

3.3.

$$d_t = 50$$

$$d_{t+1} = 75$$

$$DP_t = 500$$

$$DP_{t+1} = 1000$$

$$E_{DP} = \frac{d_{t+1} - d_t}{d_t} \cdot \frac{DP_{t+1} - DP_t}{DP_t}$$

$$E_{DP} = \frac{75 - 50}{50} \cdot \frac{1000 - 500}{500}$$

$$E_{DP} = \frac{25}{50} \cdot \frac{500}{500}$$

$$E_{DP} = \frac{25}{50} \cdot 1$$

$$E_{DP} = 0,5$$

paź 25-09:52

3.4.

$$d_t = 10$$

$$d_{t+1} = 20$$

$$P_t = 15$$

$$P_{t+1} = 5$$

$$E_{Py} = \frac{20 - 10}{10} \cdot \frac{5 - 15}{15} = \frac{1}{-2} \cdot \frac{1}{3} = -1,5$$

paź 25-10:10

3.5.

$$E_p = \frac{20\%}{-15\%} = -1\frac{1}{3}$$

paź 25-10:18

3.7.

$$\% \Delta D = 0,6 \cdot 2\% = 1,2\%$$

$$E_{DP} = 0,6$$

$$\% \Delta DP = 2\%$$

$$0,6 = \frac{\% \Delta D}{2\%}$$

paź 25-10:22

3.10 $E_{Py} = ?$

$$\% \Delta P_x = 200\%$$

$$\% \Delta y = -50\%$$

$$E_{Py} = \frac{-50\%}{200\%} = -\frac{1}{4}$$

paź 25-10:33

3.11 dajno X

$$E_{DF} = \frac{60 - 50}{50} \cdot \frac{1500 - 1000}{1000} = \frac{2}{5}$$

paź 25-10:39

3.11 Dmuch Y

$$E_{DP} = \frac{15 - 100}{\frac{1000 - 1000}{1000}} = -\frac{1}{2}$$

paź 25-10:40

$$E_{DP_2} = \frac{150 - 50}{\frac{1500 - 1000}{1000}} = 4$$

paź 25-10:42

3.12

a) $d_t = 40$

$d_{t+1} = 30$

$P_t = 200$

$P_{t+1} = 300$

b) $d_t = 30$

$d_{t+1} = 15$

$P_t = 300$

$P_{t+2} = 500$

$$E_{DP} = \frac{30 - 40}{\frac{300 - 200}{200}} = -\frac{1}{2}$$

$$E_{DP} = \frac{15 - 30}{\frac{500 - 300}{300}} = -\frac{3}{4}$$

paź 25-10:50

3.14 a) $-2 = \frac{\% \Delta d}{-10\%}$

$-2 \cdot (-10\%) = 20\%$

b) $1,5 = \frac{\% \Delta S}{-10\%}$

$\% \Delta S = -15\%$

paź 25-11:01

3.3.

$$E_{DP} = \frac{75 - 50}{\frac{1000 - 500}{500}} = \frac{1}{2}$$

d - popyt

DP - dochód

$d_t = 50$

$d_{t+1} = 75$

$DP_t = 500$

$DP_{t+1} = 1000$

paź 25-11:32

3.4

$D_{xt} = 10$

$D_{x,t+1} = 20$

$P_{yt} = 15$

$P_{y,t+1} = 5$

$$E_{Py} = \frac{20 - 10}{\frac{5 - 15}{15}} = -\frac{3}{2}$$

paź 25-11:48

2. zad 3.5

$$E_p = \frac{20\%}{-15\%} = -\frac{4}{3}$$

i 2. zad 3.7 $E_{DP} = 0,6$

$$\begin{aligned} \% \Delta D &= ? \\ \% \Delta DP &= 2\% \\ 0,6 \cdot \frac{x}{2\%} &= 1,2\% \end{aligned}$$

paź 25-11:54

3.10

$$E_{py} = \frac{-50\%}{200\%} = -\frac{1}{4}$$

3.11

a) dobro X

$$E_{DP} = \frac{60-50}{\frac{1500-1000}{1000}}$$

$$E_{DP} = 0,4$$

$d_t = 50$
 $d_{t+1} = 60$
 $DP_t = 1000$
 $DP_{t+1} = 1500$

paź 25-12:06

3.11

$$E_{DP} = \frac{\frac{75-100}{100}}{\frac{1500-1000}{100}} = \frac{-\frac{25}{100}}{\frac{500}{1000}} = -\frac{1}{2}$$

$d_t = 100$
 $d_{t+1} = 75$
 $P_t = 1000$
 $P_{t+1} = 1500$

paź 25-12:13

3.11

Dobro Z

$$E_{DP} = \frac{150-50}{\frac{1500-1000}{1000}} = 4$$

$d_t = 50$
 $d_{t+1} = 150$
 $DP_t = 1000$
 $DP_{t+1} = 1500$

paź 25-12:16

3.12

a) $d_t = 40$ $E_p = \frac{30-40}{40}$

$$E_p = \frac{30-40}{\frac{300-200}{200}} = -\frac{1}{2}$$

$d_{t+1} = 30$
 $P_t = 200$
 $P_{t+1} = 300$

paź 25-12:18

zad 3.12 b)

$$E_p = \frac{15-30}{\frac{500-300}{300}} = -\frac{3}{4}$$

$d_t = 30$
 $d_{t+1} = 15$
 $P_t = 300$
 $P_{t+1} = 500$

paź 25-12:23

$$3.14 \quad E_p = -2$$

$$\% \Delta P = -10\%$$

$$-2 = \frac{x}{-10\%} \quad x = 20\%$$

b)

$$1,5 = \frac{x}{-10\%}$$

$$1,5 = \frac{x}{-0,1}$$

$$0,15 = x \quad x = -15\%$$

paź 25-12:29

$$3.17$$

$$P_t = 100$$

$$S_t = 200$$

$$E_p = 4$$

$$S_{t+1} = ?$$

$$P_{t+1} = 120$$

$$4 = \frac{x - 200}{\frac{120 - 100}{100}}$$

$$x = 360$$

paź 25-12:37

$$3.18$$

$$E_{op} = 1,5$$

$$1,5 = \frac{x}{5\%} \quad x = 7,5\%$$

$$E_p = -0,35$$

$$-0,35 = \frac{x}{5\%} \quad x = -1,75\%$$

paź 25-12:47

$$3.3$$

$$D_{t+1} = 95 \quad I_{t-1} = 1000$$

$$D_t = 50 \quad I_t = 500$$

$$E_I = \frac{\frac{95-50}{50}}{\frac{1000-500}{500}} = \frac{\frac{25}{50}}{\frac{500}{500}} = \frac{1}{2}$$

$$3.5$$

$$\% \Delta d = 20\%$$

$$\% \Delta P = -15\%$$

$$E_p = \frac{20\%}{-15\%} = -\frac{4}{3}$$

paź 25-13:17

$$3.4.$$

$$d_{x_t} = 10 \quad P_{x_t} = 15$$

$$d_{x_{t+1}} = 20 \quad P_{x_{t+1}} = 5$$

$$E_{p_y} = \frac{\frac{20-10}{10}}{\frac{5-15}{15}} = -45$$

paź 25-13:34

$$3.7$$

$$EDP = 0,6$$

$$\% \Delta P = 2\%$$

$$0,6 = \frac{\% \Delta d}{2\%} = 1,2\%$$

paź 25-13:47

3.10

$$P_y = 1025 \quad \% \Delta P_x = 200\%$$

$$d_y = 500 \quad \% \Delta d_y = -50\%$$

$$E_{P_x} = \frac{-50\%}{200\%} = -\frac{1}{4}$$

paź 25-13:53

3.11

$$D_t = 50 \quad I_t = 1000$$

$$D_{t+1} = 60 \quad I_{t+1} = 1500$$

$$E_I = \frac{\frac{60-50}{50}}{\frac{1500-1000}{1000}} = \frac{2}{5}$$

$$D_t = 100 \quad I_t = 1000$$

$$D_{t+1} = 75 \quad I_{t+1} = 1500$$

$$E_I = \frac{\frac{75-100}{100}}{\frac{1500-1000}{1000}} = -\frac{1}{2}$$

paź 25-14:00

$$Z \quad E_{DP} = \frac{\frac{150-50}{50}}{\frac{1500-1000}{1000}} = \frac{\frac{2}{1}}{\frac{1}{2}} = 4$$

paź 25-14:04

3.12

$$a) \quad d_t = 40 \quad P_t = 200$$

$$d_{t+1} = 30 \quad P_{t+1} = 300$$

$$E_P = \frac{\frac{30-40}{40}}{\frac{300-200}{200}} = -\frac{1}{2}$$

$$b) \quad d_t = 30 \quad P_t = 300$$

$$d_{t+1} = 15 \quad P_{t+1} = 500$$

$$E_P = \frac{\frac{15-30}{30}}{\frac{500-300}{300}} = -\frac{3}{4}$$

paź 25-14:09

$$3.14 a) \quad -2 = \frac{\% \Delta d}{-10\%}$$

$$E_P = -2 \quad \% \Delta d = -2 \cdot (-10\%) = 20\%$$

$$\% \Delta d = ?$$

$$\% \Delta P = -10\%$$

paź 25-14:21

$$b) \quad E_P = 1,5 \quad 1,5 = \frac{\% \Delta S}{-10\%}$$

$$\% \Delta S = ? \quad \% \Delta S = 1,5 \cdot (-10\%)$$

$$\% \Delta P = -10\% \quad \% \Delta S = -15\%$$

paź 25-14:25

3.17.

$$P_t = 100 \quad 4 = \frac{S_{t+1} - 200}{\frac{120 - 100}{100}} = 360$$

$$S_t = 200$$

$$E_p = 4$$

$$P_{t+1} = 120 \quad 4 = \frac{S_{t+1} - 200}{200} \cdot \frac{100}{20}$$

$$4 = \frac{S_{t+1} - 200}{40}$$

$$S_{t+1} - 200 = 4 \cdot 40$$

$$S_{t+1} = 160 + 200$$

$$S_{t+1} = 360$$

paź 25-14:31

Zad. 3.3

$$d_t = 50 \quad E_{DP} = \frac{75 - 50}{\frac{1000 - 500}{500}} =$$

$$d_{t+1} = 75 \quad = \frac{25}{500} \cdot 1 = \frac{1}{2}$$

$$DP_t = 500$$

$$DP_{t+1} = 1000$$

paź 25-14:42

3.4

$$d_{x,t} = 10$$

$$d_{x,t+1} = 20 \quad E_{P_y} = \frac{20 - 10}{\frac{5 - 15}{15}} = -1,5$$

$$P_{y,t} = 15$$

$$P_{y,t+1} = 5$$

paź 25-15:13

3.5

$$E_p = \frac{\% \Delta d}{\% \Delta p} = \frac{20\%}{-15\%} = -1 \frac{1}{3}$$

3.7

$$0,6 = \frac{\% \Delta d}{2\%} \cdot 2$$

$$1,2\% = \% \Delta d$$

paź 25-15:18

3.10

$$\% \Delta P_y = 200\% \quad E_{P_y} = \frac{-50\%}{200\%} = -\frac{1}{4}$$

$$\% \Delta d_x = -50\%$$

paź 25-15:27

3.11

$$E_{P_x} = \frac{60 - 50}{\frac{1500 - 1000}{1000}} = \frac{2}{5}$$

$$E_{D_x} = \frac{75 - 100}{\frac{1500 - 1000}{100}} = \frac{-1}{\frac{1}{2}} = -\frac{1}{2}$$

$$E_{D_z} = \frac{120 - 50}{\frac{1300 - 1000}{1000}} = \frac{2}{\frac{1}{2}} = 4$$

paź 25-15:32

3.12

$$a) E_p = \frac{\frac{30-40}{40}}{\frac{300-200}{200}} = \frac{-\frac{10}{40}}{\frac{100}{200}} = -\frac{1}{2}$$

$$b) E_p = \frac{\frac{45-30}{30}}{\frac{500-300}{300}} = -\frac{3}{4}$$

paź 25-15:39

3.14.

$$a) \begin{cases} E_p = \frac{\% \Delta d}{\% \Delta p} \\ -2 = \frac{\% \Delta d}{-10\%} \\ \% \Delta d = 20\% \end{cases}$$

$$b) E_p = 1,5 = \frac{\% \Delta S}{-10\%}$$

$\% \Delta S = -15\%$

paź 25-15:44

3.17

$$E_p = 4 \quad L = \frac{S_{t+1} - 200}{\frac{120 - 100}{100}} = 360$$

$P_t = 100$
 $P_{t+1} = 120$
 $S_t = 200$
 $S_{t+1} = ?$

paź 25-15:56

3.18.

$$E_{DP} = 1,5$$

$$1,5 = \frac{\% \Delta d}{5\%} \cdot 1,5\%$$

$$\% \Delta d = 7,5\%$$

$$\% \Delta d = 7,5\% - 1,75\% = \underline{\underline{5,75\%}}$$

$-0,35 = \frac{\% \Delta d}{5}$
 $\% \Delta d = -1,75\%$

paź 25-16:02

3.3.

$d_t = 50$
 $d_{t+1} = 75$
 $D_t = 500$
 $D_{t+1} = 1000$

$D = 500$
 $\Delta D = 500$

$$E_{DPP} = \frac{75-50}{50} = \frac{1000-500}{500} = 2$$

$$E_{PP} = \frac{\frac{75}{50}}{\frac{1000}{500}} = \frac{1,5}{2} = \frac{3}{4}$$

paź 25-16:20

3.4.

$d_{xt} = 10$
 $d_{xt+1} = 20$

$P_{yt} = 15$
 $P_{yt+1} = 5$

$$E_{py} = \frac{\frac{20-10}{10}}{\frac{5-15}{15}} = \frac{3}{2}$$

paź 25-17:02

zad 3.5
Dane:
% $\Delta d = 20\%$
% $\Delta P = 15\%$

$$E_p = \frac{\% \Delta d}{\% \Delta P} = \frac{20\%}{-15\%} = -\frac{4}{3}$$

paź 25-17:08

3.7.
 $E_{DP} = 0,6$
% $\Delta DP = 2\%$
% $\Delta d = ?$

$$0,6 = \frac{\% \Delta d}{2\%}$$

$$\% \Delta d = 12\%$$

paź 25-17:15

3.10.
 $p_{xt} = 10$
% $\Delta p = 200\%$
 $d_{xt} = 500$
% $\Delta d_x = -50\%$

$$E_{p_x} = \frac{-50\%}{200\%} = -\frac{1}{4}\%$$

paź 25-17:20

3.11. dobro X
 $d_{t+1} = 50$
 $d_{t+1} = 60$
 $DP_t = 1000$
 $DP_{t+1} = 1500$

$$E_{DP} = \frac{60-50}{\frac{1500-1000}{1000}} = \frac{10}{500} = \frac{2}{5}$$

paź 25-17:29

Dobro Y
 $d_t = 100$ $D_t = 1000$
 $d_{t+1} = 75$ $D_{t+1} = 1500$

$$D_{DP} = \frac{75-100}{\frac{1500-1000}{1000}} = \frac{-25}{500} = -\frac{1}{20} = -\frac{1}{2}$$

paź 25-17:34

$d_t = 50$
 $d_{t+1} = 150$
 $DP_t = 1000$
 $DP_{t+1} = 1500$

$$E_{DP} = \frac{150-50}{\frac{1500-1000}{1000}} = \frac{100}{500} = \frac{2}{5} = 4$$

paź 25-17:36

3.12.

a)

$$d_t = 40$$

$$d_{t+1} = 30$$

$$P_t = 200$$

$$P_{t+1} = 300$$

$$E_p = \frac{30-40}{40} = \frac{-1}{4} = -\frac{1}{4}$$

$$\frac{300-200}{200} \cdot \frac{1}{2} = \frac{1}{2} \cdot \frac{2}{4} = \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$$

$$-\frac{1}{4} \cdot \frac{2}{1} = -\frac{2}{4}$$

b)

$$P_t = 300$$

$$P_{t+1} = 500$$

$$d_t = 30$$

$$d_{t+1} = 15$$

$$E_p = \frac{15-30}{30} = \frac{-1}{2} = -\frac{1}{2}$$

$$\frac{500-300}{300} = \frac{2}{3} = \frac{3}{5}$$

paź 25-17:38

3.14

$$E_p = -2$$

$$\% \Delta P = -10\%$$

$$-2 = \frac{\% \Delta d}{-10\%} \quad | \cdot (-10\%)$$

$$20\% = \% \Delta d$$

paź 25-17:45

b)

$$E_p = 1,5$$

$$1,5 = \frac{\% \Delta S}{-10\%}$$

$$\% \Delta P = -10\%$$

$$\% \Delta S = ?$$

$$-15\% = \% \Delta S$$

paź 25-17:52

3.17.

$$P_1 = 100$$

$$S = 200$$

$$E_s = 4$$

$$S_2 = ?$$

$$P_2 = 120$$

$$4 = \frac{S_2 \cdot 200}{200} \cdot \frac{120-100}{100}$$

$$4 = \frac{S_2 \cdot 200}{200} \cdot \frac{20}{100}$$

$$4 = \frac{S_2 \cdot 200}{200} \cdot \frac{1}{5}$$

$$S_2 = 360$$

paź 25-17:57

3.18.

$$E_{DP} = 1,5 \quad \% \Delta P = 5\%$$

$$1,5 = \frac{\% \Delta d}{5\%} \cdot 5\%$$

$$\% \Delta d = 7,5\%$$

$$-0,35 = \frac{\% \Delta d}{5\%}$$

$$\% \Delta d = -1,75\%$$

$$\% \Delta d = 7,5\% - 1,75\% = 5,75\%$$

paź 25-18:04

3.3.

$$d_t = 50 \quad \text{dochód}_t = 500$$

$$d_{t+1} = 75 \quad \text{dochód}_{t+1} = 1000$$

$$E_{DP} = \frac{75-50}{50} = \frac{25}{50} = 0,5$$

$$E_{DP} = \frac{1000-500}{500} = 0,5$$

paź 25-18:16