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# WORKING CAPITAL MANAGEMENT AND LIQUIDITY RESERVES: THE CONTEXT OF RISK RETENTION

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# Purpose of the study

## **COGNITIVE**

- to develop a conceptual model of working capital decisions as linked to risk management requirements
- to develop the concept of liquidity reserves and to define their attributes (relevance and time-suitability)

## **EMPIRICAL**

- to analyse the level of liquidity reserves of sampled Polish listed companies
- to identify these aspects of working capital management that influenced liquidity reserves in the examined companies



# Contribution

clear analytical perspective  
addressing the importance of:



proper

**WORKING CAPITAL  
MANAGEMENT**



influences the effective use of

**RISK RETENTION**



by means of holding

**LIQUIDITY RESERVES**

*in the existing literature  
debate, the goals of  
working capital  
management are  
virtually no linked with  
the broader  
understanding of  
company's risk  
exposures*



# Literature review – core findings

IN THE STUDIES LINKING WORKING CAPITAL MANAGEMENT AND RISK  
THERE ARE **THREE APPROACHES** CLEARLY IDENTIFIABLE:

→ **liquidity-risk driven**

- finding the balance between capital structure and assets structure, which is essential for maintaining liquidity in the long run

→ **profitability-risk driven**

- surplus of liquid assets does not contribute to the return on equity
- “working capital trap”

→ **balance between profitability and liquidity**

- balance between the volume of current assets and liabilities, allows to increase profitability and at the same time maintain continual inflow of cash



# CONCEPTUAL FRAMEWORK OF THE ANALYTICAL MODEL

## WORKING CAPITAL MANAGEMENT

becomes an important  
element of **RISK  
MANAGEMENT**

it reflects company's attitudes towards  
the use of **RISK RETENTION**

the level of risk retention may be  
reflected by a company's formal and/or  
informal **LIQUIDITY RESERVES**

## 3 CRITICAL ASSUMPTIONS OF THE MODEL:

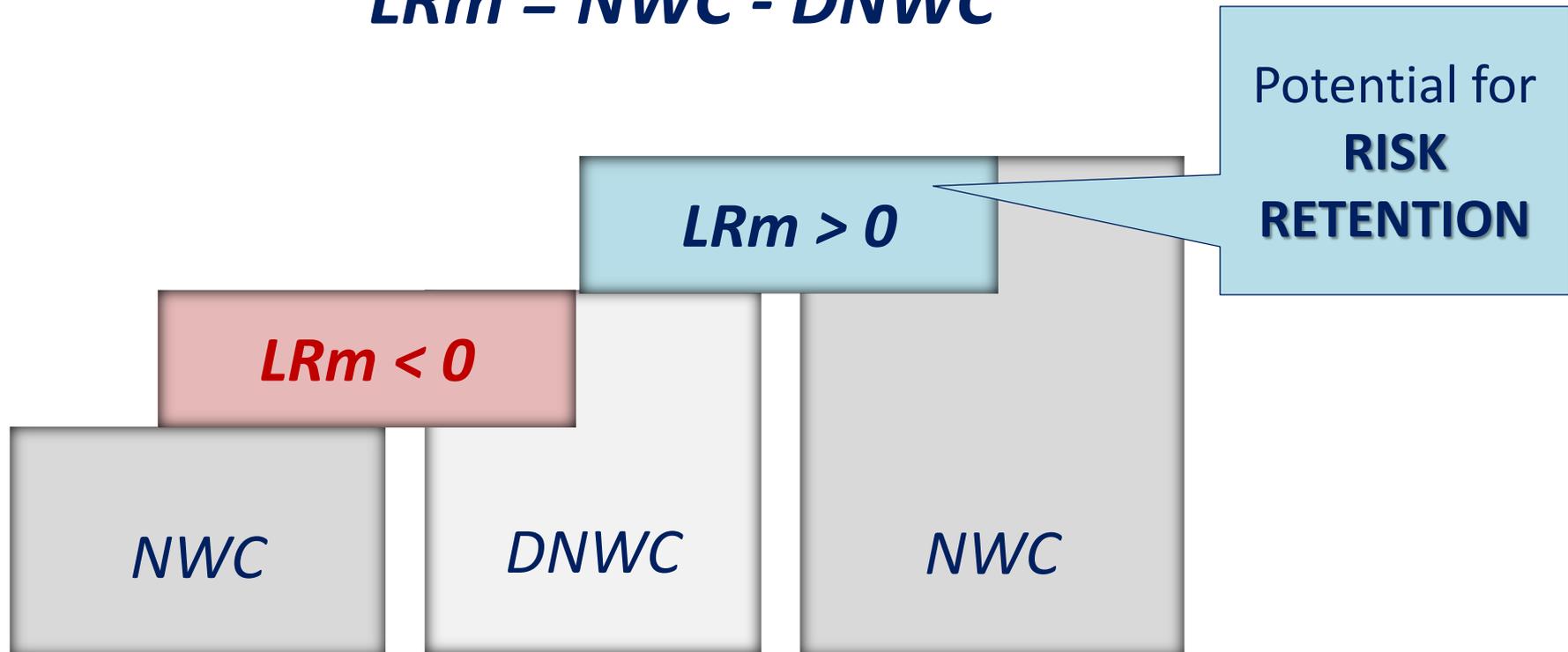
1. risk is perceived in accordance with the **negative concept** (risk outcomes lead to reduction of company's liquidity reserves)
2. company's liquidity reserves result from a **conscious act** (the liquidity reserves reflect the burden of planned (conscious) risk retention (as opposed to unplanned risk retention when risk is retained by default))
3. all company's liquidity reserves are **reflected in balance-sheet** items which make them measurable and thus fully identifiable



# Liquidity reserves in the model

Magnitude of reserves ( $LRm$ ) is defined in the model as the surplus of company's net working capital ( $NWC$ ) over the company's demand on net working capital ( $DNWC$ )

$$LRm = NWC - DNWC$$



# ATTRIBUTES OF LIQUIDITY RESERVES

## relevance ( $LRr$ )

$$LRr = LRm/A$$

the higher is the share of liquidity reserve in company's total assets, the greater is company's ability to retain risk

## time suitability ( $LRt$ )

$$LRt = [(NWC/S) \times 365] - CCC$$

for how many days a company may use cash excess in the case of delay in operating cycle caused by risk occurrence



# Research design and methodology

- **SAMPLE & DATA**

- data provided in EMIS database for all companies listed on Warsaw Stock Exchange
  - out of 837 for 2013, a sample of 493 companies was selected

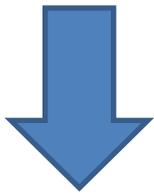
- **METHOD**

- cluster analysis and factor analysis

# Research design and methodology

## FIRST LAYER

recognizing the magnitude of liquidity reserve ( $LRm$ ) in sampled Polish companies, together with addressing its two attributes: relevance ( $RLr$ ) and time-suitability ( $LRT$ )



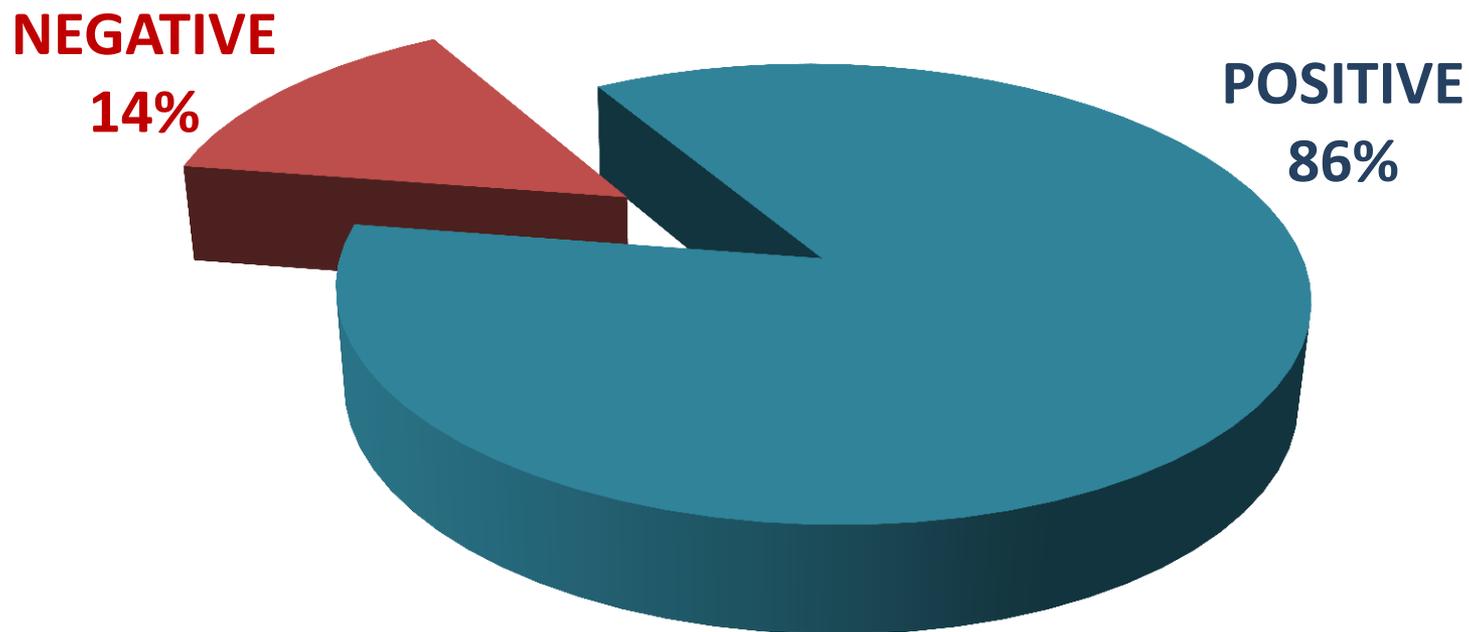
Q1. How many Polish companies possess liquidity reserves and what is the magnitude of these reserves?

Q2. What is the relevance ( $LRr$ ) and time-suitability ( $LRT$ ) of liquidity reserves in companies which distinguish with positive liquidity reserves ( $LRm > 0$ )



# Findings **FIRST LAYER**

The structure of examined companies according to the magnitude of liquidity reserve



Source: own study.

# Findings FIRST LAYER

Characteristics of liquidity reserves of Polish listed companies in 2013  
(for companies with positive liquidity reserves N=423)

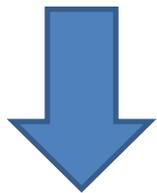
	$LR_m$ (in thous. zł)	$LR_r$	$LR_t$ (in days)
$\bar{x}$	79715,01	16,542%	112,13
$x_{min}$	0,50	0,004%	0,34
$x_{max}$	7185211,50	88,318%	3380,76
median	8397,50	11,587%	37,22
$S(x)$	436457,64	15,672%	323,88

Source: own study.

# Research design and methodology

## SECOND LAYER

To identify these aspects of net working capital management which are important for the magnitude (*LRm*), relevance (*RLr*) and time-suitability (*LRT*) of liquidity reserves

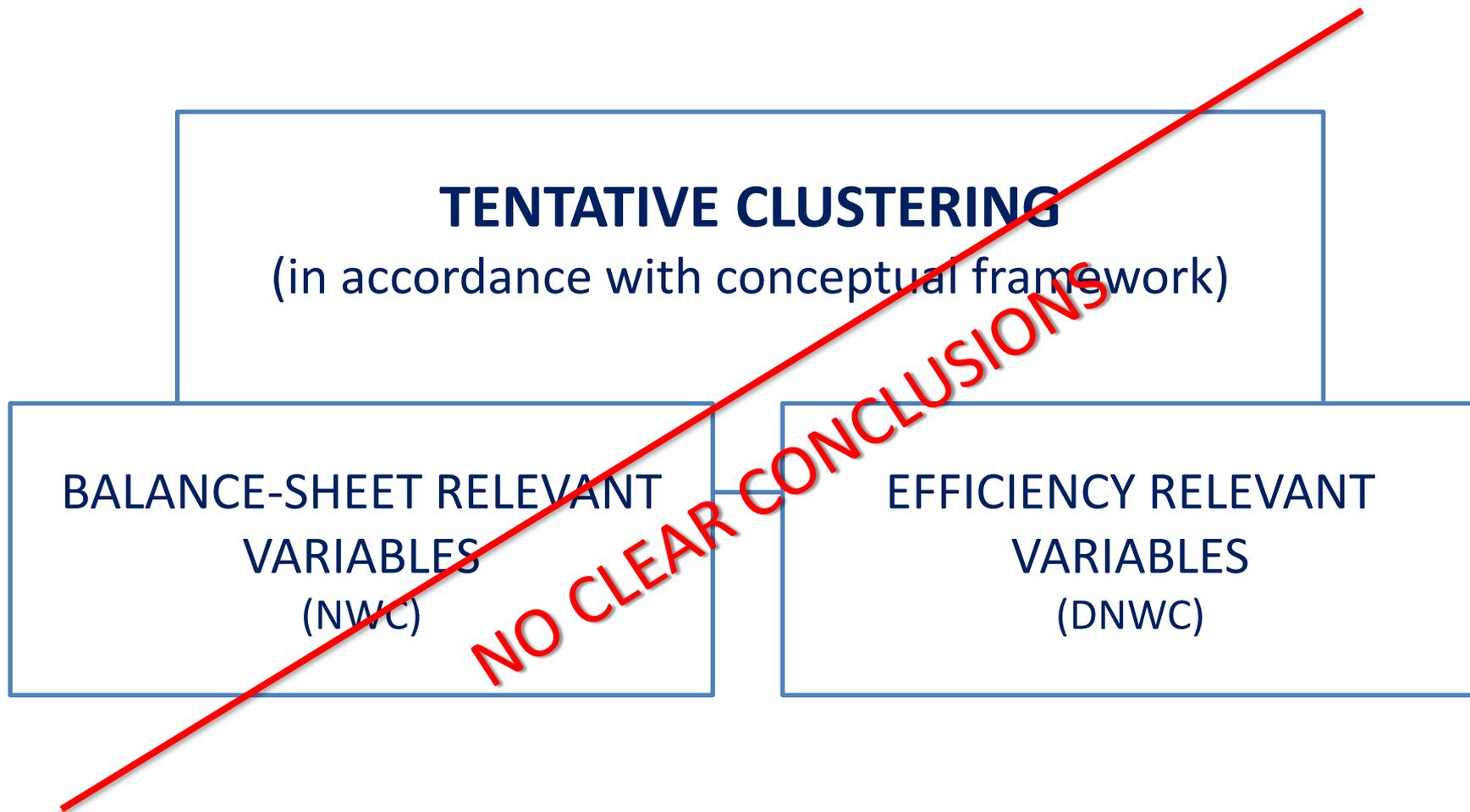


**Q3.** Which aspects of net working capital management were more relevant in Polish companies from liquidity reserve point of view – balance sheet oriented or efficiency oriented?

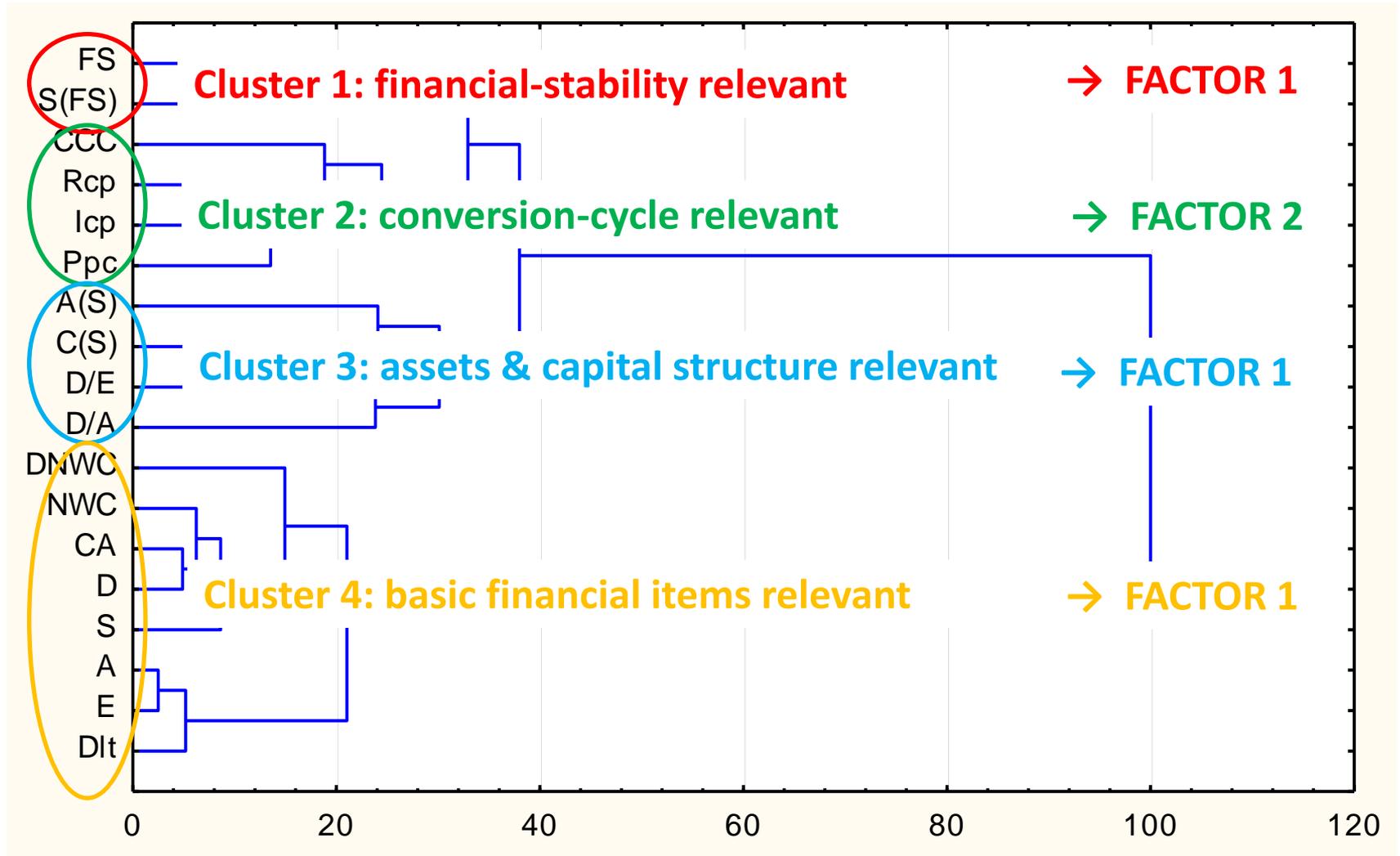
**Q4.** Using the results of the analysis for Polish companies, can it be clearly stated which aspects and routes of working capital management are of particular importance for sourcing liquidity reserves?



# Findings SECOND LAYER



# Tree diagram (dendrogram) for all variables, with Ward method and Euclidean distances



Source: own study.

# Findings #2 LAYER

Matrix of correlations between factors and dependent variables

		$LR_t$
Factor 1	<p>In the examined companies</p> <ol style="list-style-type: none"> <li>1) financial stability was relevant to the magnitude of liquidity reserves (as the correlation coefficient was strong)</li> <li>2) the changes of assets and capital structure were influential on the relevance of liquidity reserves</li> </ol>	-0,0320
Factor 2		0,4210
Factor 3		0,1035
Factor 4		-0,1835
$LR_m$		-0,0170
$LR_r$		0,4345
$LR_t$		1,0000

Source: own study.



# Conclusions

by means of liquidity reserves it can be verified whether a company holds cash exceeding its operating needs



such analysis should be applied within risk management decisions as it supports the choices of risk management tools



useful in identifying whether a company is able to use risk retention effectively  
e.g. if the relevance of liquidity reserve is low, a company technically does not possess risk retention capabilities



# Conclusions

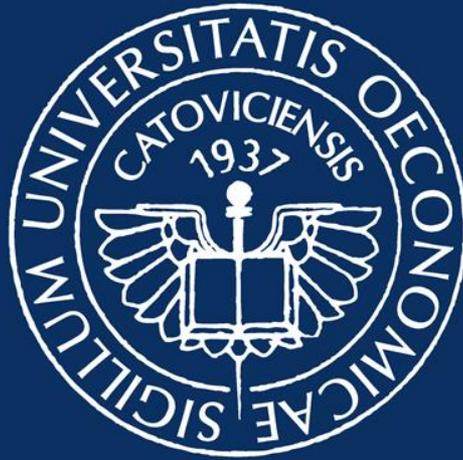
companies significantly vary within the magnitude, relevance and time suitability of liquidity reserves

 which leads to the conclusion that the decisive issues in this context are highly individual

the cluster and factor analysis has shown that in the examined sample of companies financial stability parameters were relevant for the magnitude of liquidity reserves, whereas the changes of assets and capital structure were influential on the relevance of liquidity reserves

 the areas of working capital management relevant for liquidity reserves are not so obvious





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