USD 000s	-	-	(2 000.0)
<b>Ending Balance</b>	<b>USD 000s</b>	<b>21 000.0</b>	<b>22 000.0</b>	<b>20 000.0</b>
Interest Expense	USD 000s	1 200.0	1 260.0	1 320.0

Manual borrowings profile

Manual repayment profile

**Figure 3.14. Standard debt profile layout.**

The tax calculations part of 'Funding & Tax' tab contains workings for your tax liability and cash tax payments. The schedule takes earnings before tax from 'Financials' tab, allows for manual adjustment to reported earnings, and finally provides for any loss carried forward in case there is a taxable loss in any given period, which can be offset against taxable income in the future.

The default assumption is that taxable turnover matches the reported in 'Financial' tab, and no manual adjustments are necessary.

#### Attention

FinRobot does not provide tax advice and the Model is not attempting to represent a real tax environment. You should seek advice from a tax specialist if you wish to model a tax environment compliant with tax laws and regulations relevant to your business.

### **3.10. 'Financials' tab**

'Financials' tab contains three standard financial reports, viz. profit and loss, balance sheet and cash flows. The tab does not require user inputs except for Exceptional Items and Equity distributions as described below. All other data are picked up from tabs covered in the earlier section of the Manual.

#### Attention

The financial statements are purposefully generic. As our clients are located in various countries and operate under different accounting standards we cannot make the Base Model compliant with a particular accounting standard.

Instead, we make reports relatively simple and easy to navigate or adjust if needed. Our experience shows that the majority of our clients are satisfied with our approach, particularly for the purposes of preparing management accounts and/or investment decision analysis.

The Net Exceptional Item allows for manual entry of exceptional items, which are not practical to model, but are known occurrences within the forecast period. For example, a known gain from disposing of non-core other assets. Note that the Model implicitly assumes that any exceptional loss or gain is a cash item. If your circumstances are such that an exceptional item is non-cash, you need to disconnect the link between extraordinary P&L items and cash flow items and book your P&L item somewhere to a corresponding line of the balance sheet. Note that such adjustments would require good working knowledge of the Model. Otherwise, there is a risk that the balance sheet would 'go off' and the check flag would indicate red.

The Equity Issue line of the cash flow allows for manual entry of any forecast cash distributions (dividends or buybacks) or capital fundraising (issue). A positive entry means equity is raised. Negative means cash is returned to shareholders. If you wish to use the line for a dividend program, it is possible to link up the cash flow equity line to a % net income from P&L.

### **3.11. 'Annual Summary' tab**

'Annual Summary' tab is designed to automatically aggregate data for monthly and quarterly models into an annual summary. The tab does not require any user input.

Please note that if your monthly or quarterly forecast periods do not accrue to full number of years, the last forecast year in 'Annual Summary' tab will pick up the residual amounts. For example, if the Model's timeline is 38 months long, then year four of the summary will show results from operations for two month only.

The minimum number of years shown in 'Annual Summary' tab is three. Hence, if your project is less than two years you are likely to see 0 in the last column of the summary. Note that for any length of the project the summary would pick up the correct last available projected balance sheet whether it falls on a year end, or not.

### **3.12. 'DCF Analysis' tab**

'DCF Analysis' tab provides valuation metrics with respect to your project or business as outlined in the Model. The outputs are presented in grid form for Firm Value and Equity based on NPV computations and as % IRR on Firm Value basis.

Additional analysis is available with respect to the terminal value for the business as a going concern. You can compare implied perpetuity growth to assumed multiple for terminal value and vice versa.

'DCF Analysis' tab picks up the data from 'Annual Summary' tab. Hence, all financial information is presented on annual basis irrespective of the underlying periodicity of the Model.

#### **! Attention**

Please note that if your project is finite and its length does not accrue to full years of forecast, then NPV and IRR may require adjustments as set out in clause 5 below. For projects with duration of less than two years we advise setting Terminal Value to equal zero.

To run and interpret data with the help of 'DCF Analysis' tab please consider the following:

Input Area	Comment
Terminal Value Exit Multiple	<p>Insert your input for terminal value EBITDA multiple into the yellow input cell provided. The model will populate the output grid based on a step of +/-0.5x</p> <p>If your project is finite you may consider assigning zero for the exit EBITDA multiple. This will make sure there is no terminal value to account for going concern value beyond your forecast horizon. Note that any projects with life of less than two years would not have any Terminal Value computed as the minimum forecast length to capture Terminal Value impact is set to three years or more</p> <p>If the number of your forecast periods do not accrue to full years there may be a problem with how the terminal value is computed. The Annual Summary will pick up less than the full year of cash flows and EBITDA for terminal value computations. As a result, terminal value and NPV for the business will come out less than expected. There is a quick fix to correct this by increasing the exit multiple accordingly. For example, if your last annual summary contains only six months of cash flows, adjust your exit multiple by increasing it by 2x</p>
WACC	<p>This is the rate at which the cash flows are discounted. You need to insert one central value to the left of the output grid and the Model will populate the grid vertically based on a step of +/-1%</p> <p>Additionally, in case of timeline not matching to full number of years you should consider adjusting the discount rate for the last year of forecasts. To do this, in line 59 (calculation of average annual discount rate) in the column corresponding to the last year of forecasts (incomplete year), the discount factor step up from the preceding year should be changed from 1 to a different number. For example, if the last (incomplete) year contains only 3 months, then the step up in discount factor should be equal to <math>0.5+(3/12)*0.5 = 0.625</math></p>


Enter your input for Terminal (exit) EBITDA multiple

(USD in 000s, except otherwise stated)		Terminal EBITDA Multiple Range		
		8.5x	9.0x	9.5x
TV		128 765.6	136 340.1	143 914.5
WACC		Firm Value as of 01 Sep 13		
	12.0%	71 822.4	76 120.3	80 418.3
	12.5%	70 181.8	74 385.1	78 588.4
	13.0%	68 584.6	72 695.7	76 806.8

Enter your WACC for the business

**Figure 3.15. WACC and exit multiple assumptions**

Input Area	Comment
Capital Invested	By default, capital invested in the business to date equals to the amount of net operating assets as per the opening balance sheet, and can be adjusted upwards or downwards if the actual capital spent is higher or lower respectively. Note that for new greenfield projects the capital invested amounts may equal zero
Valuation Date Balance Sheet Date Investment Date	The Valuation Date is used to value projects at a specific date other than the start of the project. The Balance Sheet date will carry net debt and investments forward to the Valuation Date to make sure Firm Value and Equity Value are computed on the same basis. The Investment Date is used to calculate IRR. It is helpful if you want to analyse returns on investments done in the distant past relative to future cash flows. For greenfield projects the Investment Date is irrelevant
Unlevered Tax Schedule	'DCF Analysis' tab contains a separate tax schedule in order to compute unlevered tax charge consistent with application of WACC (as per MM2 theorem). The unlevered tax schedule provides for manual adjustments to book items disallowed for tax relief purposes

 Attention

IRR function implies that either there is some invested capital upfront or that first period cash flow is negative, e.g. cash flow series have to start with a negative number. If this is not the case, for example, you project shows positive cash flows for all periods and requires no upfront capital IRR calculation would return an error.