Chapter

# Financial Logistics Models Based on Systematic Approach Improving Management Solutions

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## Abstract

**All abstract 200 – 220 words.** ***Some words about Background:*** Some firms with good growth opportunities and additional funds could have difficulties accessing external finance. One possible way to enhance their financial inclusion could be an exciting approach to planning the money reserve collected on a firm’s account. ***Some words about Methods:*** The article aims to disclose the introduction of financial logistics as the new theoretical field of management science. The authors present, in this paper, the key findings on the development of logistical models of an optimum money reserve calculation taking into account digital transformation and industry 4.0 technologies and optimization methods. ***Some words about Results:*** The monetary reserve models are analogies of models of storekeeping in supply chains. The specific area of the theoretical research of logistics is shown in this paper, which could be disclosed as the subject of financial logistics as a science. The authors consider the term “Financial Logistics” based on logistics theory and money demand. ***Some words about Conclusions:*** Authors suggest the methodology of studying the nature of both financial and material flows of resources by comparing the relevant formulas. From the researchers’ points of view, financial logistics could be defined as the theory of managing the cash flows based on the logistical models for calculating a corporation’s cash reserve. The authors find it interesting to expand the conditions for calculating financial flows since the uncertainty of external market conditions always influ-ences actual commercial activity.

**Keywords**: financial inclusion, logistics models,cash balance, financial logistics, optimal order size

## 1. Introduction

Currently, industry 4.0 technologies and optimization methods (Spanos et al. 2014; Verny et al. 2020; Baruffaldi and Sternberg 2018; Brenner and Hummel 2017; Kayikci 2018; Tjahjono et al. 2017) allows to develop and implement new operating models (Tamás 2018) in various fields of logistics. The authors take into account the broad treatment of the term Financial Logistics, which could stand for multiple areas of consulting activities, including financial solutions for early-stage business's start-up, growth, and expansion, as well as “[building platforms to assist companies in meeting their benchmark results](https://www.financiallogisticsllc.com/)”.

The authors propose the combined approach concerning some critical issues from the theory of money demand by Bennet T. McCallum and Marvin S. Goodfriend (McCallum and Goodfriend 1987). The improvement of the classical logistical approach to finances is based on the critical papers by Sprenkle (Sprenkle 1969) (regarding the disadvantages of transactions demand for money models), \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The authors suggest \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This article presents the model for determining \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The developed approach considers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This research aims to develop a systematic approach to managing financial flows based on the theoretical system previously implemented in supply chain management.

## 2. Materials and Methods

All the models considered (the model of calculating the cash reserve with the possibility of multiple financial investments, the model of the cash reserve taking into account lending and various financial assets, and the model of lending and financial investments with a limit on the number of interest payments) are based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_.is the space of functions fromwith the norm defined by the ratio



We use the equivalents of \_\_\_\_\_\_\_\_\_\_\_\_\_: is the space of functions from with a generalized first-order derivative also belonging to (Provotorov, Ryazhskikh and Gnilitskaya 2017); is the space of functions from with a generalized first-order derivative with respect to belonging to (the space is introduced similarly); is the set of all functions  with a finite norm:

 (1)

and continuous with respect to in the norm , i.e., such that given ,  is uniform on.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The closure of the setin the norm (1) is denoted by; from here it obviously follows that the condition  is satisfied.

The total amount of all payments to the corporation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## 3. Results

The developed model for calculating the considered cash flow \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The data for the selected period of time was comparable only for a limited number of subindustries that included:

1. Manufacture of machinery and equipment.

2. Manufacture of electrical machines and electrical equipment.

3. Manufacture of cars, trailers and semi-trailers.

4. Manufacture of ships, aircraft and spacecraft and other vehicles.

The data for the selected period of time was comparable only for a limited number of subindustries that included:

* manufacture of machinery and equipment,
* manufacture of electrical machines and electrical equipment,
* manufacture of cars, trailers and semi-trailers, and
* manufacture of ships, aircraft and spacecraft and other vehicles.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_presented in the table 1.

Table 1. The main rental measures taken \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ level | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ level |
| --- | --- |
| SMB \_\_\_\_\_\_ | Exempting \_\_\_\_\_\_\_\_\_\_\_ |
| A deferral on paying \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Property tax incentives \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for Figure 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Figure 1.** Measures taken to support \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Figure 2.** The impact of the change or termination of lease contracts on the lessee’s financial statements.

Figures should be available for editing.

## 4. Discussion

Authors suggest discussing considered theoretical propositions as the introduction to the new field of the research.

The researchers also suggest discussing the use of the proposed approach from the point of view of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## 5. Conclusion

This article presents a model developed by the authors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-

Authors considered a systematic approach comprising \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Thus, going out of the crisis in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and develop digitalization. The Conclusion must be 2-3 paragraphs, detailing the results of the article and future research directions.

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