FINAP – sample test Name:

1. Show the equation and variables required to calculate the following:

a) net working capital

= current assets / short-term liabilities

b) inventory turnover time in days

= average inventories / daily costs of goods sold

c) dividend payout ratio

= payed dividends / net profit

d) dividend yield

= dividend per share / marked value of a share

2. A company manufactures wooden europallets in 2 plants. Calculate unit costs at the company-wide level and

a) evaluate their development both relative and absolute;

b) express the influence of a change in the structure of production on average unit costs (absolute and relative);

c) express the impact of changes in unit costs in each plant on average unit costs (absolute and relative).

Plant	Total cost [CZK]		Production [pc]		Unit costs [CZK/pc]			
	January	February	January	February	January	February	p0q1	p1q0
1	50,000	38,000	500	400	100	95	40000	47500
2	45,000	60,000	500	600	90	100	54000	50000
Sum	95,000	98,000	1000	1000			94000	97500

a) p = Q / q, ie unit cost = total cost / production

avg uc0 = ΣQ0 / Σq0 = 95000 / 1000 = 95

avg uc1 = ΣQ1 / Σq1 = 98000 / 1000 = 98

Index of avg uc = 98 / 95 = 1.03

Difference of avg uc = 98 – 95 = 3 CZK/pc

b) influence of structure

relative

= (Σp0q1 / Σq1) / (Σp0q0 / Σq0) = (94000 / 1000) / (95000 / 1000) = 94 / 95 = 0.989

absolute

= (Σp0q1 / Σq1) - (Σp0q0 / Σq0) = (94000 / 1000) - (95000 / 1000) = 94 - 95 = -1 CZK/pc

c) influence of unit costs

relative

= (Σp1q0 / Σq0) / (Σp0q0 / Σq0) = (97500 / 1000) / (95000 / 1000) = 97.5 / 95 = 1.026

absolute

= (Σp1q0 / Σq0) - (Σp0q0 / Σq0) = (97500 / 1000) - (95000 / 1000) = 97.5 - 95 = 2.5 CZK/pc

3. Use shift-share analysis to break down the employment change in the *agriculture sector* in the Central Bohemian Region.

(in thousands of employees)	Central Bohemian Region		Czech Republic		
	2004	2008	2004	2008	
Agriculture	30	20	200	160	
Industry	150	180	1,400	1,550	
Building industry	50	60	430	480	
Services	320	340	2,650	2,810	
Total	550	600	4,680	5,000	

National component = ax0 . (X1 / X0 – 1) = 30 . (5000 / 4680 – 1) = 2.05

Sectoral component = xa0 . (XA1 / XA0 – X1 / X0) = 30 . (160 / 200 – 5000 / 4680) = -8.05

Regional component = xa0 . (xa1 / xa0 – XA1 / XA0) = 30 . (20 / 30 – 160 / 200) = -4

4. Explain the impact of changes in return on sales; fixed assets-sales ratio; current assets-sales ratio; and assets on absolute change in profit by using the index logarithm method.

	(0)	(1)	
Profit	200	225	
Return on sales	0.2	0.15	
Assets turnover	1	1.25	
Assets	1,000	1,200	
Fixed assets-sales ratio	0.8	0.56	
Current assets-sales ratio	0.2	0.24	
Assets-sales ratio	1	0.8	

Profit
/ | \
ROS AT A
/ \
FA/Sales CA/Sales

Difference in profit ΔP = -25

Influence of return on sales

= ln I(ROS) / ln I(Profit) . ΔP = ln (0.15 / 0.2) / ln (225 / 200) . 25 = -61.06

Influence of assets turnover

= ln I(AT) / ln I(Profit) . ΔP = ln (1.25 / 1) / ln (225 / 200) . 25 = 47.36

Influence of assets

= ln I(A) / ln I(Profit) . ΔP = ln (1200 / 1000) / ln (225 / 200) . (-56) = 38.7

Influence of fixed assets-sales ratio

= influence of assets turnover ratio . Δfixed-assets-sales ratio / Δassets-sales ratio

= 47.36 . (-0.24) / (-0.2) = 56.83

Influence of current assets-sales ratio

= influence of assets turnover ratio . Δcurrent-assets-sales ratio / Δassets-sales ratio

= 47.36 . 0.04 / (-0.2) = -9.47

5. Theory

a) Explain the term “indicator”.

An economic indicator is a statistic about an economic activity.

b) Define the stock and interval indicators + examples.

The value of stock indicators is determined at a certain moment (eg the state of assets as at 31 December). The value of interval indicators is determined (arises) for a certain time interval (eg annual sales).

c) Define the homogeneous price variable and homogeneous quantity variable.

A quantity variable is homogeneous if its subunits make sense to sum. A price variable is homogeneous if it is created by the ratio of a homogeneous value variable and a homogeneous quantity variable.