

# Master budget

## The master budget

The master budget is the comprehensive, quantitative plan for the organization as a whole. Typically, the master budget is for a one-year period, corresponding to the financial year of the company. yearly budgets are broken down into quarterly and monthly budgets. The use of smaller time periods allows managers to compare actual data with budgeted data more frequently, so that problems may be noticed and resolved sooner.

# Master budget

## Major components of the master budget

A master budget can be divided into operating and financial budgets.

**1. Operating budgets** describe the income generation activities of a company sales, production and finished goods inventories. The ultimate outcome of the operating budget is a pro forma or budgeted income statement. operating budgets consist of:

- ❖ Sales budget
- ❖ Production budget
- ❖ Direct material budget
- ❖ Direct labor budget
- ❖ Overhead budget
- ❖ Ending finished goods inventory budget
- ❖ Cost of goods sold budget
- ❖ Selling cost budget
- ❖ Administrative cost budget
- ❖ Income statement budget

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**2. Financial budgets** detail the inflows and outflows of cash and the overall financial position . planned cash inflows and outflows appear in the cash budget. The expected financial position at the end of the budget period is shown in a budgeted balance sheet. Financial budgets consist of:

- ❖ Cash budget
- ❖ Budgeted balance sheet

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## Operating budgets

1. **Sales budget** describes expected sales in units and dollars. It is important for the sales budget to be accurate as possible because it is the basis for all of the other operating budgets and most of the financial budgets. The first step in creating a sales budget is to develop the sales forecast. This is usually the responsibility of the marketing department. The sales budget is constructed by multiplying budgeted unit sales by the selling price.

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## Example (1)

Iraq company for furniture produces and sell office desk. The company sell its product in three marketing areas which are Baghdad, Basra and Mosul. percentages of monthly sales in each marketing area are %40, %40 and %20 respectively of total sales. the following data are planned sales in five months of 2010.

April 725 units

May 1000 units

June 1200 units

July 1700 units

August 700 units

Planned sales price IQD 10000 per unit

**Required:** prepare sales budget for the second quarter of 2010.

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Sales Budget				
Total	June	May	April	Details
<b>2925</b>	<b>1200</b>	<b>1000</b>	<b>725</b>	Quantity of sales
1170	480	400	290	<b>Baghdad:</b> Quantity of sales
10000	10000	10000	10000	Sales price
11700000	4800000	4000000	2900000	Sales revenues
1170	480	400	290	<b>Basra:</b> Quantity of sales
10000	10000	10000	10000	Sales price
11700000	4800000	4000000	2900000	Sales revenues
585	240	200	145	<b>Mosul:</b> Quantity of sales
10000	10000	10000	10000	Sales price
5850000	2400000	2000000	1450000	Sales revenues
29250000	12000000	10000000	7250000	Total sales revenues

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## 2. Production budget

The production budget is prepared after the sales budget. The production budget lists the number of units that must be produced to satisfy sales needs and to provide for the desired ending inventory. Production needs can be determined as follows:

<b>Budgeted unit sales</b>
<b>+ desired ending inventory</b>
<b>= Total needs</b>
<b>-Beginning inventory</b>
<b>= Required production</b>

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## Example (2)

Iraq Company for furniture produce and sell office desk. The following data are sales quantities and inventory policy in the company.

1. planned sales in four months of 2010

April 725 units

May 1000 units

June 1200 units

July 1700 units

2. policy of the company has shown that end of inventory levels must equal %20 of the following month's sales.

**Required:** prepare production budget for the second quarter of 2010



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Production budget				
Total	June	May	April	details
2925	1200	1000	725	Budgeted unit sales
340	340	240	200	+ desired ending inventory
3265	1540	1240	925	Total needs
145	240	200	145	- Beginning inventory
3120	1300	1040	780	Required production

## Ending inventory

April:  $1000 \times \%20 = 200$  units

May:  $1200 \times \%20 = 240$  units

June:  $1700 \times \%20 = 340$  units

## Beginning inventory

April:  $725 \times \%20 = 145$  units

May: ending inventory in April (200 units) becomes beginning inventory in May

June: ending inventory in May (240 units) becomes beginning inventory in June

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## 3. Direct material used

Direct material used budget is prepared after the production have been computed. This budget shows the raw material that should use to achieve the production budget

### Example (3)

Iraq Company for furniture produce and sell office desk. The following data are related to production quantities and direct material.

1. planned production quantities four the second quarter of 2010

April 780 units

May 1040 units

June 1300 units

2. each desk needs two types of woods which are Swedish wood and oak wood. the following data are prices of wood and quantities of woods needed by each desk

A. each desk needs 1 cubic meter of Swedish wood at IQD 1000 per meter.

B. each desk needs 1.5 cubic meter of oak wood at IQD 2000 per meter.

**Required:** prepare direct material used budget for the second quarter of 2010

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Total	June	May	April	Details
3120	1300	1040	780	Quantity of production
3120	1300	1040	780	<b>Swedish wood:</b> Quantity of raw material (1 meter per unit)
3120000	1300000	1040000	780000	Cost of raw material (IQD 1000 per meter)
4680	1950	1560	1170	<b>Oak wood:</b> Quantity of raw material (1.5 meter per unit)
9360000	3900000	3120000	2340000	Cost of raw material (IQD 2000 per meter)
12480000	5200000	4160000	3120000	Cost of direct material used

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## 4. Direct material purchases

The direct material purchases budget tells the amount and cost of raw material to be purchased in each time period. It depends on the expected use of materials in production and the raw materials inventory needs of the company. The required purchases of raw materials are computed as follows:

**Direct material use in production**  
**+ ending inventory of raw material**  
**= total raw materials needs**  
**- Beginning inventory of raw materials**  
**= raw materials to be purchases**

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**Example (4):** Iraq Company produces and sell office desk. The following planned data are related to quantities of direct material used in producing the desk during the second quarter of 2010 as well as company's policy in raw material inventory.

1- quantities of planned direct material used in producing the desk during the second quarter of 2010.

Total	June	May	April	Type of wood
3120	1300	1040	780	Swedish wood (1 meter)
4680	1950	1560	1170	Oak wood (1.5 meter)

Expected purchases price during the second quarter of 2010 is IQD 1000 per meter for Swedish wood and IQD 2000 per meter for Oak wood .

2-policy of company is that end -of- direct material inventory levels of Swedish wood and Oak wood must equal %20 and %30 respectively of direct material used in the next month. If you know that the inventory of direct material used in production at the end July are:

1500 cubic meter of Swedish wood

2250 cubic meter of Oak wood

**Required:** prepare direct material purchases budget.

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Total	June	May	April	Details
3120	1300	1040	780	<b>Swedish wood:</b> Direct material used
300	300	260	208	+ ending inventory of raw material
3420	1600	1300	988	= total needs
156	260	208	156	- Beginning inventory of raw material
3264	1340	1092	832	= raw material to be purchased
1000	1000	1000	1000	X purchases prices
3264000	1340000	1092000	832000	= cost of purchases
4680	1950	1560	1170	<b>Oak wood:</b> Direct material used
675	675	585	468	+ ending inventory of raw material
5355	2625	2145	1638	= total needs
351	585	468	351	- Beginning inventory of raw material
5004	2040	1677	1287	= raw material to be purchased
2000	2000	2000	2000	X purchases prices
10008000	4080000	3354000	2574000	= cost of purchases
13272000	5420000	4446000	3406000	Total purchases cost

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## 5. Direct labor budget

The direct labor budget shows the total direct labor hours and the direct labor cost needed for the number of units in the production budget. As with direct materials, the budgeted hours of direct labor are determined by the relationship between labor and output.

### Example (5)

Iraq Company for furniture produces and sell office desk. The following data are related to production quantities, direct labor hours and direct labor cost per hour.

1-planned production quantities during the second quarter of 2010 are:

April 780 units

May 1040 units

June 1040 units

Each desk needs 2 direct labor hours and average wage per hour is IQD 1000.

**Required:** prepare direct labor budget for the second quarter of 2010

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Direct labor budget				
Total	June	May	April	details
3120	1300	1040	780	Required production
2	2	2	2	Direct labor hours per unit
6240	2600	2080	1560	Direct labor hours needed
1000	1000	1000	1000	Average wage per hour
6240000	2600000	2080000	1560000	Direct labor cost



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## 6. Overhead budget

**Overhead budget shows the expected cost of all production costs other than direct materials and direct labor.**

### Example (6)

Iraq Company for furniture produces and sell office desk. the following data are overhead cost for the second quarter of 2010.

1- variable overhead costs are allocated on based direct labor hours as following

indirect material IQD 125 per hour

indirect labor IQD 50 per hour

fuel IQD 50 per hour

If you know that expected direct labor hours for the second quarter of 2010 are as following

April 1560 hours

May 2080 hours

June 2600 hours

2- monthly fixed overhead cost

rent                    IQD 180000

depreciation    IQD 120000

insurance        IQD 90000

**Required:** prepare overhead cost budget for the second quarter of 2010

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Overhead budget				
Total	June	May	April	details
6240	2600	2080	1560	Direct labor hours
780000	325000	260000	195000	<b>Variable overhead:</b>
312000	130000	104000	78000	• Indirect material
156000	65000	52000	39000	• Indirect labor
				• Fuel
540000	180000	180000	180000	<b>Fixed overhead:</b>
360000	120000	120000	120000	• Rent
270000	90000	90000	90000	• Depreciation
				• Insurance
2418000	910000	806000	702000	Total overhead

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## 7. Ending finished goods inventory budget

The ending finished goods inventory budget supplies information needed for the balance sheet and also serves as an important input for the preparation of the cost of goods sold budget. To prepare this budget, the unit cost of producing each office desk must be calculated by using the following formula:

$$\text{= Unit cost} \frac{\text{Cost of production (direct material + direct labor + overhead )}}{\text{Quantity of production}}$$

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Example (7): Iraq company for furniture produces and sell office desk. The following data are related to costs and quantities of production as well as expected ending finished goods inventory during the second quarter of 2010.

1-Expected production cost for the second quarter .

Total	June	May	April	details
12480000	5200000	4160000	3120000	Direct material
6240000	2600000	2080000	1560000	Direct labor
2418000	910000	806000	702000	overhead

2-quantities of expected ending finished goods inventory for the second quarter

June	May	April	Details
1300	1040	780	Quantity of production (units)
340	240	200	Quantity of ending finished goods inventory (units)

Required: prepare ending finished goods inventory budget

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Total	June	May	April	Details
12480000	5200000	4160000	3120000	Direct material
6240000	2600000	2080000	1560000	Direct labor
2418000	910000	806000	702000	Overhead
21138000	8710000	7046000	5382000	Cost of production
	1300	1040	780	÷ quantity of production
	6700	6775	6900	= unit cost
	340	240	200	Ending finished goods inventory
	2278000	1626000	1380000	Cost of ending finished goods inventory

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## 8. Cost of goods sold budget

cost of goods sold budget reveals the expected cost of the goods to be sold. preparing of this budget is dependent on the ending finished goods inventory budget.

Example (8): Iraq Company for furniture produces and sell office desk. The following data are related to expected cost production and expected beginning and ending finished goods inventory during the second quarter of 2010.

1-expected cost of production for the second quarter of 2010

Total	June	May	April	Details
12480000	5200000	4160000	3120000	Direct material
6240000	2600000	2080000	1560000	Direct labor
2418000	910000	806000	702000	overhead

2-cost of ending finished goods inventory

April IQD 1380000

May IQD 1626000

June IQD 2278000

3-quantity of finished goods inventory on 1/4/2010 is 145 units at IQD 7000 per unit (desk)

Required: prepare cost of goods sold budget for the second quarter of 2010

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Total	June	May	April	Details
1248000	5200000	4160000	3120000	Direct material
624000	2600000	2080000	1560000	Direct labor
2418000	910000	806000	702000	Overhead
21138000	871000	7046000	5382000	Cost of production
1015000	1626000	1380000	1015000	+ Beginning finished goods inventory
22153000	1033600 0	8426000	639700	= cost of goods available for sale
2278000	2278000	1626000	1380000	- Ending finished goods inventory
1987500	8058000	6800000	5017000	= cost of goods sold

**Beginning finished goods inventory:**

**April:** 145 units x IQD 7000 = 1015000

**May:** cost of ending finished goods inventory in April (IQD 1380000 becomes cost of beginning finished goods in May.

**June:** cost of ending finished goods inventory in May (IQD 1620000) becomes cost of beginning finished goods inventory in June.

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## 9. Selling cost budget

Selling cost budget shows planned cost for marketing activities (non-manufacturing activities). As with overhead, selling cost can be broken down into fixed and variable components.

### Example (9)

The following is planned selling cost for the second quarter of 2010.

1-variable selling cost

Sales commission %2 of sales revenues

Packing %1 of sales revenues

If you know that sales revenues during the second quarter are as following

April IQD 7250000

May IQD 10000000

June IQD 12000000

2-Fixed selling cost

Salaries of marketing department IQD 100000

Rent of sales center building IQD 50000

**Required:** prepare selling cost budget



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Total	June	May	April	Details
29250000	12000000	10000000	7250000	Sales revenues
585000	240000	200000	145000	<b>Variable selling cost:</b> Sales commission (%2)
292500	120000	100000	72500	Packing (%1)
300000	100000	100000	100000	<b>Fixed selling cost:</b> Salaries of marketing
150000	50000	50000	50000	Rent of sales center
1327500	510000	450000	367500	Total selling cost

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## 10. Administrative cost budget

Administrative cost budget shows planned cost for administrative activities (non-manufacturing and non-marketing activities). Most of administrative costs are fixed in nature.

### Example (10)

The following are administrative costs for the second quarter of 2010.

Salaries of management IQD 90000

Depreciation IQD 40000

Rent IQD 30000

Hospitality IQD 20000

**Required:** prepare administrative cost budget

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<b>Administrative cost budget</b>				
<b>Total</b>	<b>June</b>	<b>May</b>	<b>April</b>	<b>Details</b>
270000	90000	90000	90000	Salaries of management
120000	40000	40000	40000	Depreciation
90000	30000	30000	30000	Rent
60000	20000	20000	20000	Hospitality
180000	180000	180000	180000	Total administrative cost

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## 11. Income Statement budget

Income statement budget shows the company's planned profit.

Example (11)

Iraq Company produces and sell office desk. The following data are sales revenues, cost of goods sold, selling cost and administrative cost for the second quarter of 2010.

Total	June	May	April	Details
29250000	12000000	10000000	7250000	Sales Revenues
19875000	8058000	6800000	5017000	Cost of goods sold
1327500	510000	450000	367500	Selling cost
180000	180000	180000	180000	Administrative cost

Required: prepare income statement budget for the second quarter of 2010

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Income statement budget				
Total	June	May	April	Details
29250000	12000000	10000000	7250000	Sales Revenues
19875000	8058000	6800000	5017000	- Cost of goods sold
9375000	3942000	3200000	2233000	= Gross profit
1327500	510000	450000	367500	- Selling cost
180000	180000	180000	180000	- Administrative cost
7507500	3252000	2570000	1685500	= Net income