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# Matematika ve světě firem

Vojtěch Přibyla

Controlling specialization

Vienna University – Executive academy

# O čem dnes budu mluvit?

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Executive academy

Corporate valuation

Treasury management

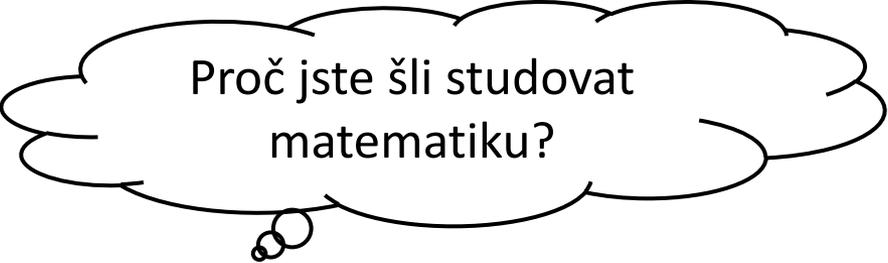
Performance management

Strategic dynamics

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# Úvod

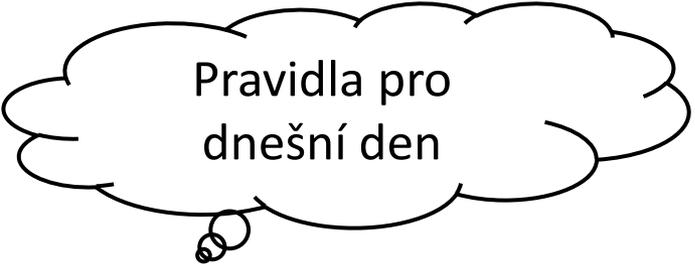
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Proč jste šli studovat  
matematiku?



Proč já?



Pravidla pro  
dnešní den

# Executive academy

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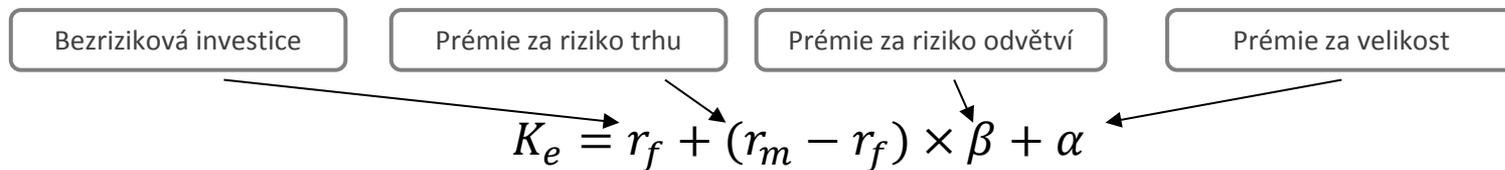
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# Corporate valuation - M&A (1)

„Price is what you pay and value is what you get“  
(Warren Buffet)

## Capital Asset Pricing Model



$K_e$  - požadavek na výnos kapitálu

$r_f$  - bezrizikový výnos

$r_m$  - předpokládaná hodnota tržního výnosu portfolia

$\beta$  - volatilita výnosu na burze

$\alpha$  - riziková prémie pro malé společnosti

[www.damodaran.com](http://www.damodaran.com)

# Corporate valuation - M&A (2)

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## Discounted Cashflow method

### **EBIT (Earnings before interest and taxes)**

- normalized tax (25% \* EBIT)

### **NOPLAT (Net operating profit less adjusted tax)**

+ depreciation

+/-  $\Delta$  working capital

### **CF (without interest and taxes on interest)**

- investments

### **Free Cash Flow**

1. Stanovení free cashflow



2. Stanovení diskontní sazby (WACC)



3. Vypočet celkové hodnoty

$$WACC = K_e \times \frac{E}{D+E} + K_d \times (1 - T) \times \frac{D}{D+E}$$

$K_e$  - požadavek na výnos kapitálu

$E$  - tržní hodnota vlastního kapitálu

$K_d$  - požadavek na výnos poskytovatelů dluhu

$D$  - tržní hodnota dluhu

$T$  - daňová sazba společností

**General Information**

Company Name	Gasparro Corp.	
Ticker	JDG	
Stock Exchange	NYSE	
Fiscal Year Ending	Dec-31	
Moody's Corporate Rating	Baa3	
S&P Corporate Rating	BBB-	
Predicted Beta	1.25	
Marginal Tax Rate	38.0%	

**Selected Market Data**

Current Price	12/20/2012	\$50.00
% of 52-week High		80.0%
52-week High Price	7/20/2012	62.50
52-week Low Price	4/5/2012	40.00
Dividend Per Share (MRQ)		0.25

Fully Diluted Shares Outstanding	100,000
<b>Equity Value</b>	<b>\$5,000.0</b>

Plus: Total Debt	1,850.0
Plus: Preferred Stock	-
Plus: Noncontrolling Interest	-
Less: Cash and Cash Equivalents	(100.0)
<b>Enterprise Value</b>	<b>\$6,750.0</b>

**Trading Multiples**

	LTM 9/30/2012	NFY 2012E	NFY+1 2013E	NFY+2 2014E
EV / Sales	1.4x	1.4x	1.3x	1.2x
Metric	\$4,725.0	\$5,000.0	\$5,350.0	\$5,625.0
EV / EBITDA	7.5x	7.1x	6.6x	6.3x
Metric	\$900.0	\$950.0	\$1,025.0	\$1,075.0
EV / EBIT	9.3x	8.8x	8.2x	7.8x
Metric	\$725.0	\$765.0	\$825.0	\$865.0
P/E	12.9x	11.2x	10.0x	9.1x
Metric	\$3.88	\$4.45	\$5.00	\$5.50
FCF Yield	6.3%	7.0%	7.5%	8.3%
Metric	\$315.0	\$350.0	\$375.0	\$415.0

**LTM Return on Investment Ratios**

Return on Invested Capital	21.1%
Return on Equity	23.3%
Return on Assets	7.9%
Implied Annual Dividend Per Share	2.0%

**LTM Credit Statistics**

Debt/Total Capitalization	51.7%
Total Debt/EBITDA	2.1x
Net Debt/EBITDA	1.9x
EBITDA/Interest Expense	9.0x
(EBITDA-capex)/Interest Expense	7.0x
EBIT/Interest Expense	7.3x

**Growth Rates**

	Sales	EBITDA	FCF	EPS
<b>Historical</b>				
1-year	8.4%	5.1%	13.2%	6.4%
2-year CAGR	9.5%	8.2%	14.2%	11.6%
<b>Estimated</b>				
1-year	11.1%	15.2%	16.7%	31.0%
2-year CAGR	9.0%	11.5%	11.8%	21.3%
Long-term				12.0%

**Reported Income Statement**

	Fiscal Year Ending December 31,			Prior Stub 9/30/2011	Current Stub 9/30/2012	LTM 9/30/2012
	2009A	2010A	2011A			
<b>Sales</b>	<b>\$3,750.0</b>	<b>\$4,150.0</b>	<b>\$4,500.0</b>	<b>\$3,375.0</b>	<b>\$3,600.0</b>	<b>\$4,725.0</b>
COGS (incl. D&A)	2,450.0	2,700.0	2,925.0	2,200.0	2,350.0	3,075.0
<b>Gross Profit</b>	<b>\$1,300.0</b>	<b>\$1,450.0</b>	<b>\$1,575.0</b>	<b>\$1,175.0</b>	<b>\$1,250.0</b>	<b>\$1,650.0</b>
SG&A	750.0	830.0	900.0	675.0	720.0	945.0
Other Expense / (Income)	-	-	-	-	-	-
<b>EBIT</b>	<b>\$550.0</b>	<b>\$620.0</b>	<b>\$675.0</b>	<b>\$500.0</b>	<b>\$530.0</b>	<b>\$705.0</b>
Interest Expense	110.0	105.0	102.0	75.0	73.0	100.0
<b>Pre-tax Income</b>	<b>\$440.0</b>	<b>\$515.0</b>	<b>\$573.0</b>	<b>\$425.0</b>	<b>\$457.0</b>	<b>\$605.0</b>
Income Taxes	167.2	195.7	217.7	161.5	173.7	229.9
Noncontrolling Interest	-	-	-	-	-	-
Preferred Dividends	-	-	-	-	-	-
<b>Net Income</b>	<b>\$272.8</b>	<b>\$319.3</b>	<b>\$355.3</b>	<b>\$263.5</b>	<b>\$283.3</b>	<b>\$375.1</b>
Effective Tax Rate	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Weighted Avg. Diluted Shares	100.0	100.0	100.0	100.0	100.0	100.0
<b>Diluted EPS</b>	<b>\$2.73</b>	<b>\$3.19</b>	<b>\$3.55</b>	<b>\$2.64</b>	<b>\$2.83</b>	<b>\$3.75</b>

**Adjusted Income Statement**

Reported Gross Profit	\$1,300.0	\$1,450.0	\$1,575.0	\$1,175.0	\$1,250.0	\$1,650.0
Non-recurring Items in COGS	-	-	-	-	30.0	30.0
<b>Adj. Gross Profit</b>	<b>\$1,300.0</b>	<b>\$1,450.0</b>	<b>\$1,575.0</b>	<b>\$1,175.0</b>	<b>\$1,280.0</b>	<b>\$1,680.0</b>
% margin	34.7%	34.9%	35.0%	34.8%	35.6%	35.6%
Reported EBIT	\$550.0	\$620.0	\$675.0	\$500.0	\$530.0	\$705.0
Non-recurring Items in COGS	-	-	-	-	30.0	30.0
Other Non-recurring Items	-	-	(25.0)	-	15.0	(10.0)
<b>Adjusted EBIT</b>	<b>\$550.0</b>	<b>\$620.0</b>	<b>\$650.0</b>	<b>\$500.0</b>	<b>\$575.0</b>	<b>\$725.0</b>
% margin	14.7%	14.9%	14.4%	14.8%	16.0%	15.3%
Depreciation & Amortization	155.0	165.0	175.0	125.0	125.0	175.0
<b>Adjusted EBITDA</b>	<b>\$705.0</b>	<b>\$785.0</b>	<b>\$825.0</b>	<b>\$625.0</b>	<b>\$700.0</b>	<b>\$900.0</b>
% margin	18.8%	18.9%	18.3%	18.5%	19.4%	19.0%
Reported Net Income	\$272.8	\$319.3	\$355.3	\$263.5	\$283.3	\$375.1
Non-recurring Items in COGS	-	-	-	-	30.0	30.0
Other Non-recurring Items	-	-	(25.0)	-	15.0	(10.0)
Non-operating Non-rec. Items	-	-	-	-	-	-
Tax Adjustment	-	-	9.5	-	(17.1)	(7.6)
<b>Adjusted Net Income</b>	<b>\$272.8</b>	<b>\$319.3</b>	<b>\$339.8</b>	<b>\$263.5</b>	<b>\$311.2</b>	<b>\$387.5</b>
% margin	7.3%	7.7%	7.6%	7.8%	8.6%	8.2%
Adjusted Diluted EPS	\$2.73	\$3.19	\$3.40	\$2.64	\$3.11	\$3.88

**Cash Flow Statement Data**

Cash From Operations	400.0	450.0	500.0	360.0	380.0	520.0
Capital Expenditures	170.0	185.0	200.0	150.0	155.0	205.0
% sales	4.5%	4.5%	4.4%	4.4%	4.3%	4.3%
<b>Free Cash Flow</b>	<b>\$230.0</b>	<b>\$265.0</b>	<b>\$300.0</b>	<b>\$210.0</b>	<b>\$225.0</b>	<b>\$315.0</b>
% margin	6.1%	6.4%	6.7%	6.2%	6.3%	6.7%
FCF / Share	\$2.30	\$2.65	\$3.00	\$2.10	\$2.25	\$3.15
Depreciation & Amortization	155.0	165.0	175.0	125.0	125.0	175.0
% sales	4.1%	4.0%	3.9%	3.7%	3.5%	3.7%

**Notes**

- (1) In Q2 2012, Gasparro Corp. recorded a \$30 million pre-tax inventory valuation charge related to product obsolescence (see Q2 2012 10-Q MD&A, page 14).
- (2) In Q4 2011, Gasparro Corp. realized a \$25 million pre-tax gain on the sale of a non-core business (see 2011 10-K MD&A, page 45).
- (3) In Q3 2012, Gasparro Corp. recognized \$15 million of pre-tax restructuring costs in connection with the closure of a manufacturing facility (see Q3 2012 10-Q MD&A, page 15).

**Balance Sheet Data**

Cash and Cash Equivalents	
Accounts Receivable	
Inventories	
Prepays and Other Current Assets	
<b>Total Current Assets</b>	
Property, Plant and Equipment, net	
Goodwill and Intangible Assets	
Other Assets	
<b>Total Assets</b>	
Accounts Payable	
Accrued Liabilities	
Other Current Liabilities	
<b>Total Current Liabilities</b>	
Total Debt	
Other Long-Term Liabilities	
<b>Total Liabilities</b>	
Noncontrolling Interest	
Preferred Stock	
Shareholders' Equity	
<b>Total Liabilities and Equity</b>	
Balance Check	

**Calculation of Fully Diluted Shares Outstanding**

Basic Shares Outstanding	
Plus: Shares from In-the-Money Options	
Less: Shares Repurchased	
<b>Net New Shares from Options</b>	
Plus: Shares from Convertible Securities	
<b>Fully Diluted Shares Outstanding</b>	

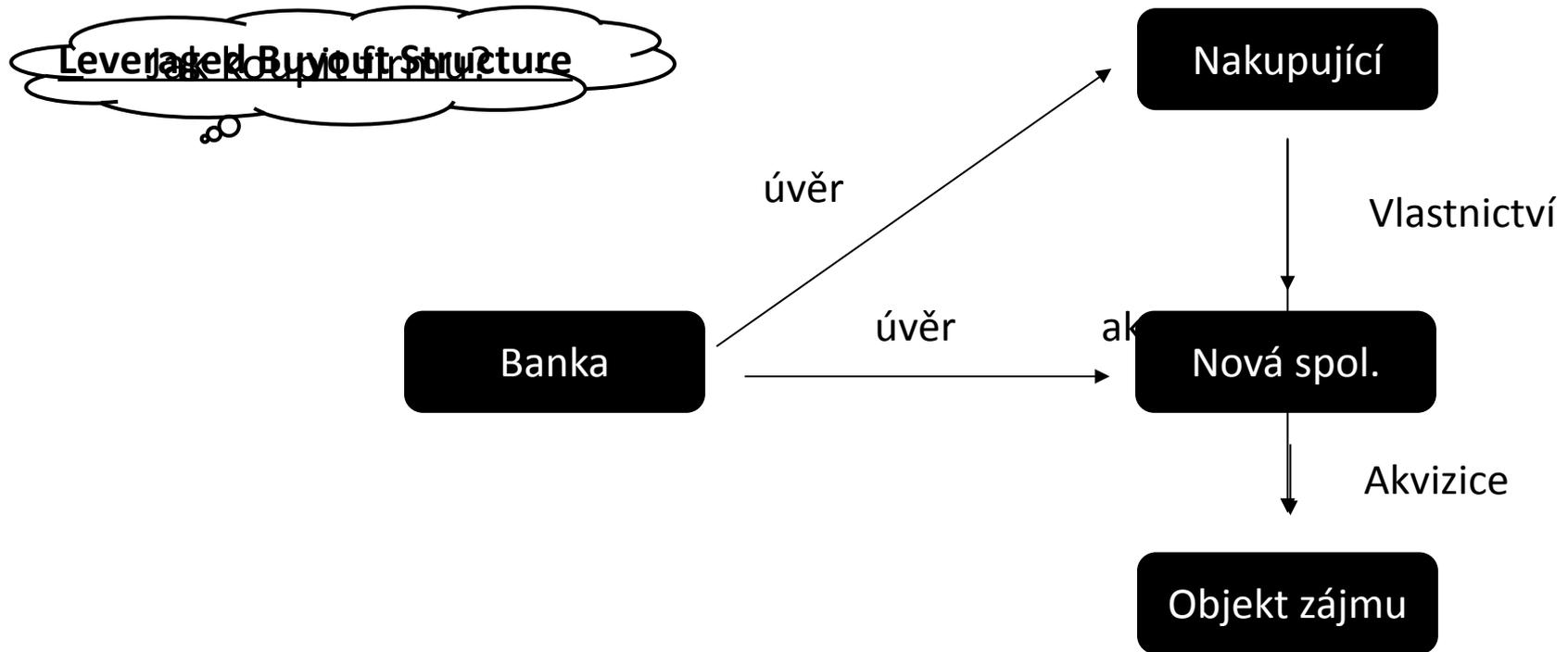
**Options/Warrants**

Tranche	Number of Shares	Exercise Price	In
Tranche 1	1,250	\$10.00	
Tranche 2	1,000	30.00	
Tranche 3	0,500	40.00	
Tranche 4	0,250	60.00	
Tranche 5	-	-	
<b>Total</b>	<b>3,000</b>		

**Convertible Securities**

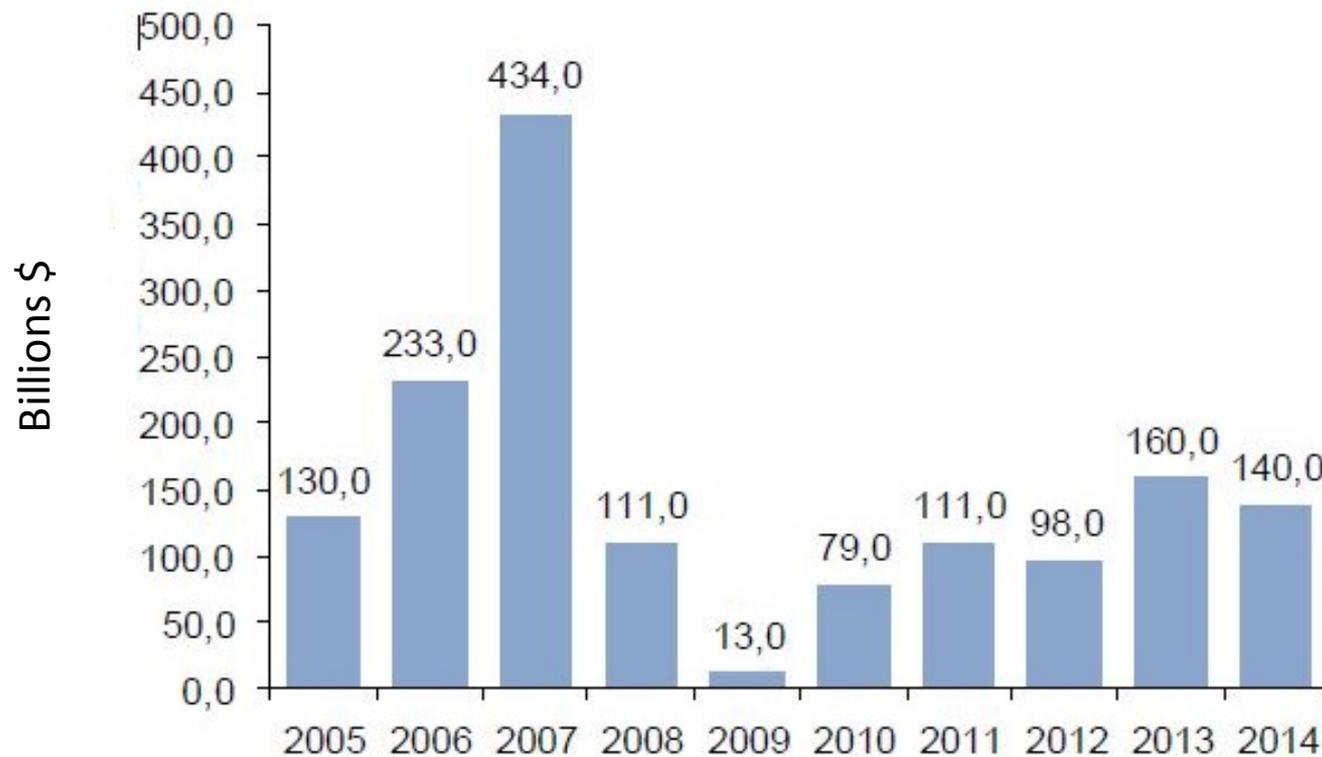
	Amount	Conversion Price	C
Issue 1	-	-	
Issue 2	-	-	
Issue 3	-	-	
Issue 4	-	-	
Issue 5	-	-	
<b>Total</b>			

# Corporate valuation - M&A (3)



# Corporate valuation - M&A (4)

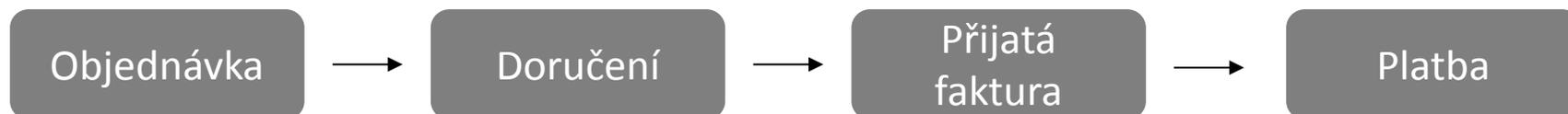
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# Treasury management (1)

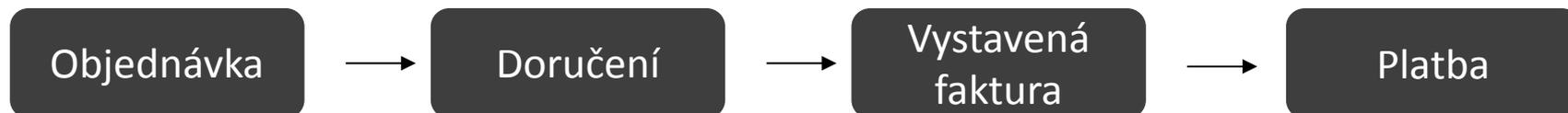
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## Nákup



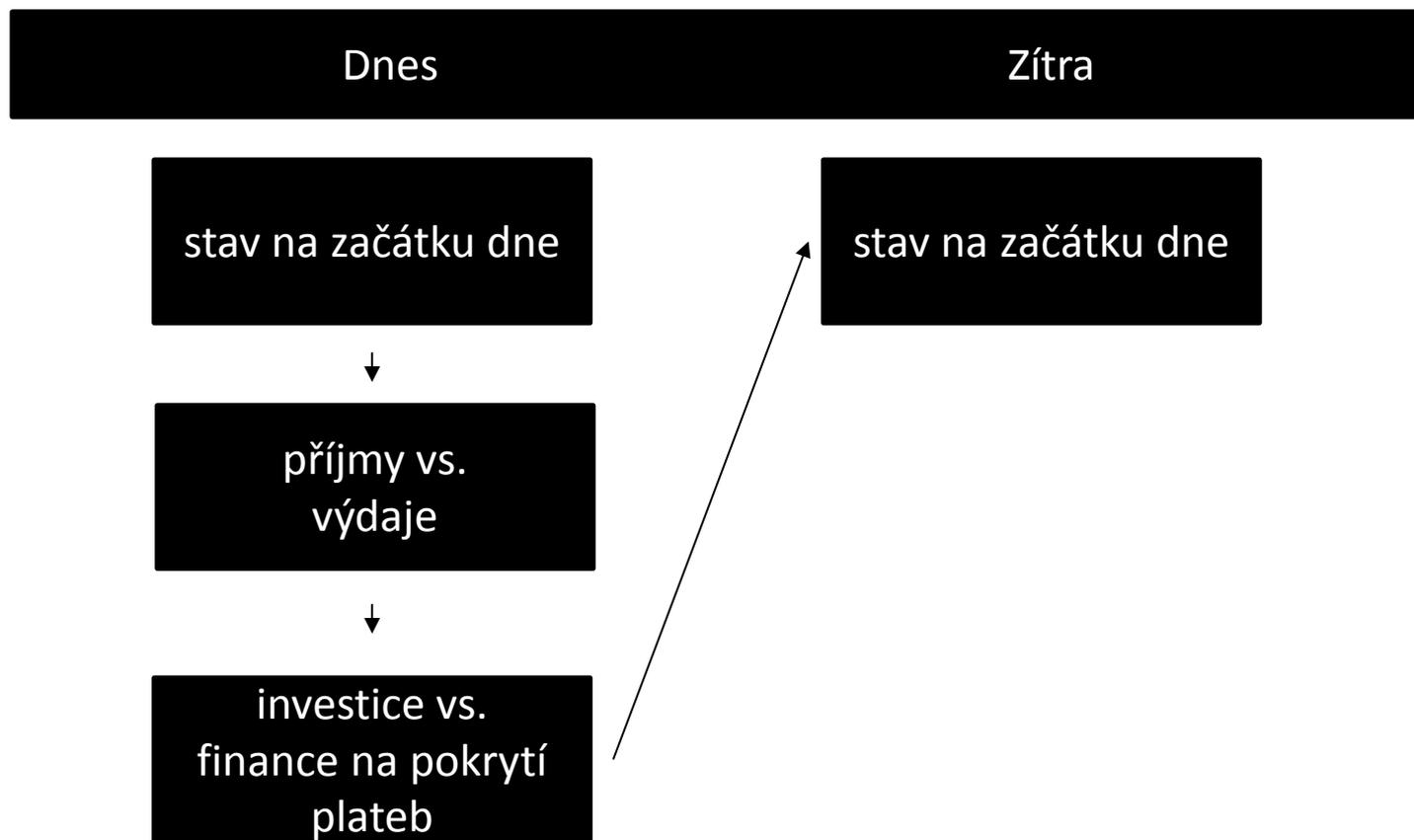
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## Prodej

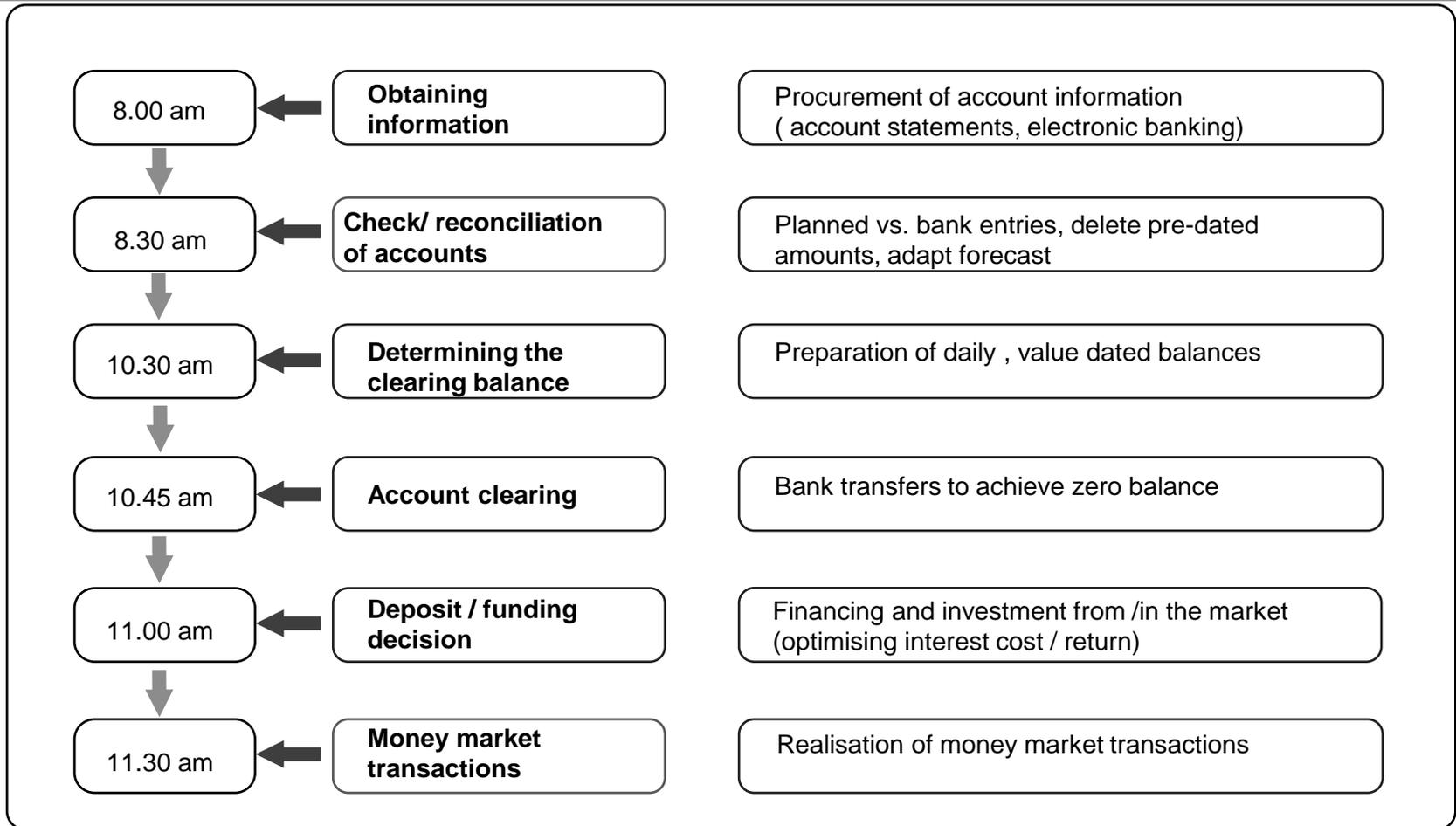


# Treasury management (2)

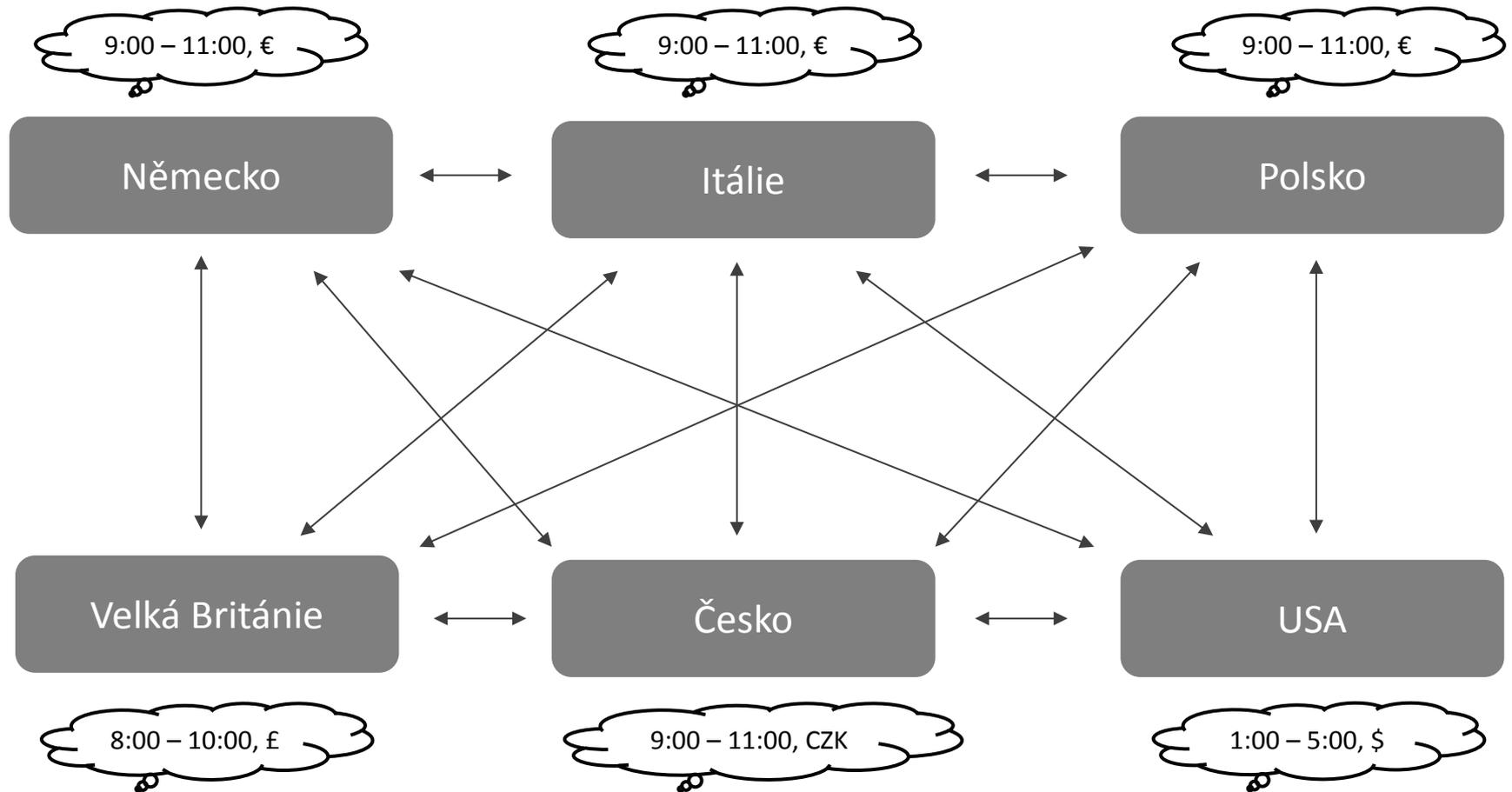
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# Treasury management (3)

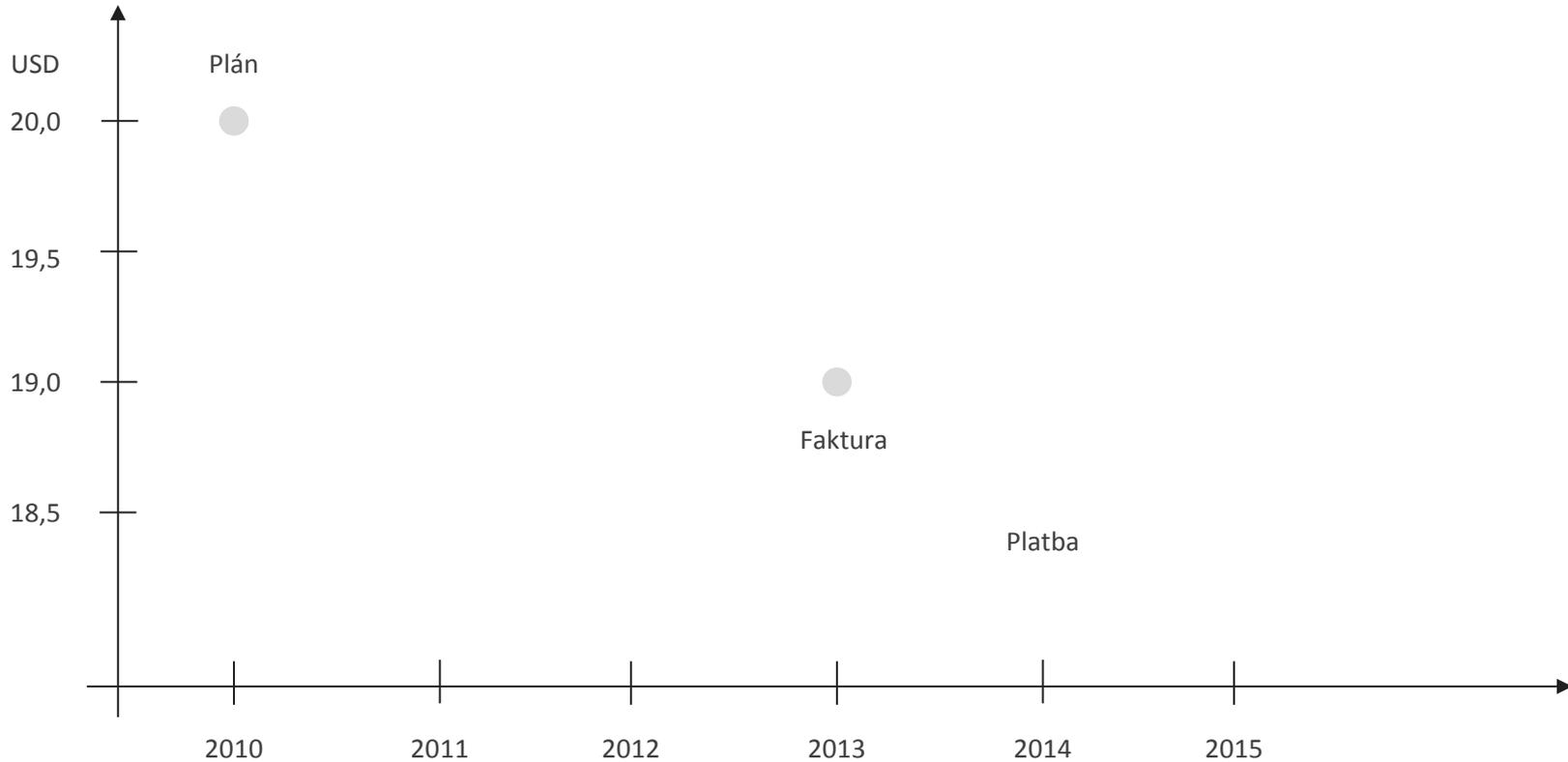


# Treasury management (4)



# Treasury management (5)

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# Performance management (1)

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# Performance management (2)

