ISCTE Business School
Instituto Universitário de Lisboa

Accounting Department

Management Accounting II

# ADDITIONAL EXERCISES
# (SOLVING)

**Management 2nd Year**

ANNUAL BUDGET

## EXERCISES 1, 2, 3 and 4

School Year 2015/2016

# EXERCISE 1 – SOLVING
# ALVO COMPANY

**Production Programme of the product AL1**

| | 1st Sem | 2nd Sem | Year |
|---|---|---|---|
| Opening Stock | 15 000 | 13 250 | 15 000 |
| Production | e)38 000 | f)111 750 | 149 750 |
| Consumptions | a)39 750 | b)93 750 | 133 500 |
| Closing Stock | c)13 250 | d)31 250 | 31 250 |

Supporting Calculations:
a)13 250 x 3
b) 31 250 x 3
c) 39 750/6 x 2
d)93 750/6 x 2
e) 13 250 + 39 750 -15 000
f) 31 250 + 93 750 – 13 250

**Purchases Programme of the material X**

| | 1st Sem | 2nd Sem | Year |
|---|---|---|---|
| Opening Stock | 20 000 | 37 437.5 | 20 000 |
| Purchases | d)36 437.5 | d)36 437.5 | 72 875 |
| Consumptions | a)19 000 | b)55 585 | 74 875 |
| Closing Stocks | 37 437.5 | 18 000 | c)18 000 |

Supporting Calculations:
a)38 000x 0.5
b) 111 750 x 0.5
c) 20 000 – 2 000
d)72 875/2

| Unit MCFP forecasted |
| --- |
| Unit MCFP of AL1 = 0.5 (30 + 2 ) + 0.3 x 30 = 25 €/ton<br><br>Unit MCFP of AL = 3 x 25 + 1 x 50 = 125 €/Unit |

**Values for the Cash Budget**

| **Sales receipts 2nd semester** | **Value: = 8 750 000 €** |
|---|---|
| (15 000 x 350)/6 x 2 + (30 000 x 350)/6 x 4 = 1 750 000 + 7 000 000 = 8 750 000 € | |
| **Purchases payment in the 1st semester** | **Value: 910 937.50 €** |
| 36 437.50 x 30/6 x 5 = 910 937.50 € | |

**Financial Budget**

| | 1st Sem | 2nd Sem | Year |
|---|---|---|---|
| **Cash Inflows** | | | |
| Opening Cash | 50 000 | 60 000 | 50 000 |
| (+) Cash Budget | 100 000 | 640 000 | 740 000 |
| Short Term Loan | 500 000 c) | | 500 000 |
| | | | |
| **Total Cash Inflows** | **650 000** | **700 000** | **1 290 000** |
| **Cash Outflows** | | | |
| Closing Cash | 60 000 | 60 000 | 60 000 |
| (–) Cash Budget | - | - | - |
| Payment ML Term Loan | 500 000 | 500 000 | 1 000 000 |
| Interests ML Term Loan | 90 000a) | 80 000 b) | 170 000 |
| Payment Short Term Loan | | 35 000 e) | 35 000 |
| Interests Short Term Loan | | 25 000 d) | 25 000 |
| | | | |
| | | | |
| **Total Cash Outflows** | **650 000** | **700 000** | **1 290 000** |

Supporting Calculations:

a) 4 500 000 x 0.04/ 2 = 90 000 €
b) 4 000 000 x 0.04/2 = 80 000 €
c) 650 000 – 100 000 – 50 000
d) 500 000 x 0.1/2
e) 700 000 -60 000 -500 000 – 80 000 – 25 000

**Values to forecast in the Forecasted Balance Sheet**

| | |
|---|---|
| **Materials Stocks** | **Value**: 576 000 € |
| Supporting Calculations:<br><br>(20 000 – 2 000) x 32 = 576 000 € | |
| **Loan and Interests payable** | **Loans – Value: 3 965 000 €**<br>**Interests payable – Value: 34 917 €** |
| Supporting Calculations:<br><br>Loans = ML Term Loan + Short Term Loan = 3 500 000 + (500 000 – 35 000)= 3 965 000 €<br><br>Interests payable = ML Term Loan + Short Term Loan = (3 500 000 x 0.04/12) + 465 000 x 0.1/2 = 11 667 + 23 250 = 34 917 € | |

# EXERCISE 2 – SOLVING – KKK COMPANY

## PRODUCTION PROGRAMME – Product K

| | 1st Sem | 2nd Sem | Total |
|---|---|---|---|
| Opening Stock | 850 | 1 500 | 850 |
| Sales | 5 000 | 6 000 | 11 000 |
| **Production** | **5 650** | **5 750** | **11 400** |
| Closing Stock | a) 1 500 | b) 1 250 | 1 250 |

a) 6 000/6*1.5 = 1 500
b) 5 000/6*1.5 = 1 250

## PRODUCTION PROGRAMME – Intermediate product K1

| | 1st Sem | 2nd Sem | Total |
|---|---|---|---|
| Opening Stock | 600 | 575 | 600 |
| Consumption a) | 6 780 | 6 900 | 13 680 |
| **Production** | **6 755** | **6 890** | **13 645** |
| Closing Stock | b) 575 | c) 565 | 565 |

a) Production of K * 1.2
b) 6 900/6*0.5
c) 6 780/6*0.5

## PRODUCTION PROGRAMME – By-product k’

| | 1st Sem | 2nd Sem | Total |
|---|---|---|---|
| Opening Stock | 100 | 230 | 100 |
| Sales | 1 000 | 1 000 | 2 000 |
| **Production** a) | **1 130** | **1 150** | **2 280** |
| Closing Stock | 230 | 380 | 380 |

a) Production of K * 0.2

## PURCHASES PROGRAMME – Material M

| | 1st Semester | 2nd Semester | Total |
|---|---|---|---|
| Opening Stock | 3 000 | 4 364 | 3 000 |
| Consumption a) | 13 510 | 13 780 | 27 290 |
| **Purchases** | d) **14 874** | d) **14 874** | c) **29 748** |
| Closing Stock | 4 364 | b) 5 458 | 5 458 |

a) Production of K1 * 2

b) 27 290 * 0.2

c) 27 290 + 5 458 – 3 000

d) 29 748/2

## Cash Budget

| Description | Value (€) | Supporting Calculations |
|---|---|---|
| Receipts from clients 2nd Sem | 1 086 900 € | 5 000*180/6*1.5 +<br>1 000*51.9/6 +<br>6 000*180/6*4.5 +<br>1 000*51.9/6*5 |
| Payments to suppliers of materials in the 1st Sem | 681 725 € | 14 874*50/6*5.5 |

**Values for Balance Sheet**

| Description | Value (€) | Supporting Calculations |
|---|---|---|
| Public Sector Debts | | Social Security = 20 500 *0.2375 = 4 868.75 |
| Finished Products Stocks | 1 250*150 = **187 500 €** | Unit MCFP K1 = 2*50+2*7.5+2*1.2 = 117.4<br><br>Unit MCFP K = 1.2*117.4+3*6.5-0.2*51.9 = = 150 |
| Intermediate Product Stock | **66 331 €** | 565*117.4 |
| By-product Stock | **19 722** | 380*51.9 |

**Forecasted Profit & Loss Statement**

| | K | K' | Total |
|---|---|---|---|
| Sales | 1 980 000 a) | 103 800 b) | 2 083 800 |
| MCPS | 1 650 000 c) | 103 800 d) | 1 753 800 |
| **Gross Profit** | **330 000** | **0** | **330 000** |
| Non-manuf. Costs | | | |
| Variable | 99 000 e) | 0 | 99 000 |
| Fixed | | | 120 000 f) |
| **Operational Profit** | | | **111 000** |

a) 11 000 * 180
b) 2 000 * 51.9
c) 11 000 * 150
d) 2 000 * 51.9
e) 1 980 000 * 0.05
f) 4 000 * 12 * 1.6 + 43 200

**Medium and Long Term Loan**

| | 1/7/2013 | 1/1/2014 | 1/7/2014 | 1/1/2015 | 1/7/2015 | 1/1/2016 | 1/7/2016 |
|---|---|---|---|---|---|---|---|
| Initial (opening) Debt | 500 000 | 500 000 | 450 000 | 400 000 | 350 000 | 300 000 | 250 000 |
| Refund | | 50 000 | 50 000 | 50 000 | 50 000 | 50 000 | 50 000 |
| Closing Debt | 500 000 | 450 000 | 400 000 | 350 000 | 300 000 | 250 000 | 200 000 |
| | | | | | | | |

- Financial Budget

| | 1st Semester | 2nd Semester | Total |
|---|---|---|---|
| Capital Refund | 50 000 | 50 000 | 100 000 |
| Interests Payable | 12 000 | 10 000 | 22 000 |

- Forecasted  P & L Statement

10 000 + (200 000 x 0.08)/2= 18 000 €

- Balance Sheet: (200 000 x 0.08)/2 = 8 000 €

# EXERCISE 3 – SOLVING

# TSM COMPANY

**Production Programme**

| **Product Z** | **1st Semester** | **2nd Semester** | **Year** |
|---|---|---|---|
| Opening Stock | 2 000 | 6 625 | 2 000 |
| Sales | 20 000 | 30 000 | 50 000 |
| Production | c) 24 625 | c) 24 625 | b) 49 250 |
| Closing Stock | 6 625 | 1 250 | a)1 250 |
| **Product Y** | | | |
| Opening Stock | 500 | 1 000 | 500 |
| Sales | 9 000 | 6 000 | 15 000 |
| Consumptions | d) 29 550 | d) 29 550 | 59 100 |
| Production | g) 39 050 | h) 36 050 | 75 100 |
| Closing Stock | e) 1 000 | f) 1 500 | 1 500 |

**Supporting Calculations:**

a) 50000 / 12 x 0.3 = 1250
b) 50 000 + 1 250 – 2 000 = 49 250
c) 49 250/2 = 24 625
d) 24 625 x 1.2

e) 6 000/6
f) 9 000/6
g) 9 000 + 29 550 + 1 000 – 500 = 39 050
h) 6 000 + 29 250 +1 500 – 1 000 = 36 050

**Forecast of Sales Receipts**

| | 1st Semester | 2nd Semester |
|---|---|---|
| | **2 480 000 a)** | **4 560 000 b)** |

**Supporting Calculations:**

a) (9 000 x 80 + 20 000 x 150) /6 x 4
b) (9 000 x 80 + 20 000 x 150) /6 x 2 + (6 000 x 80 + 30 000 x 150) /6 x 4

**Budget of the Conversion Costs (€)**

| | 1st Semester | 2nd Semester | Year |
|---|---|---|---|
| Section I | a) 1 952 500 | b) 1 802 500 | 3 755 000 |
| Section II | c) 517 125 | d) 517 125 | 1 034 250 |
| Total | 2 469 625 | 2 319 625 | 4 789 250 |
| Manuf. Deprec. | 569 625 | 569 625 | 1 139 250 |
| Payable Conv. C. | 1 900 000 | 1 750 000 | 3 650 000 |

**Supporting Calculations:**

a) 5 x 39 050 x 10
b) 5 x 36 050 x 10
c) 3 x 24 625 x 7
d) 3 x 24 625 x 7

**Payments value in the 2nd Semester:**

1 900 000/6 x 0.5 + 1 750 000/6 x 5.5 = **1 762 500 €**

**Financial Budget**

| | **1st Semester** | **2nd Semester** | **Year** |
|---|---|---|---|
| **Cash Inflows** | | | |
| Opening Cash | 5 000 | 15 000 | 5 000 |
| Cash Budget Superavit | | 1 250 000 | 1 250 000 |
| S Term Loan | a) 510 000 | | 510 000 |
| **Total Cash Inflows** | **515 000** | **1 265 000** | **1 765 000** |
| **Cash Inflows** | | | |
| Closing Cash | 15 000 | 15 000 | 15 000 |
| Cash Budget Deficit | 500 000 | | 500 000 |
| Investments | | 265 000 | 265 000 |
| Payment ML Term Loan | | c) 200 000 | 200 000 |
| Payment Interests ML Term Loan | | d) 50 000 | 50 000 |
| Payment Interests S Term Loan | | b) 20 400 | 20 400 |
| Payment S Term Loan | | 510 000 | 510 000 |
| Short Term Investments | | 204 600 | 204 600 |
| | | | |
| **Total Cash Outflows** | **515 000** | **1 265 000** | **1 765 000** |

**Supporting Calculations:**

a) 515 000 – 5 000 = 510 000

b) 510 000 x 0.08 /2 = 20 400

c) 1 000 000 / 5 = 200 000

d) 1 000 000 x 0.05 = 50 000

**Forecasted Profit & Loss Statement**

| | Prod Y | Prod Z | Total |
|---|---|---|---|
| Sales | a) 1 200 000 | b) 7 500 000 | 8 700 000 |
| MCPS | c) 948 000 | d) 4 842 000 | 5 790 000 |
| Gross Profit | 252 000 | 2 658 000 | 2 910 000 |
| Variable Selling (distrib.) Costs | | e) 375 000 | 375 000 |
| DC+ AC | | | 2 000 000 |
| Operational Profit | | | 535 000 |
| Financial Income | | | f) 3 069 |
| Financial Expenses | | | g) 68 733.33 |
| Profit before Taxes | | | 469 335.7 |

**Supporting Calculations:**

a) (9 000 + 6 000) x 80 = 1 200 000

b) (20 000 + 30 000) x150 = 7 500 000

c) 15 000 x (12 x 1.1 + 10 x 5) = 15 000 x 63.2 = 948 000

d) 50.000 x (63.2 x 1.2 + 7 x 3) = 50 000 x 96.84 = 4 842 000

e) 7 500 000 x 0.05 = 375 000

f) 204 600 x 0.03 / 2 = 3 069

g) 20 400 + 50 000 / 12 x 10 + 800 000 x 0.05 / 12 x 2 =

= 20 400 + 41 666.666 + 6 666.666 = 68 7333.33

# EXERCISE 4 - SOLVING -

| Production Programme | | | |
|---|---|---|---|
| | 1st Sem | 2nd Sem | Total |
| Opening Stock | 6 500 | 4 000 | 6 500 |
| **Production** | **27 500** | **25 500** | **53 000** |
| Sales | 30 000 | 24 000 | 54 000 |
| Closing Stock | a) 4 000 | b) 5 500 | 5 500 |

a) 24 000/4
b) 30 000x1.1/6

| Purchases Programme | | | |
|---|---|---|---|
| | 1st Sem | 2nd Sem | Total |
| Opening Stock | 12 000 | 9 000 | 12 000 |
| Purchases | 30 000 | 30 000 | 60 000 |
| Consumptions | a) 33 000 | b) 30 600 | 63 600 |
| Closing Stock | 9 000 | 8 400 | c) 8 400 |

a) 27 500 x 1.2
b) 25 500 x 1.2
c) 12 000x0.7

Cash Budget

| | | | | |
|---|---|---|---|---|
| | | | | |
| | 15 | 25 | Total | Balance Sheet |
| Receipt | | | | |
| Previous Year | **900 000** | **0** | **900 000** | **0** |
| Year | | | | |
| Customers | 3 000 000 | 3 900 000 | 7 800 000 | 1 000 000 |
| Others | - | 43 250 | 43 250 | 0 |
| **Total 1** | 3 900 000 | 3 943 250 | 7 843 250 | 0 |
| | | | | |
| Payments | | | | |
| Previous Year | **1 537 125** | **77 375** | **1 614 500** | |
| Year | | | | |
| Purchases | 450 000 | 900 000 | 1 350 000 | 450 000 |
| Conversion Costs | **800 000** | **1 200 000** | **1 280 000** | **100 000** |
| Variable Selling (Distrib.) Costs | **180 000** | **144 000** | **324 000** | |
| Other non-manufacturing Costs | **240 000** | **240 000** | **480 000** | |
| Salaries | 600 000 | 800 000 | 1 400 000 | |
| Other Costs with employees | 65 625 | 65 625 | 131 250 | |
| Employer's Social Expenses | 118 750 | 166 250 | 285 000 | 47 500 |
| Others | 8 500 | - | 8 500 | |
| Total 2 | 4 000 000 | 3 593 250 | 7 593 250 | |
| | | | | |
| Balance | **-100 000** | **350 000** | **250 000** | |

**Receipt from clientes:**

- 1st semestrer**:** (30 000 x 150 /6) x 4 = 3 000 000 €
  2nd semester: (30 000 x 150 /6) x 2 + (24 000 x 150 /6) x 4= 1 500 000 + 2 400 000 = 3 900 000 €
- For Balance Sheet: (20 000 x 1 500 /6) x 2 = 1 000 000 €

**Payments to Suppliers:**

- 1st semester: (30 000 x 30 x 3)/6 x 3 = 450 000 €
- 2nd semester: 450 000 x 2 = 900 000 €
- For Balance Sheet: (30 000 x 30 x 3)/6 x 3 = 450 000 €

**Employer's Expenses Payment**

- 1st semester:0.2375 x 100 000 x 5 months = 118 750 €
- 2nd semester: 0,2375 x 100 000 x 7 months = 166 250 €
- For Balance Sheet: 0.2375 x 100 000 x 2 months = 47 500 €

**FINANCIAL BUDGET**

| | 1st Sem | 2nd Sem | Year |
|---|---|---|---|
| **Cash Inflows** | | | |
| Opening Cash | 25 000 | 35 000 | 25 000 |
| (+) Cash Budget | | 350 000 | 350 000 |
| Short Term Loan | 172 500 | | 172 500 |
| Sale Short-Term Investments | | | |
| Interests Short-Term Investments | | | |
| **Total Cash inflows** | **197 500** | **385 000** | **547 500** |
| | | | |
| Cash Outflows | | | |
| Closing Cash | 35 000 | 35 000 | 35 000 |
| (–) Cash Budget | 100 000 | | 100 000 |
| Payment ML Term Loan | 50 000 | 50 000 | 100 000 |
| Payment Interests ML Term Loan | 12 500 | 11 250 | 23 750 |
| Payment Short Term Loan | | | |
| Payment Interests Short Term Loan | | | |
| Payment Interests Cash Credit Line | | 8 625 | 8 625 |
| Refund Credit line | | 172 500 | 172 500 |

| | | | |
|---|---|---:|---:|
| Short-Term Investments | | 107 625 | 107 625 |
| | | | |
| **Total Short-Term Investments** | **197 500** | **385 000** | **547 500** |

**Refund of the M/L Term Loan: 500.000€: 10 half-yearly payments = 50 000 € per semester.**

**Interests of the M/L Term Loan:**
**1st semester: (500 000 x 0.05)/ 12 x 6 = 12 500 €**
**2nd semester: (450 000 x 0.05)/12 x 6 = 11 250 €**

**Interests of the Short Term: (197 500 x 0.10) /12 x 6 = 8 625€**

### 4. Unit MCFP

MCFP
unit 30*1.2+30*1.5+50*.5 = 106

### 5. Forecasted Profit & Loss Statement

| | Q |
|---|---|
| Sales | 8 100 000 |
| MCPS | 5 724 000 |
| Gross Profit | **2 376 000** |
| Variable Selling (distrib.) Costs | 324 000 |
| Other Non-Manufacturing Costs | 709 125 |
| Operational Profit | **1 342 875** |
| Financial Expenses | 36 958.33 |
| Interests Short-Term Investments | 1 076.25 |
| Profit before Taxes | **1 306 993** |

Sales = 54 000 x 150 €

MCPS = 106 x 54 000 = 5 724 000 €

Variable Selling (Distrib.) Costs = 324 000€

Other Non-Manufacturing Costs = 150 000 + Non-Manufacturing expenses with employees 0 150 000 + 559 125 = 709 125 €

| | |
|---|---|
| Expenses with employees | |
| Salaries per year | 1400000 |
| Employer's Expenses | 332500 |
| Other Expenses with Employees | 131250 |
| Total per year | **1863750** |
| | |
| Manufacturing | 1304625 |
| Non-Manufacturing | 559125 |

**Financial Expenses: 8 625 + 22 500 = 31 125 €**

- Interests of short term loan: 8 625 €
- Interests M/L Term Loan: 12 500/6 x 3 + 11 250 + (400 000 x 0.05/12) x 3= 6 250 + 11 250 + 5 000 = 22 500 €

**Interests of Short –Term Investments:** (107 625 x 0.02)/12 x 6 = 1 076.25 €

## 6. Forecasted Balance Sheet:

- Materials stocks: 8 400 x 305 = 252 000 €
- Finished products stocks: 5 500 x 106 = 583 000 €

**Interests receivable:** (107 625 x 0.02)/12 x 6 = 1 076.25 €

- Interests payable (400 000 x 0.05(/12 x) 3= 5 000 €